



University of Colorado **Denver**

2020-21 Undergraduate Catalog

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2020-2021 Undergraduate Catalog



CU Denver

Auraria Campus

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The 2020-2021 CU Denver catalog is considered the source for academic and programmatic requirements for students entering programs during the Fall 2020, Spring 2021, and Summer 2021 semesters. Although this catalog was prepared using the best information available at the

time, all information is subject to change without notice or obligation. The university claims no responsibility for errors that may have occurred during the production of this catalog.

The courses listed in this catalog are intended as a general indication of the University of Colorado Denver curricula on the Denver campus. Courses and programs are subject to modification at any time. Not all courses are offered every semester, and faculty teaching particular courses or programs may vary from time to time. The content of a course or program may be altered to meet particular class needs.

When a student is matriculated and enrolled at CU Denver, they are required to fulfill the general education and graduation requirements specified in the catalog current at that time. When students formally declare a major, they are required to fulfill the major requirements in the catalog current at that time.

Previous editions of this catalog are available [online](#).

The University of Colorado Denver is an affirmative action/equal opportunity employer and educator committed to excellence through inclusiveness.

ABOUT CU DENVER



Welcome to Colorado's public urban research university,

where a diverse student body through quality academics, ambitious research and creative work, and community engagement in the city we call home. We are CU in the city.

Your success is our #1 priority. At CU Denver, you will benefit from:

Academic choices: More than 100 high-quality, in-demand degree programs in seven schools and colleges, leading to bachelor's, master's and doctoral degrees; hands-on learning opportunities, including work in research labs, service learning, study abroad and work-study;

Powerful connections: To partnerships, projects, internships and career opportunities in downtown Denver; to the vibrant arts and culture scene at our front door; and to a network of influential alumni who are leaders in Denver's civic, nonprofit and business communities;

Outstanding location: Access to a vibrant, safe urban lifestyle; resources and support to develop innovative solutions to complex local and global issues; and opportunities to build your skills in the city ranked by Forbes as the #1 Best Place for Business and Careers.

CU Denver is a place of academic excellence, where you will gain the powerful combination of immersive classroom and project-based experiences that are in demand today. Here you will meet gifted faculty, experts in their field, dedicated to student success, academic excellence and the real-world applications of their research and creative work. You'll interact with fellow students who are diverse, goal-oriented and energetic. Whether you engage in undergraduate or graduate studies, the University of Colorado Denver degree earns global respect and you can be confident that you will have been well-prepared for the next stage of your work or academic life.

We're delighted you've chosen CU Denver!

Dorothy A. Horrell, PhD
Chancellor

Executive Team

Dorothy A. Horrell, PhD
Chancellor, University of Colorado Denver
BS, Colorado State University
M.Ed, Colorado State University
PhD, Colorado State University

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Provost and Executive Vice Chancellor for Academic and Student Affairs
BSc, University of Strathclyde (Scotland)
PhD, University of London (England)

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BA, Temple University
MSc, London School of Economics (England)
JD, University of London (England)
EdD, University of Colorado Denver

University of Colorado Denver

The University of Colorado Denver was formed on January 11, 1973, lawmakers, upon proclamation of the governor, amend that state constitution to establish additional CU campuses, transforming the University of Colorado - Denver Center into the University of Colorado Denver (CU Denver). In 1977, CU Denver students began taking classes on the Auraria campus. Today, CU Denver educates more than 15,000 students and is the only public urban research institution in the state of Colorado.

The University of Colorado Denver offers a unique academic experience for students. Conveniently located in the heart of Denver, our students have unparalleled access to the business, cultural and political capital of the West. CU Denver is where academic rigor meets city vigor.

More and more undergraduates are discovering the value of classes in the city taught by professors who are connected to local companies and organizations. New housing adjacent to campus, easy commuting by RTD Light Rail and discounts to cultural and sporting events give students many options for immersion in vibrant city life. In addition, affiliations with research labs and hospitals at CU Anschutz make CU Denver an excellent place to start a health care career.

The University of Colorado Denver enrolls students from 46 different states and countries, and awards over 3,800 undergraduate and graduate degrees every year. It is known for its programs in urban sustainability, criminal justice, business, education, applied science and engineering, film and music industry as well as a full array of professional health programs. The graduate student population is a diverse mix of ages and ethnicities, creating a rich environment for learning and networking.

Other reasons why students choose the University of Colorado Denver:

Small class sizes: average undergraduate student-to-teacher ratio is 18:1.

The Denver vibe: Colorado has always attracted the adventurous. Denver ranks as #1 Best Place to Live (U.S. News & World Report), with an extensive network of bike trails and quick access to mountain sports. CU Denver is adjacent to a thriving arts district.

Collaborative culture: Cross-disciplinary learning and research is a core value: programs blend technology with health care, business with public policy, and behavioral health with architecture.

Choices: With seven schools and colleges offering more than 100 degree programs, the University of Colorado Denver | Anschutz Medical Campus is a major university for the coming century.

CU Denver

Colorado's only public urban research university, CU Denver offers bachelor's, master's and doctoral programs in the heart of the city through seven distinct academic units:

College of Architecture and Planning
College of Arts & Media
Business School
School of Education & Human Development
College of Engineering, Design and Computing Course
College of Liberal Arts and Sciences
School of Public Affairs

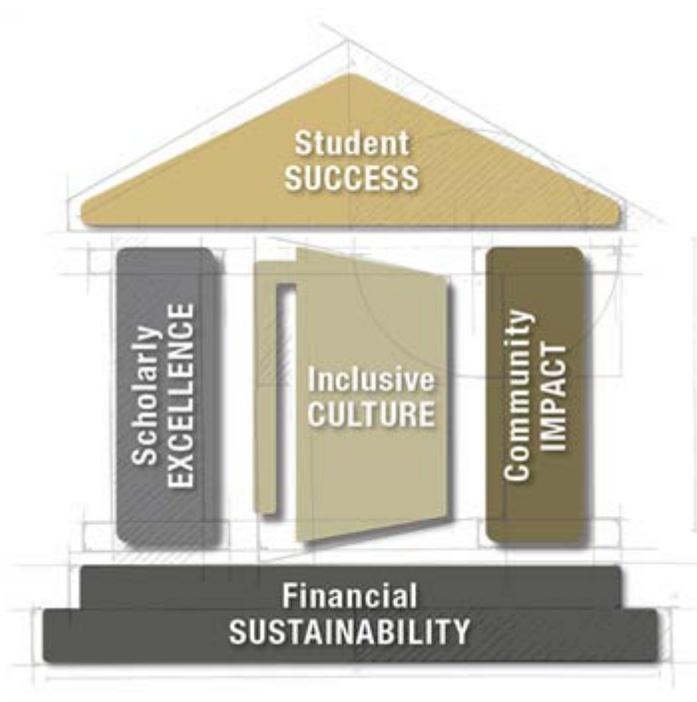
Strategic Priorities

Chancellor Dorothy Horrell has established five strategic priorities to guide CU Denver's ongoing success. Through these priorities, CU Denver aims to be widely recognized as a distinctive asset in the Denver metropolitan area based on quality academics, highly-recognized research and creative work, a diverse and inclusive culture, and impactful civic engagement. The five strategic priorities are as follows:

1. **Student Success.** Our goal is to elevate student success through increased enrollment, retention and graduation rates.
2. **Scholarly Excellence.** We are focused on advancing scholarly excellence and innovation in teaching, research and creative work.
3. **Community Asset.** We are working towards strengthening our position as a vital community asset.
4. **Inclusive Culture.** We are committed to creating a more cohesive, collaborative and inclusive culture.
5. **Financial Sustainability.** Our objective is to achieve long-term financial sustainability and stability.

Faculty, staff and students across the campus have been working on various aspects of these priorities since they were first set in fall 2016. Learn about progress on each priority by clicking on the links above.

The priorities emerged from Chancellor Horrell's 2016 Reach Out and Listen Tour, a series of collaborative forums and meetings with faculty, staff, students and community members that established a shared vision for the future of CU Denver.



University of Colorado System

The University of Colorado is a system of four campuses located in Boulder, Colorado Springs, Denver and Aurora. With combined total enrollments of over 60,000 students, the University of Colorado system consistently ranks in the top 15 among public universities and colleges in overall research expenditures and seventh among public universities in federally funded research. Awards for research within the system total more than \$920 million, with funding provided by federal agencies, appropriations from the state of Colorado and private foundations and donors.

Board of Regents

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District 6

term expires 2021

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term expires 2025

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term expires 2023

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At Large
term expires 2025

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District 4
term expires 2023

Linda Shoemaker
District 2
term expires 2021

History and Evolution of the University of Colorado Denver

1876 Legislature founds the University of Colorado

1883 Medical department opens with two students

1898 CU establishes School of Nursing

1912 CU organizes the Department of Correspondence and Extension in Denver

1913 CU establishes School of Pharmacy

1925 CU dedicates 9th and Colorado Blvd. medical center

1956 Regents purchase Tramway Building for Extension Division

1965 Regents change extension name to University of Colorado-Denver Center

1972 CU-Denver Center changes name to University of Colorado at Denver

1973 School of Dentistry enrolls its first class; state begins building Auraria Campus

1974 CU reorganizes as a four-campus system

1988 CU-Denver moves into the 257,000 square-foot North Classroom Building on the Auraria Campus

- 1992 School of Pharmacy moves from Boulder to Health Sciences Center
- 1995 Government conveys 217 acres at the Fitzsimons Army Base to CU for modern health sciences facility
- 2000 First new and remodeled facilities open at Fitzsimons
- 2004 Regents consolidate CU Denver and Health Sciences Center to form the University of Colorado at Denver and Health Sciences Center
- 2006 Fitzsimons campus renamed Anschutz Medical Campus
- 2007 Regents approve shortened version of the name: University of Colorado Denver
- 2008 Medical, dental, pharmacy and nursing students start classes, Colorado School of Public Health enrolls first students on the Anschutz Medical Campus
- 2011 Regents approve name change, to University of Colorado Denver | Anschutz Medical Campus

Accreditation

The University of Colorado Denver is institutionally accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.

The commission can be contacted at:

230 South LaSalle Street, Suite 7-500
Chicago, IL 60604

Telephone: 1-800-621-7440

Many professional organizations have also granted accreditation to specific academic programs, colleges and schools at the Denver Campus, including:

- Accreditation Board for Engineering and Technology
- Association for the Advancement of Collegiate Schools of Business-International
- Colorado State Board of Education
- Commission on Accreditation of Healthcare Management Education
- Council for Accreditation of Counseling and Related Educational Programs
- Council for the Accreditation for Educator Preparation
- Landscape Architecture Accreditation Board
- National Architectural Accrediting Board
- National Association of Schools of Music
- National Association of Schools of Public Affairs and Administration
- Planning Accreditation Board

Academic Programs

CU Denver is devoted to the needs of the residents of the city and the region. A solid foundation of academic and general education is assured through a comprehensive core curriculum. Students may pursue graduate education through all of the campus' colleges and schools. Pre-professional training in the fields of education, architecture, law, journalism and health careers is also available. Complete listings of areas of study available on the Denver Campus are available in the Programs section of the catalog.

The colleges and schools sections of this catalog provide information on bachelor's, master's and doctoral degree programs, policies on requirements for graduation, course requirements, course-load policies, course descriptions and similar information.

Continuing and Professional Education

The Division of Continuing and Professional Education offers certificate/certification courses, professional development programs, precollegiate outreach programs and personal enrichment courses across the state of Colorado. Courses are offered in a variety of formats, including traditional on-campus, off-campus, online, hybrid, weekend, evening, short and condensed courses and many others.

Registration and tuition vary by school or college. Contact the specific school or college to learn about current program and course offerings or send an inquiry to continuingeducation@ucdenver.edu.

About Our Students

The diversity of our student body is a source of deep pride. With students of color making up 42 percent of the student body, CU Denver is the most diverse research university in Colorado. Classes are filled with traditional students who enrolled after high school as well as transfer students and those who delayed college entry. Many professionals enroll mid-career to retool and strengthen their skills. The average age of an undergraduate student is 23 years while the average graduate student is 31 years old.

Bringing a rich mix of backgrounds, students travel across the country and the world to attend CU Denver. Domestic students come from 48 states and international students from 68 countries. All take advantage of convenient courses at times that meet their schedules. An enviable student-to-faculty ratio of 18:1 and a high-tech advising platform means students receive focused attention from professors and a clear path to graduation.

Related Organizations

CU Denver Alumni

Mailing Address: 1380 Lawrence Street Center, Suite 1201, Denver, CO 80204 (*mailing and physical*)

Telephone: 303-315-2333

E-mail: alumni@ucdenver.edu

CU Denver Alumni is the formal name for our community of former students including over 94,000 graduates from any of the University's undergraduate, graduate, and certificate programs. While 69% of our graduates stay in Colorado, our global community stretches across 103 countries.

CU Denver Alumni advances the University of Colorado Denver through its graduates by inspiring pride, serving as a gateway for career resources, stimulating investment in the future, and illustrating the impact of alumni contributions to the University and each other.

CU Denver Alumni Relations sponsors activities and programs to benefit and engage alumni, current students, and friends of the university. By fostering loyalty among our alumni and providing opportunities for involvement, CU Denver Alumni Relations facilitates an environment in which alumni can establish life-long contact with their alma mater.

University of Colorado Denver - Office of University Advancement

Mailing Address: 1380 Lawrence Street, Suite 1201, Denver, CO 80204

Telephone: 303-315-3601

Fax: 303-315-2063

Email: advancement@ucdenver.edu

The University of Colorado Denver Office of Advancement collaborates with faculty, staff, donors, alumni, and friends to raise private support for the university.

CU Denver academic leadership establishes priorities for private support, and gifts are directed to the specific schools, program, or purpose that the donor designates. CU Denver Advancement staff identify and/or generate interest in the university, assist donors in gift planning, solicit gifts in collaboration with academic partners and leaders, and establish and maintain relations with alumni. (Gift funds are managed and invested by the partner University of Colorado Foundation, which also manages the university endowment).

These gifts endow scholarships and professorships, further research, enrich academic programs, upgrade and construct facilities, and support projects and programs in all areas of the university.

University Quick Facts

CU Denver Quick Facts

Enrollment

- 14,947 students

- 74% undergraduate, 26% graduate/professional
- 73% full-time students
- 85% from Colorado
- 15% nonresident students of which 7% International students from 65 different countries
- 45% male, 54% female
- 44% of new undergraduate students are transfers
- 38% of CU Denver students are Pell recipients

Student-to-Faculty Ratio:

- 18:1

Diverse Population:

- 48% of undergraduates are students of color
- 52% of all new enrolled students are students of color
- Average age of undergraduate students: 23
- Average age of graduate students: 31
- Students from 48 states and DC and 65 countries

Average entering ACT score:

- 23.2 Composite

Average entering SAT score:

- 554 Math
- 559 Verbal

Average high school GPA:

- 3.5

Schools and Colleges on the CU Denver Campus

College of Architecture and Planning
 College of Arts & Media
 Business School
 School of Education & Human Development
 College of Engineering, Design and Computing
 Graduate School

College of Liberal Arts and Sciences
School of Public Affairs

Programs

More than 100 degrees and programs across seven schools and colleges

Degrees

- Bachelor's
- Master's
- Doctoral
- First professional

Most-enrolled Undergraduate Degree Programs:

- Biology
- Psychology
- Music
- Fine Arts
- Architecture

Most-enrolled Graduate Degree Programs:

- Business Administration
- Public Administration
- Counseling
- Information Systems
- Architecture

Research Funding

More than \$400 million in sponsored research annually

Alumni

- 100,000+ alumni
- 71% live in Colorado

National Rankings

US News and World Report 2019:

- #112 among Top Public Schools
- #87 in graduate clinical psychology programs
- #69 in graduate biomedical engineering programs

- #28 in graduate healthcare management programs
- #25 among graduate public affairs programs
 - #11 in environmental policy and management
 - #21 in nonprofit management
 - #23 in public management and leadership
- #134 in online graduate education programs

Among top public schools

- #48 for part-time MBA programs
- #52 for graduate statistics programs
- #78 for graduate mathematics programs
- #78 for graduate civil engineering programs
- #88 for overall undergraduate business programs

**For the most up to date information, visit the following website: <http://www.ucdenver.edu/about-us/facts/>

ADMISSIONS INFORMATION

UNDERGRADUATE ADMISSIONS

(Applies to Fall 2020, Spring 2021 and Summer 2021)

The University of Colorado Denver provides a diverse array of baccalaureate majors, minors, certificates, and teacher licensure options to meet the ever-challenging demands of a global society. Undergraduate education programs consist of a general core curriculum, a major, and elective courses for all areas of study. The campus-wide core curriculum develops proficiency in writing and mathematics, cultivates a breadth of knowledge, promotes critical thinking, allows for the flexibility to meet career goals, and helps develop sensitivity to cultural diversity and international perspectives.

A list of all undergraduate programs, including minors and online programs, is available by clicking [here](#).

Everyone is welcome to apply. CU Denver values a culture of inclusion and does not discriminate on aspects of identity, including but not limited to gender, race, ethnicity, sexual orientation, ability status, veteran status, nationality, citizenship, religion, and socioeconomic background.

CU Denver seeks to identify applicants who are likely to be successful in a rigorous academic program of study. Admission decisions are based on many factors, the most important being:

- Previous academic performance
- Evidence of academic ability and accomplishment as indicated by scores on national aptitude tests
- Evidence of maturity, motivation, and potential for academic success

CU Denver may deny admission to applicants or readmission to former students whose total credentials indicate an inability to assume obligations of performance and behavior deemed essential by the university.

After completing the application process, official notification of your admission status is provided by the Office of Undergraduate Admissions.

NOTE: The University of Colorado Denver reserves the right to change the admission decision at any time if additional credentials are received that affect your qualifications.

General Contact Information for the Office of Undergraduate Admissions

Physical Address: 1201 Larimer Street, Suite 1005 Denver, CO 80204

Mailing Address: Campus Box 167 PO Box 173364 Denver, CO 80217-3364

Telephone: 303-315-2601

E-mail: admissions@ucdenver.edu

Application Deadlines

- **Fall 2020** - *August 1, 2020*
- **Spring 2021** - *January 1, 2021*
- **Summer 2021** - *June 1, 2021*

The university may change document/credential deadlines in accordance with enrollment demands. For the best scholarship and registration time considerations, applicants should apply as early as possible. Admission to the university does not guarantee the availability of desired courses. For an applicant to be considered for a specific term, all documents required for admission must be received by the deadline for that term. Applicants who are unable to meet the deadline may elect to be considered for a later term (see Term Change Requests). Please allow sufficient time to have transcripts sent from previously attended institutions.

Freshman Student Admission

The University of Colorado Denver considers a number of factors in determining student's academic success. CU Denver follows Colorado Department of Higher Education (CDHE) freshman admission standards and uses the average GPA and ACT/SAT middle 50 percent ranges to help determine admissibility. Meeting or not meeting the middle 50 percent does not guarantee admission.

Applicants are considered under freshmen admission standards if:

- applying for the first time after graduating from high school or passing a high school equivalency exam; and/or
- earned fewer than 24 college-level credit hours since high school graduation.

Note: College credits earned while in high school may be transferrable to the university but are not required for an admission decision.

Admission Consideration by Academic Program

In addition to the above admission standards, each school/college within CU Denver has admission criteria specific to their area.

College of Architecture and Planning

Applicants who have a cumulative 3.0 GPA and a Composite score of 24 on the ACT or 1150-1180 on the SAT Total (Math and Evidence-Based Reading and Writing) Score are considered strong candidates for admission to the College of Architecture and Planning. Applicants not meeting requirements for direct admission to the College of Architecture and Planning may be considered for admission to the College of Liberal Arts and Sciences with a Pre-Architecture interest.

College of Arts & Media

Admission to CU Denver is all that is required to start in many of the College of Arts & Media degree programs, with the exception of those listed below.

- Music & Entertainment Industry Studies (MEIS): In addition to being admitted to CU Denver, applicants to one of the audition track programs in the *Music and Entertainment Industry Studies (MEIS)* Department must complete additional music application requirements. Please review the music section on the [How to Apply webpage](#) for complete information about the audition/application process for audition track program applicants. Applicants to the MEIS non-audition track programs do not have to audition or complete any additional requirements.

- **Film & Television:** The Film and Television Department requires that applicants complete a secondary Film & Television application in addition to being admitted to CU Denver. Please review the film section on the [How to Apply webpage](#) for complete information about the secondary application for Film & Television program applicants.

Business School

Applicants whose cumulative GPA and test scores meet or exceed the middle 50 percent range are considered strong candidates for admission to the Business School.

School of Education & Human Development

For admission to the School of Education & Human Development, applicants whose cumulative high school GPA and test scores fall into the middle 50 percent range are strong candidates for admission to the School of Education & Human Development. A minimum 2.4 cumulative high school GPA is recommended, however, students with a 2.0 cumulative GPA are considered.

Note: The Professional Year, a two-semester (fall and spring) residency in the student's final year of the undergraduate degree with licensure programs, requires a separate application and acceptance is not guaranteed. For instructions and minimum requirements, please see the [Education and Human Development website](#).

College of Engineering, Design and Computing

For direct admission to the College of Engineering, Design and Computing, freshman applicants must meet the following criteria:

<p>Direct Admission to:</p>	<p>Criteria:</p>
<ul style="list-style-type: none"> • BS in Civil Engineering • BS in Construction Engineering and Management • BS in Computer Science • BS in Electrical Engineering • BS in Mechanical Engineering • BS in Bioengineering 	<ul style="list-style-type: none"> • Minimum 3.000 cumulative high school GPA <p>AND</p> <ul style="list-style-type: none"> • Minimum 24 ACT Composite and 25 ACT Math Score or • Minimum 1180 SAT Composite and 590 SAT Math Score
<p>Direct Admission to:</p>	<p>Criteria:</p>
<ul style="list-style-type: none"> • BA in Computer Science • BS in Construction Management 	<ul style="list-style-type: none"> • Minimum 2.600 cumulative high school GPA <p>AND one of the following two requirements:</p> <ul style="list-style-type: none"> • Minimum 22 ACT Composite OR 22 ACT Math • Minimum 1110 SAT Composite OR 540 SAT Math

Admission to Pre-Engineering	Criteria:
<p>Students who do not meet the criteria for direct admission to a major will be considered for admission to Pre-Engineering with a major interest.</p>	<ul style="list-style-type: none"> • Minimum 2.600 cumulative high school GPA <p>AND one of the following two requirements:</p> <ul style="list-style-type: none"> • Minimum 22 ACT Composite OR 22 ACT Math • Minimum 1110 SAT Composite OR 540 SAT Math
<p>Admission to College of Liberal Arts and Sciences - Undeclared</p>	
<ul style="list-style-type: none"> • Students who do not meet the criteria for direct admission to a major or Pre-Engineering, but otherwise meet the university's admission criteria, will be admitted to CLAS as an undeclared major. 	

For International Students who did not graduate from a U.S. high school: The ACT/SAT requirement is waived; instead, students must meet the minimum cumulative high school GPA requirement above and have completed three (3) years of high school math with a cumulative 2.7 GPA in math courses.

Please visit the College of Engineering, Design and Computing website for additional information.

College of Liberal Arts and Sciences

Applicants whose cumulative GPA and test scores meet or exceed the middle 50 percent range are considered strong candidates for admission to the College of Liberal Arts and Sciences.

School of Public Affairs

Applicants whose cumulative GPA and test scores meet or exceed the middle 50 percent range are considered strong candidates for admission to the School of Public Affairs.

How to Apply for Freshman Admission

1. Complete and submit your application online at www.ucdenver.edu/admissions.
2. Pay your \$50 non-refundable application fee. **Note:** You can indicate your eligibility for a fee waiver when you apply.
3. Send official high school transcripts or high school equivalency exam scores to the Office of Undergraduate Admissions mailing address or electronically.
 - *For high school graduates:* An admission decision can be determined before high school graduation. However, if admitted to CU Denver, a final official high school transcript with a graduation date will be required.
 - *For high school equivalency exam recipients:* Students who did not graduate from high school are required to have a copy of their high school equivalency exam test scores and certificate sent directly from the certifying agency to the CU Denver Office of Undergraduate Admissions. High school equivalency exam scores and ACT or SAT scores are the basis for the admission decision.
4. Send official SAT or ACT scores to the Office of Undergraduate Admissions mailing address or electronically.
 - Scores reported on official high school transcripts are considered official test scores. Otherwise, please request test score reports from the offices listed below:

American College Testing Program (ACT)
P.O. Box 451
Iowa City, Iowa 52243
319-337-1313
www.ACT.org
school code: 0533

The College Board (SAT)
P.O. Box 8057
Mount Vernon, IL 62864
866-756-7346
www.collegeboard.org
school code: 4875

Transfer Student Admission

Applicants are considered transfer students for admission purposes if they have completed any number of college courses after graduating from high school or passing a high school equivalency exam. Applicants with college courses taken prior to high school graduation are considered freshmen for admission purposes.

Transfer applicants who graduated from high school in 1988 or later are subject to MAPS requirements. Transfer students who graduated from high school in 2008 or later and have fewer than 30 college credits completed at the time of application are subject to HEAR requirements in addition to MAPS.

Admission Consideration

At the time of application, admission consideration is determined by the following:

- Applicants with 23 or fewer semester hours of completed college-level course work* are considered for admission as freshmen based on high school GPA or high school equivalency exam scores and ACT or SAT scores.
 - Applicants with 24 or more semester hours of completed college-level course work* are considered for admission based upon college course work alone.
- *College-level coursework must be completed at a regionally accredited institution as outlined in transfer credit policy on accreditation.

Admission Criteria by Academic Program (For applicants with 13 or more completed college-level coursework at time of application)

College of Architecture and Planning

For admission to the College of Architecture and Planning, applicants must have a 2.750 cumulative GPA. Applicants with at least a 2.300 cumulative GPA may be considered on an individual basis if the academic record shows consistent improvement and/or strong performance in science, mathematics, art, or architecture-oriented courses. Applicants not meeting requirements for direct admission to the College of Architecture and Planning may be considered for admission to the College of Liberal Arts and Sciences with a Pre-Architecture interest.

College of Arts & Media

For admission to the College of Arts & Media, a minimum 2.400 cumulative GPA is required; however, students with a 2.000 cumulative GPA are considered.

- Music & Entertainment Industry Studies (MEIS): In addition to being admitted to CU Denver, applicants to one of the audition track programs in the *Music and Entertainment Industry Studies (MEIS)* Department must complete

additional music application requirements. Please review the music section on our How To Apply webpage for complete information about the audition/application process for audition track program applicants. Applicants to the MEIS non-audition track programs do not have to audition or complete any additional requirements

- **Film & Television:** The Film and Television Department requires that applicants complete a secondary Film & Television application in addition to being admitted to CU Denver. Please review the film section on our How To Apply webpage for complete information about the secondary application for Film & Television program applicants.

Business School

For admission to the Business School, a minimum 2.400 cumulative GPA is required; however, applicants with a 2.000 cumulative GPA are considered.

Note: Students who have completed an undergraduate degree in business will not be accepted for a second undergraduate degree-seeking status in the Business School. These students are encouraged to pursue a graduate degree in business.

School of Education & Human Development

For admission to the School of Education & Human Development, a minimum 2.000 cumulative GPA is required for non-licensure programs including Human Development and Family Relations, BS and Education and Human Development, Early Childhood Education Non-Licensure, BA. For admission to the EDHD BA licensure program, a cumulative GPA of 2.400 is required.

**Students who already hold a BA/BS degree and are interested in teacher licensure are encouraged to contact the School of Education & Human Development for information on graduate teacher licensure options.*

Note: The Professional Year, a two-semester (fall and spring) residency in the student's final year of the undergraduate degree with licensure programs, requires a separate application and acceptance is not guaranteed. For instructions and minimum requirements, please see the Education and Human Development website.

College of Engineering, Design and Computing

For direct admission to the College of Engineering, Design and Computing, transfer applicants meet the following criteria:

Direct Admission to:	Criteria:
<ul style="list-style-type: none"> • BS in Civil Engineering • BS in Construction Engineering and Management • BS in Computer Science • BS in Electrical Engineering • BS in Mechanical Engineering • BS in Bioengineering 	<ul style="list-style-type: none"> • Minimum 3.0 overall GPA with a grade of B- or better in Calculus I OR • Minimum 2.75 overall GPA AND a minimum 2.5 GPA (based on most recent course attempts) in Calculus I, Calculus II, and Calculus-based Physics I with corresponding lab, with a grade of C- or better in each course. <p>Note: For admission into the Computer Science major, Calculus-based Physics I IS NOT required, but will be accepted.</p> <p>In addition, department chairs may consider the utilization of any subsequent math courses for the Calculus I / Calculus II /physics GPA requirement.</p>
Direct Admission to:	Criteria:
<ul style="list-style-type: none"> • BA in Computer Science • BS in Construction Management 	<ul style="list-style-type: none"> • Minimum 2.5 overall GPA • Completion of at least one of the following courses with a grade of C or better: College Algebra, College Trigonometry, Pre-Calculus, Calculus I, or Calculus II

Admission to Pre-Engineering	Criteria
Students who do not meet the criteria for direct admission to a major will be considered for admission to Pre-Engineering with a major interest.	<ul style="list-style-type: none"> • Minimum 2.5 overall GPA • Completion of at least one of the following courses with a grade of C or better: College Algebra, College Trigonometry, Pre-Calculus, Calculus I, or Calculus II
Admission to CLAS - Undeclared	
Transfer students who do not meet the criteria for direct admission to a major or Pre-Engineering, but otherwise meet the University's admission criteria, will be admitted to CLAS as an undeclared major, or in the case of an IUT, remain in their current CU Denver school or college.	

Notes: CU Denver students may apply to a major or Pre-Engineering major through an Intra-University Transfer (IUT) **after** they have completed 12 or more CU Denver credit hours. Please visit the College of Engineering, Design and Computing website for additional information.

College of Liberal Arts and Sciences

For admission to the College of Liberal Arts and Sciences, a minimum 2.400 cumulative GPA is required; however, applicants with a 2.000 cumulative GPA are considered.

School of Public Affairs

For admission to the School of Public Affairs, a minimum 2.400 cumulative GPA is required; however, applicants with a 2.000 cumulative GPA are considered.

How to Apply as a Transfer Student

1. Complete and submit your application online at www.ucdenver.edu/admissions.

2. Pay your \$50 nonrefundable application fee. **Note:** You can indicate your eligibility for a fee waiver when you apply.
3. Request official transcripts from each regionally accredited college or university attended, including foreign institutions. Official transcripts should be sent directly to the CU Denver Office of Undergraduate Admissions mailing address or electronically.

Non-Degree Student Admission

Non-degree eligibility requires a minimum 2.000 cumulative GPA.

Note: For further information on financial implications for non-degree students, please visit the [financial aid page](#).

How to Apply as a Non-degree Student

1. Complete and submit your application online at www.ucdenver.edu/admissions.
2. Pay your \$50 nonrefundable application fee.
3. No additional credentials are required.

Readmission Requirements for Former Students

Degree-seeking students who have not attended classes on the Denver Campus for one year (three semesters) or longer must apply for readmission by completing an online application. The University of Colorado transcripts (Boulder, Colorado Springs, & Denver) are not required; however, official transcripts from each college or university attended following enrollment at CU Denver must be submitted.

Note: The Office of Undergraduate Admissions may require you to resubmit transcripts depending on the desired major.

How to Apply as a Readmit Student

For instructions on how to reapply, please visit the [How to Apply as a Transfer Student](#) section.

Second Bachelor's Degree Admission

Applicants who already hold a bachelor's degree may apply for admission to complete a second bachelor's degree. Students cannot apply to the same major in which they previously have received a bachelor's degree. If you do not plan to complete a second

bachelor's degree (only need to complete pre-requisites), you must apply as a **graduate** non-degree or degree-seeking student.

Note: There are implications for students wishing to pursue a second bachelor's degree in the Business School or the School of Education & Human Development.

How to Apply as a student seeking a Second Bachelor's Degree

For instructions on how to apply, please visit the How to Apply as a Transfer Student section.

Higher Education Admission Requirements (HEAR)

First-time freshmen as well as transfer applicants with fewer than 30 credit hours who graduated from high school in spring of 2008 or later must meet the state of Colorado Higher Education Admission Requirements (HEAR) for high school units of study. College courses taken before or after graduation from high school can be considered toward fulfillment of HEAR unit requirements for admission consideration.

For students who graduated in 2008 or 2009, the following minimum high school courses (units) are required:

English	4 years (units)
Mathematics	3 years (units)
Natural Science	3 years (units), 2 of which must be lab-based
Social Studies	3 years (units), 1 of which must be United States or world history
Academic Electives	2 years (units)

For students who graduated in 2010 or later, the following minimum high school courses (units) are required:

English	4 years (units)
Mathematics	4 years (units)
Natural Science	3 years (units), 2 of which must be lab-based
Social Studies	3 years (units), 1 of which must be United States or world history
Foreign Language	1 year (unit), must be in a single language

Academic Electives

2 years (units)

Students with HEAR deficiencies may be considered for admission on an individual basis based on the rigor of units completed as well as other admission criteria (e.g., test scores and GPA).

Minimum Academic Preparation Standards (MAPS)

First-time freshman and transfer students entering the University of Colorado Denver are required to meet the following minimum academic preparation standards (MAPS) for high school units of study, either prior to initial enrollment or before graduation from the University of Colorado Denver. College courses taken before or after graduation from high school can be considered toward MAPS fulfillment. **Note:** Students who graduated from high school between 1988 and 2009 may have reduced unit requirements in some areas. Students who graduated from high school before 1988 are exempt from MAPS. Students with MAPS deficiencies may be considered for admission to CU Denver. If admitted, students must make up any MAPS deficiencies prior to graduation from CU Denver. Students may make up MAPS deficiencies by successful completion of:

1. Courses taken at CU
2. Courses taken at other institutions of higher education
3. Additional high school credits
4. Credit-by-examination programs
5. Other requirements as approved by each college or school on the Denver Campus

MAPS Requirements by School or College:

COLLEGE OF ARCHITECTURE AND PLANNING	<i>Years</i>
English (emphasis on composition)	4
Mathematics (including two years of algebra and one year of geometry)	4
Natural science (including physics and/or biology and at least one lab course)	3
Social science (including one year of U.S. or world history)	3
Foreign language (all units must be in a single language)	2
Academic elective	1
Total	17

COLLEGE OF ARTS & MEDIA	<i>Years</i>
English (emphasis on composition-also recommend literature and grammar and strongly recommend one year of speech/debate)	4
Mathematics (three years at the college preparatory level; no more than one year of business or consumer mathematics)	4
Natural science (including one year of laboratory science)	3

Social science (including one year of U.S. or world history)	2
Foreign language (all units must be in a single language)	2
Academic elective or arts course	1
Total	16

BUSINESS SCHOOL

English (emphasis on composition-one year of speech/debate and two years of composition are strongly recommended)	4
Mathematics (including two years of algebra and one year of geometry)	4
Natural science (including two years of laboratory science)	3
Social science (including one year of U.S. or world history)	2
Foreign language (all units must be in a single language)	2
Academic elective (additional course in English, foreign language, mathematics, natural or social science)	1
Total	16

COLLEGE OF ENGINEERING, DESIGN AND COMPUTING

English (emphasis on composition-also recommend literature and grammar and strongly recommend one year of speech/debate)	4
Mathematics (including two years of algebra, one year of geometry and one year of trigonometry and analytical geometry)	4
Natural sciences (including one year of physics, one year of chemistry and two years of laboratory science)	3
Foreign language (all units must be in a single language)	2
Social science (including one year of U.S. or world history)	2
Academic elective	1
Total	16

COLLEGE OF LIBERAL ARTS AND SCIENCES

English (emphasis on composition-also recommend literature and grammar and strongly recommend one year of speech/debate)	4
Mathematics (three years at the college preparatory level; no more than one year of business or consumer mathematics)	4
Natural science (including one year of laboratory science)	3
Social science (including one year of U.S. or world history)	2
Foreign language (all units must be in a single language)	2
Academic elective	1
Total	16

SCHOOL OF EDUCATION AND HUMAN DEVELOPMENT

English (emphasis on composition-also recommend literature and grammar and strongly recommend one year of speech/debate)	4
Mathematics (three years at the college preparatory level; no more than one year of business or consumer mathematics)	4

Natural science (including one year of laboratory science)	3
Social science (including one year of U.S. or world history)	2
Foreign language (all units must be in a single language)	2
Academic elective	1
Total	16

SCHOOL OF PUBLIC AFFAIRS

English (emphasis on composition-also recommend literature and grammar and strongly recommend one year of speech/debate)	4
Mathematics (three years at the college preparatory level; no more than one year of business or consumer mathematics)	4
Natural science (including one year of laboratory science)	3
Social science (including one year of U.S. or world history)	2
Foreign language (all units must be in a single language)	2
Academic elective	1
Total	16

High School Postsecondary and Concurrent Enrollment

High school students with demonstrated academic abilities may be admitted to CU Denver with special approval for one term only. This approval may be renewed. Credit for courses taken may subsequently be applied toward a university degree program, if applicable. For more information and application instructions, contact the Office of Admissions, 303-315-2601 or admissions@ucdenver.edu.

Advanced Placement (AP) Program

The Advanced Placement Program of the College Entrance Examination Board (CEEB) allows students to take advanced work while in high school and then be examined for credit at the college level. Students who take advanced placement courses and subsequently receive scores of 3, 4 or 5 on the CEEB Advanced Placement Examination are generally given college credit for lower-level courses in which they have demonstrated proficiency. Refer to the following chart for general information and consult with your advisor to determine how the credit can be applied to your specific degree program. Original, official score reports must be submitted to the Office of Admissions for credit award consideration.

This chart represents academic credit for students admitted to the University of Colorado Denver beginning fall 2016. Students admitted prior to fall 2016 should consult the University Catalog corresponding to the year in which the exam was taken.

Advanced Placement (AP) Chart

International Baccalaureate (IB) Diploma Program

The International Baccalaureate Diploma Program (IB), available at select high schools, is a rigorous, pre-university course of study emphasizing liberal arts from an international perspective.

In accordance with HB 03-1108, CU Denver will grant at minimum 24 semester hours of credit for any student who has graduated from high school having successfully completed an International Baccalaureate diploma program with a minimum score of 4 on each exam. Credit may be granted for individual IB courses where examinations are completed with at least a score of 4 for students who do not complete an IB diploma program. Refer to the following chart for general information and consult with your advisor to determine how the credit can be applied to your specific degree program. Original, official IB transcripts with exam scores must be submitted to the Office of Admissions for credit award consideration.

This chart represents academic credit for students admitted to the University of Colorado Denver beginning fall 2016. Students admitted prior to fall 2016 should consult the University Catalog corresponding to the year in which the exam was taken.

International Baccalaureate (IB) Chart

College-Level Examination Program (CLEP)

Incoming students may earn university credit by examination in some subject areas in which they have demonstrated college-level proficiency. Interested students may take approved examinations through the College-Level Examination Program (CLEP) of the College Entrance Examination Board (CEEB) testing service.

Acceptable CLEP examinations and credit awards are outlined in the following chart. Original, official CLEP score reports must be submitted to the Office of Admissions for credit award consideration.

This chart represents credit awarded for exams taken from August 2019 and later. For exams taken in prior or future catalog years, consult those academic catalogs for exam equivalency information.

Select CLEP Exams taken January 2019 and later will receive gtPathways credit.

Transfer of CLEP (College Level Examination Program) gtPathways

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

Students may earn credit through certain College-Level Examination Program (CLEP) examinations, provided that they score at the 50th percentile or above. CLEP credit may be applied toward graduation if comparable to CU Denver coursework included in the College of Engineering curriculum. Official CLEP score reports are required for transfer credit consideration.

College of Liberal Arts and Sciences

The use of CLEP subject examinations toward major, minor or certificate requirements is subject to a separate evaluation by the faculty advisor in the department or program. To receive academic credit from CLEP, students must present official test results to the Denver Campus Office of Admissions. A maximum of 30 hours of CLEP credit will count toward the degree.

Cambridge A-Levels

Incoming students may earn credit from the Cambridge A-Level examinations. Cambridge A-Levels are internationally benchmarked qualifications providing excellent preparation for university education. They are taken in over 125 countries and offer a wide variety of different subjects. Cambridge International A-Level qualifications are widely recognized and valued by universities and employers alike. CU Denver does not recognize AS-Levels currently. The acceptable A-Level examinations and credit awards are outlined in the chart linked below. Original, official A-Level score reports must be submitted to International Admissions for credit award consideration.

This chart represents credit awarded for exams taken during the 2018-2019 catalog year. For exams taken in prior or future catalog years, consult those academic catalogs for exam equivalency information.

A-Level Exams

Joint Services Transcript Credit

Beginning Spring 2019, select courses and occupations from the Joint Services Transcript qualify for the Colorado gtPathways program. The courses and occupations in this chart can apply to CU Denver's Undergraduate Core Curriculum. An official copy of the Joint Service Transcript is required for evaluation.

Transfer of Joint Service Transcript Military Occupations Evaluation

Military Experience Credit

It is the policy of CU Denver to award transfer credit for military courses and/or military service based on the recommendations of the American Council on Education (ACE)'s Guide to the Evaluation of Education Experiences in the Armed Services, provided such credit is generally applicable to CU Denver programs of study. For military transcripts such as CCAF and AARTS, transfer credit is considered on the same basis as transcripts from traditional collegiate institutions.

Upon review of the Certificate of Release of Discharge from Active Duty form (DD-214)/Member 4 Service 2 or additional documentation as required either elective or core course credit will be awarded based on ACE recommendations.

Element of Service	Course Awarded	Credit Hours Awarded	CU Denver Undergraduate Core Curriculum Category or Requirement Fulfilled
Basic Training	HUMN 1999ME	3	Humanities
Non- Commissioned Officer's Course	SSCI 1999ME	3	Social Science
Overseas Deployment of at Least 6 Months	None	None	International Perspectives (Waived of Requirement)
Military Language Training Institute	None	None	School/College Foreign Language Graduation Requirement (Waived of Requirement)
Enlisted Rank E4 or higher	None	None	Business Experiential Learning Requirement (Waived of Requirement for Business Majors Only)
Rank E4 or below	XFCR 1999ME	6	General Elective Credit
Rank E5 or higher/ More than 1 enlisted term (5+ years)	XFCR 1999ME and XFCR3999ME	12	General Elective Credit (6 lower division credits and 6 upper division credits)

The applicability of electives is determined by the student's major and/or college.

For any questions or further information regarding military credit transfer, please contact the CU Denver Veteran and Military Student Services at 303-315-7300

DSST/ DANTES Exam Credit

Beginning January 2019, incoming students may earn university credit by examination in some subject areas in which they have demonstrated college-level proficiency. Interested students may take approved examinations through the DSST/DANTES testing as a part of their Military Service

Acceptable DSST examinations and credit awards are outlined in the following chart. Original, official DSST score reports must be submitted to the Office of Admissions for credit award consideration.

Transfer of DSST/DANTES Exams

Transfer of College Level Credit

For more information on transfer of college-level credit, please consult the Academic Policies - Transfer Credit section.

INTERNATIONAL ADMISSIONS

International Admissions

CU Denver International Admissions manages the admission process for international undergraduate applicants who currently have or will require a temporary, non-immigrant visa to study in the United States. Advisors are available to help you through the entire application process.

We also evaluate international academic credentials for international graduate applicants, as well as US citizens, permanent residents, and other applicants who have studies outside the United States before studying at CU Denver.

This page contains information for international applicants to undergraduate programs. For information about applying to a graduate program as an international student, please visit this page.

Contact Information for International Admissions

Physical Address: Student Commons Building, Suite 1119, 1201 Larimer Street, Denver, CO 80204

Mailing Address: Campus Box A005, PO Box 173364, Denver, CO 80217-3364

Telephone: +1 (303) 315-2382

Email: application@ucdenver.edu

Website: <http://internationaladmissions.ucdenver.edu>

Application Information for Undergraduate International Students

The University of Colorado Denver provides a diverse array of baccalaureate majors, minors, certificates, and teacher licensure options to meet the ever-challenging demands of a global society. Undergraduate education programs consist of a general core curriculum, a major, and elective courses for all areas of study. The campus-wide core curriculum develops proficiency in writing and mathematics, cultivates a breadth of knowledge, promotes critical thinking, allows for the flexibility to meet career goals, and helps develop sensitivity to cultural diversity and international perspectives.

A list of all undergraduate programs, including minors and online programs, is available by clicking [here](#).

Everyone is welcome to apply. CU Denver values a culture of inclusion and does not discriminate on aspects of identity, including but not limited to gender, race, ethnicity, sexual orientation, ability status, veteran status, nationality, citizenship, religion, and socioeconomic background.

CU Denver seeks to identify applicants who are likely to be successful in a rigorous academic program of study. Admission decisions are based on many factors, the most important being:

- Previous academic performance
- Evidence of academic ability and accomplishment as indicated by scores on national aptitude tests
- Evidence of maturity, motivation, and potential for academic success

CU Denver may deny admission to applicants or readmission to former students whose total credentials indicate an inability to assume obligations of performance and behavior deemed essential by the university.

After completing the application process, official notification of your admission status is provided by International Admissions.

NOTE: The University of Colorado Denver reserves the right to change the admission decision at any time if additional credentials are received that affect your qualifications

Application Deadlines

Term	Scholarship Consideration Deadline	Recommended Deadline	Final Deadline
Fall 2020	February 15, 2020	March 15, 2020	May 15, 2020
Spring 2021	September 15, 2020	October 15, 2020	November 15, 2020
Summer 2021	N/A	January 15, 2021	March 15, 2021

The university may change document/credential deadlines in accordance with enrollment demands. For the best admission and immigration experience, applicants should apply as early as possible. Admission to the university does not guarantee the availability of desired courses. For an applicant to be considered for a specific term, all documents required for admission must be received by the deadline for that term. Applicants who are unable to meet the deadline may elect to be considered for a later term (see Term Change Requests). Please allow sufficient time to have transcripts sent from previously attended institutions.

Application Processing

Your application will be processed and you will receive a decision within 10 business days of CU Denver receiving a complete application.

Freshman and Transfer Student Admission

CU Denver International Admissions considers a number of factors in determining an applicant's level of academic preparation and success. We interpret the Colorado Department of Higher Education (CDHE) and CU Denver freshman and transfer admission standards in an internally consistent manner, while also taking into account

the wide variety of educational backgrounds and experiences international students bring to the university.

Applicants are considered for admission as freshmen students if applying to university for the first time after completing their secondary education (comparable to US high school completion) or a relevant high school equivalency exam. Applicants are considered for admission as transfer students if they have completed any amount of post-secondary coursework. In unusual or unique cases, International Admissions may elect to use either the freshman or transfer admission criteria in order to base our admission decision on the best available set of evidence regarding the applicant's likelihood for academic success at CU Denver.

For detailed information about CDHE and CU Denver admission criteria for undergraduate applicants, please see [this page](#).

How to Apply for Freshman Admission

1. Complete and submit your application online at <http://internationaladmissions.ucdenver.edu>.
2. Pay your \$75 non-refundable application fee. **Note:** you can provide a fee waiver code, or request a fee waiver, before submitting your application.
3. Provide the following documents:
 - a. Complete transcripts from **all** high schools you have attended - even if you did not graduate from the school.
 - i. For high schools located inside the United States, you **must** provide official transcripts. For high schools located outside the United States, you may provide copies or unofficial transcripts.
 - ii. If your transcript was issued in a language other than English, you must also provide a certified English translation of the transcript. CU Denver does not have a preferred translation provider; we recommend that you use an ATA member company.

Note: You do NOT need to provide an external evaluation of your transcript. International Admissions will evaluate your transcript during the application process. You only need to provide a translation.
 - b. High school completion examination scores, as appropriate for your country or situation. Please see [this list](#) for freshman documentation requirements from around the world.
 - c. SAT or ACT scores (required only if you will graduate from a high school inside the United States). Scores reported on official high school transcripts are considered official test scores. Otherwise, please request test score reports from ACT (school code: 0533) or the College Board (school code: 4875).
 - d. Proof of English language proficiency (ELP). Please see below for more information. Note: applicants who do not provide proof of ELP, or who do not meet the ELP requirement, will be considered for conditional admission.

e. After reviewing your file, International Admissions may determine that we require additional documents. In this case, you must provide all requested documents in order to complete your application.

How to Apply for Transfer Admission

1. Complete and submit your application online at <http://internationaladmissions.ucdenver.edu>.
2. Pay your \$75 non-refundable application fee. Note: you can provide a fee waiver code, or request a fee waiver, before submitting your application.
3. Provide the following documents:
 - a. Complete transcripts from all colleges, universities, and post-secondary institutions of any kind that you have attended - even if you did not complete a degree at the institution.
 - i. For institutions located inside the United States, you must provide official transcripts. For institutions located outside of the United States, you may provide copies or unofficial transcripts.
 - ii. If your transcript was issued in a language other than English, you must also provide a certified English translation of the transcript. CU Denver does not have a preferred translation provider; we recommend that you use an ATA member company.

Note: You do NOT need to provide an external evaluation of your transcript. International Admissions will evaluate your transcript during the application process. You only need to provide a translation.
 - b. If you have completed less than 24 US semester credits or one year of post-secondary study, you must also provide complete transcripts from all high schools you have attended. Please follow the high school transcript instructions listed under “How to Apply for Freshman Admission” above.
 - c. Proof of English language proficiency (ELP). Please see below for more information. Note: applicants who do not provide proof of ELP, or who do not meet the ELP requirement, will be considered for conditional admission.
 - d. After reviewing your file, International Admissions may determine that we require additional documents. In this case, you must provide all requested documents in order to complete your application.

Proof of English Language Proficiency

International applicants to CU Denver must provide proof of English Language Proficiency (ELP) in order to be considered for full admission. Undergraduate applicants (except Nursing) and some graduate applicants will be considered for conditional admission if they apply without adequate proof of ELP. You may meet the ELP requirement via any of the options listed below. For the most up-to-date information, please visit the International Admissions website.

International Admissions will update the English language proficiency policy, effective for admission in the spring 2021 term and forward. Please see below for up-to-date information.

1. Citizenship Exemption

International applicants holding citizenship from the following countries do not need to prove their English language proficiency for admission to CU Denver. The Spring 2021 list is based on the United Kingdom government's list of countries exempt from proving English ability when applying for a UK student visa.

Fall 2020 Admission	Spring 2021 Admission
<ul style="list-style-type: none"> • Australia • Belize • Canada (except Quebec) • Commonwealth Caribbean • Ghana • Ireland • Kenya • New Zealand • Singapore • South Africa • Zimbabwe • United Kingdom 	<ul style="list-style-type: none"> • Antigua & Barbuda • Australia • The Bahamas • Barbados • Belize • Canada • Dominica • Grenada • Guyana • Ireland • Jamaica • New Zealand • Saint Kitts & Nevis • Saint Lucia • Saint Vincent & the Grenadines • Trinidad & Tobago • United Kingdom

2. ESL Academy

International applicants may meet the English language proficiency requirement for any program of study at CU Denver by successfully completing every class in level 5 at CU Denver's ESL Academy.

3. English Language Proficiency Tests

CU Denver accepts the following tests as proof of English language proficiency.

Note: The university minimum scores listed below apply to all undergraduate programs, with the exception of Nursing. Please visit the College of Nursing website for more information.

MINIMUM SCORE REQUIREMENTS:

TOEFL iBT

CU Denver school code: 4875

CU Denver accepts TOEFL MyBest scores.

Comprehensive Score	Fall 2020 Admission	Spring 2021 Admission
	75	79

Subscores	Fall 2020 Admissions	Springs 2021 Admission
Reading	15	18
Listening	15	17
Speaking	18	20
Writing	17	17

IELTS

CU Denver accepts super-scored IELTS scores.

Overall Band Score	Fall 2020 Admission and Spring 2021 Admissions
	6.5

Subscores	Fall 2020 Admission and Spring 2021 Admissions
Reading	5.5
Listening	5.5
Speaking	5.5
Writing	5.5

PTE ACADEMIC

Overall Score	Fall 2020 Admissions	Spring 2021 Admission
	51	58

Subscores	Fall 2020 Admission	Spring 2021 Admission
Reading	44	42
Listening	44	42
Speaking	49	42
Writing	47	42

DUOLINGO ENGLISH TEST

International Admissions is currently piloting the Duolingo English Test for use in undergraduate admissions (except Nursing). Please contact International Admissions for more information.

Total Score	<p><u>Fall 2020 Admission and Spring 2021 Admission</u></p> <ul style="list-style-type: none"> • 160-point scale (test dates starting July 15, 2019): 105 • 100-point scale (test dates prior to July 15, 2019): 48
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Note: The Duolingo English Test currently does not report sub-scores. International Admissions reserves the right to update our minimum requirements in the event that Duolingo starts reporting sub-scores.

4. Coursework Completion

Undergraduate Admission	Transfer Undergraduate Admission
<ul style="list-style-type: none"> • Graduate from high school in the US, with 1+ year of college-prep English coursework • Graduate from a US- or UK- accredited high school over seas 	<ul style="list-style-type: none"> • Earn an associate or bachelor degree in the United States • Complete the GTPathway at a Colorado community college

Undergraduate Admission	Transfer Undergraduate Admission
<ul style="list-style-type: none"> • Graduate from high school in the US, with 1+ year of college-prep English coursework • Graduate from a US accredited high school overseas • Earn a high school credential (comparable to a US high school diploma) in any of the exempt countries listed above • Earn a high school credential (comparable to a US high school diploma) at an exempt-country-accredited school located in a non-exempt country 	<ul style="list-style-type: none"> • Earn an associate or bachelor degree in the United States • Earn a post-secondary credential (comparable to a US associate or bachelor degree) in any of the exempt countries listed above • Earn a post-secondary credential (comparable to a US associate or bachelor degree) at an exempt-country-accredited institution located in a non-exempt country • Earn 24 or more transferable semester credits at another US institution, AND <ul style="list-style-type: none"> ◦ Earn an overall college-level GPA of 2.7/4.0 or higher, OR ◦ Earn a final grade of B- or higher in English Composition 1, or equivalent, or a higher English composition course

5. SPRING 2021 ADMISSION: ADDITIONAL TESTS FOR UNDERGRADUATE ENGLISH LANGUAGE PROFICIENCY

International applicants to undergraduate programs (except Nursing) in the spring 2021 term and forward may also use the following test scores as proof of ELP. International Admissions must receive the official score report in order to use these tests for ELP.

Test	Required Score
ACT: - English	18 or higher
SAT: - Evidence-Based Reading and Writing	480 or higher
Advanced Placement (AP): - English Literature and Composition	3 or higher
International Baccalaureate (IB): - English A Literature (HL or SL) - English A Language and Literature (HL or SL)	4 or higher
General Certificate of Education (GCE) A-Level: - English Literature - English Language	E or higher
General Certificate of Education (GCE) AS-Level: - English Language	E or higher

6. LYNXDIRECT PATHWAY PROGRAM

International freshman applicants to undergraduate programs who do not meet any of the English Language Proficiency requirements listed above will be considered for admission to the LynxDirect pathway program in the CU Denver ESL Academy. The English Language Proficiency requirement for LynxDirect admission is as follows:

TOEFL iBT:

- Comprehensive Score: 70
- Subscores: must reach the High Intermediate threshold in three of the four subscores; the fourth subscore must meet the Low Intermediate threshold (see this page for details)

IELTS:

- Overall Band Score: 6.0
- Subscores: must reach 5.5 or higher in three of the four subscores; the fourth subscore must reach 5.0 or higher

Immigration Process

International Services Specialists in International Student & Scholar Services (ISSS) handle the immigration process for international students. ISSS will issue an immigration document (Form I-20 or Form DS-2019) to you, if applicable, only after you have confirmed your acceptance and submitted the Immigration Clearance Form (see below). Financial documentation is not required at the time of application.

You will be contacted within five (5) business days of receiving your decision letter and will need to provide:

Proof of Financial Support: If you have already sent financial documents to the International Admissions Office, that information will be forwarded to ISSS. If you have not already provided this information, or if your information needs to be updated, you will have an opportunity to provide ISSS with your proof of financial support when you complete the online Immigration Clearance Form that your International Services Specialist will send to you.

Passport/Visa Information: If you have already sent this information to International Admissions, it will be made available to ISSS who will contact you if they need more information.

Note: International students living outside of the U.S. will need to provide a copy of their passport, if it has not already been sent. Those living in the U.S. should be prepared to submit a copy of their passport, visa, Form I-94 Arrival/Departure Record and Form I-20, Form DS-2019, or Form I-797 (if applicable). In all correspondence, please use your name as it appears on your passport.

Please visit ISSS for more information on Pre-Arrival, Arrival at CU Denver, I-20/DS-2019 Timeline, and more.

ADMISSIONS POLICIES

Transcripts

Official High School Transcripts:

Official high school transcripts are required for all degree-seeking undergraduate applicants. Official high school transcripts are those issued by the last institution attended and are accepted via email from a high school official, mail, or electronically through a third party e-transcript exchange agent directly to the Office of Undergraduate Admissions. Hand-carried transcripts or transcripts sent directly by an applicant are considered official only if delivered in the original sealed envelope of the issuing institution.

- High school graduates: Three years of completed high school course work is the minimum requirement for an admission decision. An admission decision can be determined before high school graduation; however, if admitted to CU Denver, a final official high school transcript noting a graduation date will be required.
- High school equivalency exam recipients: Students who did not graduate from high school are required to have a copy of their high school equivalency exam test scores and certificate sent directly from the certifying agency to the CU Denver Office of Admissions. High school equivalency exam scores and ACT or SAT scores are the basis for the admission decision.

Note: Applicants who have attended multiple high schools are only required to submit the transcript of the last institution attended provided that the transcript contains all previous high school course work. When requesting a transcript, indicate to the school official that all course work from previous high school/s be included.

Official College Transcripts:

Official college transcripts are required for all degree-seeking undergraduate applicants. Official college transcripts are those issued by each institution attended and are accepted via mail or electronically through a third party e-transcript exchange agent and sent directly to the Office of Undergraduate Admissions. Hand-carried transcripts or transcripts sent directly by an applicant are considered official only if delivered in the original sealed envelope of the issuing institution.

Individual transcripts are required for each regionally accredited institution attended. Applications are not considered complete until all transcripts from all institutions attended are received.

Note: Transfer credit accepted and documented on another institution's transcript do not fulfill the transcript requirement.

Domestic Students with International Transcripts:

Non-international applicants that have attended and completed course work at a foreign institution must submit transcripts from those institutions. Transcripts that are not in English must be submitted with a certified English translation. Once received, international transcripts are evaluated by the Office of International Admissions.

Note: Evaluations by outside agencies are not accepted or used in an admission decision.

In-Progress Course work:

Applicants who are admitted and enroll at CU Denver with pending completion of in-progress course work are permitted one term to submit final official transcripts. If official transcripts are not received by the end of the initial term of attendance, registration for subsequent terms is restricted. Final transcripts should be sent via mail or electronically through a third party e-transcript exchange agent and sent directly to the Office of Undergraduate Admissions. Hand-carried transcripts or transcripts sent directly by an applicant are considered official only if delivered in the original sealed envelope of the issuing institution.

Remedial/Developmental College Course work:

The University of Colorado Denver does not accept remedial/developmental course work as part of an applicant's cumulative GPA and/or credit total. Remedial/developmental courses are intended to bolster the basic skills of new college students so they are adequately prepared for college-level work. Remedial/developmental courses are typically defined as below a 100 course level.

Note: The University of Colorado Denver does not offer remedial/developmental course work.

Grade Replacement:

Grade replacement policies vary between institutions and CU Denver defers to each institution's policy when evaluating an applicant's cumulative GPA and credits.

Note: The University of Colorado does not offer grade replacement for any course work completed at CU Denver.

Semester Hours:

All college course work is converted into semester hours for purposes of admission evaluation. For example, 1.5 quarter hours is equal to 1 semester hour and 1 trimester hour is equal to 0.75 semester hours.

Required Institution Accreditation:

The University of Colorado Denver only considers transcripts from regionally accredited institutions in an admission decision. The following regional accrediting organizations are acceptable:

- Higher Learning Commission
- Accrediting Commission for Community and Junior Colleges
- Middle States Commission on Higher Education and Middle States Commission on Secondary Schools
- New England Commission of Higher Education

- Southern Association of Colleges and Schools Commission on Colleges
- Western Association of Schools and Colleges and WASC Senior College and University Commission
- North Central Association of Colleges and Schools Commission on Colleges
- Northwest Accreditation Commission and North West Commission on Colleges and Universities

To determine regional accreditation of an institution, please visit the Council for Higher Education Accreditation (CHEA) webpage www.chea.org.

Note: The University of Colorado Denver does not recognize accreditation from faith-related or career-related accrediting organizations.

Official Test Scores

The University of Colorado Denver requires official test scores for all applicants with less than 24 completed college credits. CU Denver accepts both the ACT and SAT.

Note: AP, IB, and CLEP scores can be submitted to the university for potential transfer credit but do not impact an admission decision.

Document Retention

All credentials submitted as application materials become the property of the University of Colorado Denver. Original documents are not returned or provided to students.

Non-degree

Applicants who do not plan to complete a University of Colorado Denver bachelor's degree, may be admitted as non-degree students. Applicants that have already earned a bachelor's degree, should apply as a non-degree graduate student. To change from non-degree to degree-seeking status, applicants need to apply as an undergraduate or graduate degree-seeking student and meet the admission requirements of the intended program of study.

Readmission

Academic Suspension/Probation Review (ASPR) for CU System Students

Transfer/readmit students with a cumulative CU GPA below 2.0 from any University of Colorado campus (Boulder, Colorado Springs or Denver) are subject to additional review by the school or college to which they are applying. Applicants must meet program requirements of the school or college to which they are applying. If requirements are not met, the applicant can be reviewed by the College of Liberal Arts and Sciences for general admission to CU Denver. Applicants should allow additional

processing time for this review and contact the school or college advising office for additional information.

Note: Each school and college may also have petition deadlines in place. Due to the time sensitive nature of this process, applicants should contact the school to college advising office as soon as possible.

Applicants who completed high school concurrent courses through any University of Colorado institution and have a GPA below 2.0 are not subject to additional review. However, applicants should be aware that concurrent coursework completed at a University of Colorado institution is counted toward their cumulative CU GPA.

Admission Decision Appeal

Applicants interested in appealing their admission decision should submit a letter to the Office of Undergraduate Admissions with additional information regarding circumstances that may have impeded their academic performance. Additionally, any updated test scores or coursework also should be submitted. Send letters to Admissions@ucdenver.edu and include the subject line "Admission Decision Appeal."

Revoking Admission

Applicants may be denied admission to the university or have their admission revoked if they knowingly:

- Falsify transcripts
- Falsify test scores
- Fail to indicate and provide credentials from all previously attended institutions
- Fail to disclose criminal history or suspension/expulsion information

Criminal History / Suspension

Applicants with criminal history and/or previous suspension/expulsion may undergo additional review by the Special Admissions Committee. The Special Admissions Committee meets regularly to review criminal history and suspension/expulsion application information for students who are academically admissible to the university.

Note: Disclosing criminal history or suspension/expulsion information is required but is not grounds for automatic denial of admission.

Appeal process

Applicants may appeal the Special Admissions Committee's decision when new information is available that was not included or available in the initial review of the application file. The information must be provided as part of the appeal. To request an appeal, submit a written letter to the Special Admissions Committee stating the grounds

for the appeal and a request to be reconsidered for admission. This letter must be addressed to:

Special Admissions Committee
University of Colorado Denver
Campus Box 167
P.O. Box 173364
Denver, CO 80217-3364

Applicants are notified in writing of the results of the appeal. Should the appeal be denied, applicants may request in writing the appeal be submitted for review to the Dean of Students. In this event, the Special Admissions Committee will inform the Dean of Students and will provide the Dean with the application file, including information relevant to the Special Admissions Committee's decision and the initial appeal. Applicants are notified in writing of the results of the Dean of Students' final admission decision.

Admissions Promise

The Admissions Promise is a partnership between the University of Colorado Denver and select Colorado Community Colleges to provide advising and ongoing support to applicants in pursuit of a four-year degree. Program participants are automatically accepted to the University of Colorado Denver as a junior upon completion of an approved Associate's Degree from a participating community college:

- Arapahoe Community College (ACC)
- Colorado Northwestern Community College (CNCC)
- Community College of Aurora (CCA)
- Community College of Denver (CCD)
- Front Range Community College (FRCC)
- Morgan Community College (MCC)
- Pikes Peak Community College (PPCC)
- Red Rocks Community College (RRCC)

Term Change Requests

Applicants or admitted students who wish to change the term indicated on their application must submit a term change request to the Office of Undergraduate Admissions prior to registering for and/or attending any classes at CU Denver. Admission can be deferred for up to one year (three semesters) from the initial term indicated on the application. For example, an admitted student that initially applied for Fall 2019 may defer until Fall 2020. A new application is not required for a change up to one year from the initial term indicated on the application.

Note: A maximum of three term change requests per application are honored.

Change of Major Requests

Applicants and admitted students who wish to change the major indicated on their application must submit one of the following requests:

Program/Plan Change

Prior to the first day of classes, the Office of Undergraduate Admissions completes program/plan change requests within or between the University of Colorado Denver colleges/schools.

Note: Admissibility into the desired major will be re-evaluated.

Intra University Transfer

After the first day of classes, students wishing to change from one CU Denver school or college to another must submit an Intra-University Transfer (IUT) form to their intended school.

Change of Major

After the first day of classes, students wishing to change their major within the same CU Denver school or college must submit a Change of Major request to their advisor.

Initial Residency

Initial residency classification for tuition purposes is determined by information submitted on the application for admission. Information regarding residency classification can be found at www.ucdenver.edu/residency.

Deferred Action for Childhood Arrivals (DACA) and Colorado ASSET

The University of Colorado Denver encourages and provides access for all qualified students. CU Denver accepts and welcomes students under both DACA and ASSET. Diversity is a guiding principle and core value of the university, and CU Denver is committed to maintaining an inclusive environment.

Active Military & Veteran Applicants

The University of Colorado Denver is a Military Friendly institution. Active military and veteran applicants are offered the following admission benefits:

- Waived application fee
- Waived SAT/ACT if high school graduation was more than five years prior and with the submission of a Joint Services Transcript (JST)

Note: For additional information on transfer credit and other university benefits, please contact Veteran and Military Student Services (VMSS) at vmss@ucdenver.edu.

BURSAR AND FINANCIAL AID & SCHOLARSHIPS INFORMATION

At CU Denver, we have a longstanding belief that finances should never stand in the way of motivated, talented individuals who want to better themselves and make a positive impact on the world around them. Through a tradition providing strong financial assistance and aid programs, we enforce this belief every day.

FAQ's

Not sure of the difference between student services offices? Here's a quick guide to finding what you need.

Admissions

Student Commons Building Suite 1007
303-315-2601

- Application: pick up, drop off, application fee payment, admission status
- Residency forms for students applying to CU Denver for the first time
- Information about establishing domicile for tuition classification
- General transfer credit information
- Information about CU Denver
- Scholarship guides
- Talk to an admissions counselor

Bursar

Bursar: Vacant (**Associate Bursar** - Eric Gray)
Office: Student Commons Building Suite 5123
Customer Service Phone Center: 303-315-1800
E-mail: bursar@ucdenver.edu
Website: www.ucdenver.edu/bursar

Front Counter: Student Commons Building 5123
Customer Service Manager: Debra Dorsey
Telephone: 303-315-1820

- Application Fees Payments
- College Opportunity Fund
- Departmental Deposit Transactions
- Tuition and Fee Payments
- Refunds and Direct Deposits
- Student Account Reconciliation
- Third-Party Billing

Financial Aid & Scholarships

Student Commons Building Suite 5105
303-315-1850

- How to apply for financial aid
- Free Application for Federal Student Aid (FAFSA) <https://fafsa.ed.gov/>
- Work-study and student employment opportunities
- Grant and student loan information
- Special circumstances, academic progress or financial hardship appeals
- Scholarships Information

Registrar

Student Commons Building Suite 5005
303-315-2600

- Academic Calendar
- Catalog
- Degree Audit
- Diplomas
- Enrollment Verification
- Grades and Academic Standing
- Name and Record Update Form
- Registration including Inter-Campus and Inter-Institutional
- Residency Petition Forms for Continuing Students
- Schedule Adjustment Forms
- Transfer Credit Evaluation
- Transcripts

Student Debt Management

Student Commons Building Suite 5123
Customer Service Phone Center: 303-315-1800

- Past-Due Tuition Collection
- Student Loan Processing

Student Commons Building

Physical Location:

1201 Larimer Street

Denver, CO 80204

The Student Commons Building is located on Auraria Campus at the corner of Larimer and Speer.

Mailing Address for Student Payments:

University of Colorado Denver | Anschutz Medical Campus

Bursar's Office

Mail Stop A098

13120 E. 19th Ave, Room 3120A

Aurora, CO 80045

FINANCIAL AID

Applying

The Financial Aid & Scholarships Office delivers more than \$128 million in financial aid awards to qualified students at the Denver Campus each year. Students will be considered for a financial aid award of need-based grants (federal, state, and institutional), Work-study (part-time employment), Federal Direct Loans and, if applicable, Federal Direct Parent PLUS Loans. To be considered for the best funding available, students should complete the FAFSA and submit requested documentation by the CU Denver priority deadline of April 1 each year.

To be considered for financial aid, students should complete the Free Application for Federal Student Aid (FAFSA) annually. The application becomes available October 1 of each year for the upcoming year's funding. Upon completing the application, students

should monitor their email provided on the FAFSA, University email, and UCDAccess portal To Do List for requests for follow up paperwork. Students may also obtain important information online at www.ucdenver.edu/finaid. All financial aid policies and procedures are subject to change due to revisions in federal and state laws, regulations, guidelines and applicable institution policies.

Awards

Students are informed by University email when awarded financial aid. The email notice advises students to review their award on the UCDAccess portal. Financial aid awards should be available for review approximately four to six weeks after the Financial Aid & Scholarships Office accepts and processes all required documents. The information provided will include types of awards and the amount of aid awarded.

Eligibility

Each student must meet the following eligibility criteria to be considered for financial aid:

1. Be a U.S. citizen or eligible noncitizen.
2. Have a valid social security number (exceptions for students from the Republic of the Marshall Islands, Federated States of Micronesia, or the Republic of Palau).
3. Be classified as degree-seeking in an eligible degree or certificate program.
4. Be enrolled at least half-time (6 credit hours) to be eligible for most types of financial aid, including the Direct Student Loan Programs.
5. Meet Satisfactory Academic Progress (SAP) standards at the end of each term.
6. Not be in default on any student loan or owe a refund on any educational grant.
7. Male applicants must be registered with the Selective Service.
8. Show proof of a high school diploma or recognized equivalent (GED or approved homeschooling).
9. Sign a statement on the FAFSA indicating that you will use federal student aid for educational purposes only.

Note: Students with intellectual disabilities who do not meet the eligibility requirements as outlined above may be able to obtain certain types of aid. To be eligible, you must be accepted for enrollment in a comprehensive transition and postsecondary program. For more information, go to StudentAid.gov/eligibility and select Students With Intellectual Disabilities.

Grants, Loans and Work-Study

Grants:

1. *Federal Pell Grant* - This is a need-based, federally funded grant. Pell Grants are awarded based off a need-based formula provided by the federal government. Award amounts vary depending on financial need and a student's enrollment status. Only undergraduate students seeking a first time bachelor's degree are eligible.
2. *Federal Supplemental Educational Opportunity Grant (SEOG)*- This is a need-based, federally funded grant awarded to students with exceptional financial need. Students must be eligible for the Federal Pell Grant to be considered for SEOG. Because the SEOG Grant has limited funding, the grant is awarded to the highest need students, and is not guaranteed to be awarded to all eligible students.
3. *Federal TEACH Grant* - This is a non-need based, federally funded grant available to students in specific programs who intend to teach in a public or private school that serves students from low-income families. Students may be considered for up to \$4000 per academic year in TEACH Grant.
4. *CU Denver University Need Grant*- This is a need-based, institutionally funded grant awarded to students who document financial need through the FAFSA. The grant is a limited fund award and awarded to students on a first come, first served basis.
5. *Colorado Student Grant* - This is a need-based, state funded grant available to eligible resident undergraduate students. The grant is awarded to students who document financial need through the FAFSA. The grant is a limited fund award and awarded on a first come, first served basis.

Loans:

1. *Federal Direct Subsidized Loan* - The Federal Direct Subsidized Loan is a need-based, federally funded loan. Interest on the Subsidized Loan is paid by the federal government during certain periods. Borrowers receive a six-month grace period before entering repayment. The grace period begins six-months after the student ceases to be enrolled at least half-time, discontinues their program of study or graduates.
2. *Federal Direct Unsubsidized Loan* - The Federal Direct Unsubsidized Loan is a non-need based, federally funded loan. Borrowers receive a six-month grace period before entering repayment. The grace period begins six-months after the student ceases to be enrolled at least half-time, discontinues their program of study or graduates.
3. *Federal Direct Parent PLUS Loan* - The Parent PLUS Loan is a federally funded loan, available to parents of dependent students. The Parent PLUS Loan is credit-based and begins to accrue interest from the date of disbursement. If a parent cannot secure a PLUS Loan due to credit, the undergraduate student may qualify for additional Unsubsidized Loan. Repayment on the PLUS loan begins almost immediately after disbursement, however a parent may make arrangements to have repayment deferred while the student is enrolled at least half-time. The interest on this loan, even while in deferment, will continue to capitalize on the principle amount.
4. *Federal Perkins Loan* - This is a need-based, federally funded loan. The Perkins Loan has a 5% fixed interest rate. No repayment of interest or principal is due until nine months after the student ceases to be enrolled at least half-time or graduates.

Work-Study:

1. *Federal Work-Study* - Work-study is a need-based, federally funded program that allows students to work part-time job (on-campus, off-campus or at nonprofit agencies) to help meet their educational costs.
2. *Colorado Work-Study* - Colorado Work-study is a state funded program similar to Federal Work-Study. It is available to resident undergraduate students pursuing their first bachelor's degree. Limited amounts of Colorado Work-study is available to students regardless of financial need.

Qualifying

Financial Need

Financial Aid eligibility is largely based on the concept of financial need. Financial need is calculated as Cost of Attendance (tuition, fees, books, and living expenses) minus the Expected Family Contribution or EFC (student/spouse contribution and parents' contribution for dependent students). A student's EFC is assigned directly from the information provided on the FAFSA application.

Cost of Attendance is the estimated annual cost to attend CU Denver, including tuition and fees, room, board, books and supplies, transportation and personal expenses. The Financial Aid & Scholarships Office determines COA based upon average tuition and fees charged and other items established by the Colorado Department of Higher Education. Current COA figures are available on our website at www.ucdenver.edu/finaid.

The EFC from the student/spouse and from the parents (if applicable) are calculated by a standardized formula that is determined by data provided on the FAFSA and is required by federal law. The formula considers income, savings and other assets, family size, number of children in postsecondary school and other factors and then assigns a student an EFC.

Financial Aid is intended to supplement and not replace financial contributions from the student and parents. If the EFC is equal to or greater than the COA, a student will not qualify for need-based financial aid, but can still receive non-need based financial aid such as Direct Unsubsidized Loans or Direct Parent PLUS Loans. Students may appeal for special consideration if they are experiencing unusual or extenuating circumstances that are negatively impacting their finances such as a job loss.

Determining Dependency Status

The federal government provides specific guidelines that define dependency status for federal financial aid. Dependency status is determined by a series of questions on the FAFSA. Students classified as dependent are required to provide student and parent household and financial information when applying for financial aid. If a student is classified as independent, the student's parental information is not considered when the calculation of the Expected Family Contribution is made. Students may review dependency questions by visiting <https://studentaid.ed.gov/sa/fafsa/filling-out/dependency>.

A dependency status may be appealed to the financial aid office if unusual circumstances exist. Contact the office for appeal guidelines.

Enrollment Status

Most undergraduate financial aid programs require at least half-time enrollment (6 credit hours per semester) to be eligible for awards. Higher or lower minimums may be required for specific individual awards (review your award notification for the exact number of credits required for aid eligibility).

Satisfactory Academic Progress (SAP)

To continue to be eligible for financial aid, students must meet Satisfactory Academic Progress. If a student is not meeting SAP standards, they may be ineligible for financial aid and scholarship. For more information, students should review the Satisfactory Academic Policy by visiting www.ucdenver.edu/finaid/sap.

A student may appeal financial aid suspension by submitting a SAP Appeal. The SAP appeal should document the extenuating circumstances that led to the student's suspension. All appeals should include third party supporting documentation.

Course Withdrawals and Repayments

Financial aid is disbursed based on the assumption a student will attend courses for the entire semester and earn passing grades. A student who withdraws or fails all courses and received financial aid must have a Return of Title IV (R2T4) calculation performed to determine the percentage of aid that was earned based on the amount of time the student attended their courses. Students are entitled to aid that was earned. The University will return any unearned aid to the appropriate Federal Title IV program, which may create a balance owed to the University.

The University will also determine the earned and unearned portions of any state or institutional aid. This calculation is separate from the R2T4 aid calculation.

If you withdraw on or before the University's census date, you will be required to return all state and/or institutional aid received for the term. The Bursar's Office will bill your account for the amount owed.

If you withdraw after the census date, you will be required to repay a portion of any state and institutional received for the term based on your withdrawal date.

CU Denver is required to verify a student began attendance in any course a student withdraws from or fails. If the Financial Aid & Scholarships Office receives notification that a student never began attendance.

Scholarships

The Financial Aid & Scholarships office awards over \$18 million dollars in scholarships annually. For a complete listing of the many scholarships offered at the Denver Campus, visit www.ucdenver.edu/scholarships.

TUITION AND FEES

All tuition and fee rates are established by the Board of Regents, the governing body of the University of Colorado, in accordance with legislation enacted annually by the Colorado General Assembly. The Regents set tuition rates and fees at a budget retreat each spring for the coming fall, spring and summer terms, but reserve the right to change rates at any time. Rates for the current year are available online to assist prospective students in anticipating costs. Please refer to the Web site at <http://ucdenver.edu/bursar> in July for new rates.

College Opportunity Fund (COF)

An act of the Colorado state legislature in May 2004 established a new way for the state to provide state tax dollar support for higher education at the undergraduate level. The College Opportunity Fund (COF), created by the Colorado Legislature, provides a stipend to eligible undergraduate students paying in-state tuition. The stipend pays a portion of your total in-state tuition for eligible undergraduate students who attend a public Colorado institution or a participating private institution. Eligible undergraduate students must be admitted and enrolled at a participating institution to use the stipend for eligible undergraduate classes.

The stipend is paid to the institution on a per-credit-hour basis, and the credit-hour amount is set annually by the General Assembly. Please check the official state College Opportunity Fund website for the current amount. For more information about COF and CU Denver please refer to our website.

Direct Deposit

Direct deposit is the standard method of issuing student account refunds to CU Denver students with credit balances. Students are strongly encouraged to sign up for direct deposit well in advance of any anticipated student account refunds, and may do so online via the UCDAccess portal - How to Select Direct Deposit for Refunds.

Students who do not sign up for direct deposit will receive a paper refund check through the mail. Refunds will only be issued via direct deposit or through the mail. **Students are not allowed to pick up their refund check from the Bursar's Office.**

Drop Charge

Beginning the second Tuesday of the fall and spring terms until census date, a \$100 drop transaction charge will be assessed each time a student drops a course. Please refer to the academic calendar for summer dates. This includes student initiated drops done in order to change sections within a course. Section changes done for an administrative purpose through the deans' offices will be exempted from drop charges. If a student withdraws, dropping all classes, a drop charge will be assessed for each course.

Past Due Tuition and Fees

Past due student accounts will be assessed a one-time per semester late payment charge and a monthly service charge for every month the balance remains unpaid. After the semester of the past due debt, student accounts are referred to Student Debt Management. An overdue student account may be referred to a third party collection agency and reported to one or more credit bureau reporting services; the student explicitly authorizes University of Colorado Denver to release personal and financial information under those circumstances. To the extent permitted by applicable law, the student agrees to reimburse the University of Colorado Denver the fees of any collection agency, which may be based on a percentage at a maximum of 40% of the debt, and all costs and expenses, including reasonable attorney's fees, the University may incur in such collection efforts. In addition, while the student maintains a past due balance with the University of Colorado Denver, a hold will be placed on the student record preventing any future registration and the release of official transcripts.

Pursuant to C.R.S. § 23-5-115, in the event of a default on an amount owed to University of Colorado Denver, University of Colorado Denver may certify to the Colorado Department of Revenue information regarding persons with past due accounts. The Colorado Department of Revenue may then disburse funds to University of Colorado Denver in satisfaction of that debt from tax refund amounts owed to the individual, if any.

See the Tuition and Fees Payment Disclosure Statement.

For more information, please see the Bursar's Administrative Withdrawal Policy.

Payment of Tuition and Fees

All tuition and fees, except the application fee, are due on the day indicated on your billing statement. Students have an option to choose a payment plan available through QuikPAY, our payment processor. Specific information on the payment plan can be located [here](#).

Students who register for courses are liable for payment of tuition and fees if they withdraw from school after census date. Refund policies for students who withdraw from the university both before and after census date are included in the academic calendar. A student with financial obligations to the university will not be permitted to register for any

subsequent term, to graduate, to be issued transcripts or to be listed among those receiving a degree or special certificate. The only exception to this regulation involves loans and other types of indebtedness that are due after graduation. Students may pay tuition and fees with personal checks, by credit card at the Bursar's Office, or through the UCDAccess portal. Any payment transaction that is returned by the bank will be assessed an additional charge.

The University of Colorado Denver is committed to providing students and their families a range of options for paying their educational expenses. The credit card payment method has become prohibitively expensive due to the fees charged by credit card companies to CU Denver for credit card transaction processing. This expense has been covered by University tuition revenues, and reduces the tuition dollars available for academic programs and services for all students. Therefore, a service fee of 2.75% of the payment amount will be assessed for all credit and debit card transactions.

Students who register in a non-degree status, and who later apply and are admitted to a degree status for that term, are responsible for the difference in tuition between the non-degree program and their applicable degree program and will be billed accordingly.

Undergraduate tuition for resident students is based on the total number of completed semester hours. The rate increases once a student has completed 60 hours.

Residency Classification for Tuition Purposes

Tuition classification is governed by Colorado statutes that apply to all state-funded institutions in Colorado. Institutions are bound by the provisions of this statute and are not free to make exceptions to the rules set forth.

Students are initially classified as in-state or out-of-state for tuition purposes at the time of application. The classification is based upon information furnished by the student and from other relevant sources. After the student's status is determined, it remains unchanged in the absence of satisfactory evidence to the contrary.

Once a student is classified as a nonresident for tuition purposes, the student must petition for a change in classification. Petitions must be submitted **NO LATER THAN THE MONDAY PRIOR TO THE FIRST OFFICIAL DAY OF CLASSES** of the term for which the student wishes to be classified as a resident. It is preferred that petitions be received 30 days prior to the beginning of the term. Late petitions will not be considered until the next semester. Specific information may be obtained from the Office of the Registrar.

The final decision regarding tuition status rests with the university. Questions regarding residence (tuition) status should be referred only to the tuition classification officer. Opinions of other persons are not official or binding upon the university. Additional information is available on our website.

Basic Requirements

The statute provides that an in-state student is one who has been a legal domiciliary of Colorado for one year or more immediately preceding the beginning of the term for

which the in-state classification is being sought. Persons over 23 years of age or who are emancipated establish their own legal domicile. Those who are under 23 years of age and are not emancipated assume the domicile of their parent or court-appointed legal guardian. A non-emancipated minor's parent/legal guardian must, therefore, have a legal domicile in Colorado for one year or more before the minor may be classified as an in-state student for tuition purposes.

Establishing Domicile

Domicile is established when one has a permanent place of habitation in Colorado and the intention of making Colorado one's true, fixed and permanent home and place of habitation. The tuition statute places the burden of establishing a Colorado domicile on the person seeking to establish the domicile. The question of intent is one of documentable fact and needs to be shown by substantial connections with the state sufficient to evidence such intent. Legal domicile in Colorado for tuition purposes begins the day after connections with Colorado are made sufficient to evidence one's intent. The most common ties with the state are (1) change of driver's license to Colorado, (2) change of automobile registration to Colorado, (3) Colorado voter registration, (4) permanent employment in Colorado and most important, (5) payment of state income taxes as a resident by one whose income is sufficient to be taxed. Caution: payment or filing of back taxes in no way serves to establish legal domicile retroactive to the time filed. In order to qualify for in-state tuition for a given term, the 12-month waiting period (which begins when the legal domicile is established) must be over by the first day of classes for the term in question. If one's 12-month waiting period expires during the semester, in-state tuition cannot be granted until the next semester.

Resident Tuition for Military-Connected Students

Military-connected students living in the state of Colorado may be able to receive in-state residency for tuition purposes at CU Denver and CU Anschutz as designated by Federal or State Law. Please review the information on the Veteran and Military Student Services website for more information.

Tuition Appeals

Students are responsible for abiding by the published deadlines. Tuition is not refundable when students drop or withdraw from courses after the published deadlines. If circumstances beyond the student's control have made the late drop or withdraw necessary, the student may file a tuition appeal.

Instructions and forms for submitting a tuition appeal are available on the Lynx Center website or in the Lynx Center.

RECORDS AND REGISTRATION INFORMATION

Records and Registration

CU Denver offers students a completely online system of planning their schedules and registering for classes. As a student, you are responsible for knowing the deadlines, rules, regulations, course loads, prerequisites and policies of the university, as well as those of the college or school in which you are enrolled, all of which is provided within this online catalog. Please refer to the Academic Policies section for more specific information related to records and registration.

Office of the Registrar

Associate Vice Chancellor for Student Enrollment Operations & Compliance and University Registrar: Carrie John

Office: Student Commons Building, Suite 5005

Telephone: 303-315-2600

Fax: 303-315-2550

E-mail: registrar@ucdenver.edu

Web site: www.ucdenver.edu/Registrar

Students should review the sections of this catalog that describe in detail the academic programs available at the Denver Campus.

The registrar's office will send an e-mail message to the student's university-assigned e-mail address, inviting the student to register, including registration information and a registration time assignment. Registration is by time assignment only. Students may register via the web on or after their assigned time.

FERPA

FERPA: FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

FERPA is a federal privacy law that protects students' educational records. Under this law, students have three primary rights:

- Inspect and review their education records.
- Seek to amend incorrect education records.
- Have some control over the disclosure of information from their education record.

FERPA directory information is information contained in a student's education record that generally would not be considered harmful or an invasion of privacy if disclosed. Under current CU Denver policy, the following information is designated as directory information:

- Student name. If provided, a preferred name will be used when there is not a documented business or legal reason to provide a student's primary name. Students may also select a diploma name for graduation and commencement materials.
- Hometown (city, state).
- Campus email address.*
- Dates of attendance.
- Previous educational institutions attended.
- School/college or division of enrollment.
- Majors, minors and field of study.
- Classification level (e.g., freshman, sophomore, graduate student).
- University-recognized honors and awards.
- Degree status (e.g. expected graduation date and/or conferral dates/terms).
- Enrollment status.
- Employment related to student status (e.g. teaching assistant, resident assistant or work-study) and dates for positions held.
- Participation in officially recognized activities/sports, including height and weight of athletes.
- Photos and videos taken or maintained by the university.

*Campus email addresses are only disclosed to requestors who agree not to use them for solicitation.

Although these items are designated by CU Denver as directory information, only a limited amount of this information is routinely disclosed by CU Denver university officials. The university retains the discretion to refuse disclosure of directory information if it believes such disclosure would be an infringement on student privacy rights.

Students may ask the University not to publicly disclose directory information. Be aware, however, if you are seeking employment, the Registrar's Office cannot release your enrollment, degree status or major to anyone unless you come to the Registrar's Office with a photo ID.

Forms to prevent disclosure of directory information can be obtained at the Registrar's Office, located in the Student Commons Building, or via the Registrar's website at www.ucdenver.edu/registrar.

Information that is never released without your consent includes grades, tuition/fees owed, financial aid, etc. If you would like to give permission to someone else to have access to that information, you can submit a Release of Confidential Information Form to the Office of the Registrar. This form also must be submitted in person.

More information about FERPA can be found in the University Catalog. If you have questions regarding your rights under FERPA, please contact the Office of the Registrar.

STUDENT SERVICES INFORMATION

CAMPUS LIFE

The University of Colorado Denver, Denver Campus is physically located on the 151-acre Auraria Campus, which is shared with two other institutions-Metropolitan State University of Denver and Community College of Denver. Because we share facilities, our students have access to the level of resources found at much larger public universities. Since fall of 2006, the university has also been able to offer student housing adjacent to this traditionally commuter campus. Details about the campus and Campus Village are explained in this chapter.

Auraria Campus

Since opening in 1976, Auraria has become the largest campus in Colorado, enrolling nearly 50,000 students-20 percent of all the students in public higher education in the state. This is the most efficiently utilized campus in the state. Classrooms on the Auraria Campus are used an average of 50+ hours per week. Classes are held from 8 a.m. to 10 p.m. Monday through Thursday and from 8 a.m. to 6 p.m. on Friday, Saturday and Sunday. Some courses and programs are offered cooperatively by the Auraria educational institutions. Those pertaining to CU Denver students are outlined in this catalog.

The Auraria Campus offers numerous amenities to students, faculty and staff, from the largest bookstore in the Rocky Mountain region to a state-of-the-art fitness facility. Details of these amenities are outlined in this chapter.

In addition to its proximity to the thriving business and industry of downtown Denver, the Auraria Campus has a distinct historic flavor. The Tivoli Student Union is housed in a renovated brewery originally built in the 1860s. Historic Ninth Street Park, St. Cajetan's Church/Performing Arts Center, St. Elizabeth's Church, the Emmanuel-Sherith Chapel/Synagogue/Art Gallery and the Golda Meir House Museum are also located on campus.

Auraria Higher Education Center

The Auraria Higher Education Center (AHEC) is the administrative body that coordinates the facilities, services and activities for the three educational institutions on campus. AHEC provides common services for the campus including: classroom scheduling, facilities services and construction, campus police, telecommunications infrastructure, student union, media services, book store, early learning center, parking and transportation, mail services and facilities master planning. Visit their website for additional information.

Campus Amenities

Tivoli Station

(Formerly Auraria Campus Bookstore)

Location: Tivoli Student Union, suites 105 and 205

Phone number: 303-556-4286

Website: www.tivolystation.com **Facebook:** facebook.com/TivoliStation

We've got you covered at Tivoli Station, your best resource for **technology, CU Denver spirit gear, and cost-saving options for textbooks**. We offer both convenience and value. Look to us for easy one-stop shopping and a variety of programs designed to benefit students.

- **Tech Station**

As an **Apple Authorized Campus Store** and **Apple Authorized Service Provider**, we offer student discounts and in-store tech support. We also carry **Dell** computers, discounted HP technology, calculators, flash drives, headphones, and more.

- **Book Station**

Thousands of textbook titles are available to rent (save up to 50%) or **buy new or used**. At the end of each semester, sell your used books for cash with the **Textbook Buyback Program**, a service we offer to help offset student expenses.

You can also visit ahec.verbacompare.com to compare textbook prices from the web, giving you options to find the best value available.

- **Lynx Station**

Show your school spirit with **CU Denver clothing and gear**, such as shirts, hats, pants, lanyards, hoodies, mugs, and water bottles.

- **Supply Station**

We offer a variety of course supplies, including general school supplies and art, culinary, and science lab materials.

- **Reading Station**

In the general merchandise area, we provide study aids, reference materials, gift items, and discounted New York Times Bestsellers.

- **Charging Station**

Charge your device for free using one of our phone ports or outlets.

- **Snack Station**

Grab a snack while you are waiting for your device to charge, or take it on the go. We have pre-wrapped sandwiches, drinks, yogurt, chips, and candy.

- **Campus Commitment**

We are committed to the campus. Revenue from the bookstore helps fund campus programs and keeps your student bond fee down. We are also one of the largest student employers on campus.

Auraria Campus Event Services

Location: 900 Auraria Parkway, Suite 325 **Phone:** 303-556-2755

Email: acesmaindesk@ahec.edu **Website:** www.ahec.edu/eventservices

Auraria Campus Event Services (ACES) manages all non-academic events that take place on the Auraria Campus. From a simple meeting to an impactful campus event like Spring Fling or Fall Fest, our team is committed to providing quality service and producing successful events.

A majority of the event spaces on campus are located in the Tivoli Student Union, but other event venues are also available in St. Cajetan's Event Center, the PE/Event Center, and several outdoor event spaces including the Tivoli Quad. Student groups can contact us for assistance with locating and booking a space and coordinating support services.

Auraria Early Learning Center (Child Care Center)

Location: 950 9th Street Park **Phone Number:** 303-556-3188

The Auraria Early Learning Center (AELC) provides high quality early childhood care and educational programs to children 12 months and walking through 5 years old. The programs at AELC are utilized by the children of college students, as well as children of faculty and staff on campus, and community members. There are 300 children in 12 classrooms and the center is open year round (except for holidays) from 7 AM to 6 PM, Monday through Friday. The Center also offers a fully accredited kindergarten program and a summer camp program. AELC has earned a 4 Star - or high quality - Qualistar rating, as ranked by Qualistar Early Learning.

Auraria Event Center/Student Recreation Center

Location: PE Building/Event Center

Phone: 303-556-3210 (recreation), 303-352-4371 (fitness)

Website: <http://www.msudenver.edu/campusrec>

The Auraria Campus PE/Event Center is a 2,800-seat facility for team and individual sport activities, academic programs, events and conferences. Funds from the Student Recreation Fee support Campus Recreation at Auraria (CRA). At CRA, our purpose is to foster individual and community well-being through the power of engagement, leadership, partnership and recreation. CRA provides a wide range of affordable, high

quality, and inclusive recreational and wellness opportunities designed to support personal, academic, community and institutional success of Auraria Campus students, faculty, staff, alumni and the community at-large. CRA consists of Fitness and Wellness, Outdoor Adventure and Leadership, Recreational Sports, Educations/Certification, Member Services, Employment Opportunities, Partnerships, and Community Outreach.

Auraria Library

Phone Number: 303-556-2740

Website: <http://library.auraria.edu/services/askus>

The Auraria Library connects users with ideas through technology-enabled information discovery and delivery on an “anytime, anyplace” basis. The Library’s collections of learning materials, resources, and research services support the information, research, and curriculum needs of the Auraria Campus. Whether you are looking for a quiet place to read and reflect, a place to share a cup of coffee while working with classmates on a group project, a source of authoritative academic information, or a computer-enabled collaborative study room, the Library will meet your needs. Assistance from Library staff is available via one-on-one meetings, by phone, text, or chat on our website (library.auraria.edu/services/researchhelp).

Auraria Media Center and Classroom Support

Location: 1100 Lawrence Street (East side of the Auraria Library), 015

Phone Number: 303-556-2426 **Website:** <http://mediacenter.ahec.edu>

The Auraria Media Center and Classroom Support Services offers a full range of media services and classroom support:

- distance learning technologies including video conferencing, webinars, audio conferencing, video over IP and ISDN and videotaping of course delivery
- circulation of a wide range of audio, video and data (AVD) presentation equipment for one-time use
- long-term classroom equipment check-out
- production of content on digital tape, DVD, CD and videotape by an award-winning staff using state-of-the-art digital editing, graphics and animation systems
- quantity duplication of DVD, CD, audio and videotape media
- equipment maintenance and repair
- equipment/systems consultation and installation

The Auraria Media Center’s 34-channel closed-circuit campus cable system can be used in the classroom to broadcast channels such as CNN, MSNBC, History, Discovery, A&E, PBS, CSPAN, NASA and local television networks. One channel is dedicated to and managed by each institution for distribution of programming of their choice.

Auraria Media Center staff are available to train faculty in the use of equipment in “smart” classrooms on campus and offer consulting services to faculty and other clients

in such areas as media design and production, effective use of media types and effective use of distance learning technologies, effective use of those technologies and equipment selection to best meet instructional needs.

Auraria Media Center and Classroom Support Services will handle all of your classroom needs regarding furniture, projector screens, whiteboards, smart classroom equipment and ADA furniture placement.

Emmanuel Gallery

Location: 10th and Lawrence Street Pedestrian Mall

Phone Number: 303-315-7431

Tri-institutional campus on Auraria Campus for over 35 years. Historical landmark who received the Mayor's Art for Excellence in 2012 featuring national, international artists, designers and architects as well as featuring student and faculty shows for each school on campus. Stop in for a relaxing break

Health Center at Auraria

Location: Plaza Building 150 **Phone Number:** 303-556-2525

24 Hour Mental Health Crisis Line: 303-352-4455

Website: www.healthcenter1.com

Medical Care

The Health Center at Auraria provides primary medical care, disease prevention, health education, wellness promotion, and various specialty services to all registered MSU Denver, CCD and CU Denver students.

The Health Center is open Monday through Thursday from 8 a.m. to 5 p.m., and Friday from 8 a.m. to 3 p.m.

Eligibility

All current Students, faculty and staff on the Auraria Campus are eligible for medical services. Be prepared to show a Student I.D. card or a photo ID each time you check in. Payment Options

Payment

Patients who participate or are enrolled in the MSU Denver or CU Denver Student Health Insurance will have their covered charges submitted directly to the insurance carriers. Patients are required to pay at the time of service for any plan exclusions and co-payments.

Health Center @ Auraria accepts most major health insurance plans because we understand the importance of health insurance for the individuals we serve. As insurance benefits shift and change, it is important to know your plan and what is covered before your appointment with your provider.

In an effort to assist our patients, Health Center @ Auraria has listed below the insurance plans we accept. We encourage you to access your individual policy, and identify what your specific plan will cover. Please note that, while many wellness and preventative services may now be covered 100% by your plan, specific benefits will vary according to your policy benefits.

It is imperative that patients review and understand their financial responsibility and portion of the services that are provided to them. Please contact your insurance carrier for specific details of your plan.

We currently accept most insurance plans with the following carriers:

Aetna: <https://www.aetna.com>

Anthem Blue Cross/Blue Shield: <https://www.anthem.com>

Cigna: <https://my.cigna.com>

Cofinity: (refer to the link on the back of your insurance card)

Humana: <https://www.humana.com>

Multi-plan: (refer to the link on the back of your insurance card)

Rocky Mountain Health Plan: <http://www.rmhp.org>

TriCare: <https://tricare.mil/>

United HealthCare: <https://www.myuhc.com>

Staff

The Health Center is staffed by Physicians, Physician Assistants, Nurse Practitioners, Radiologic Technologists, Medical Assistants, and Allied Health Professionals. Psychiatrists and Gynecologists provide specialty medical care.

Appointments

To be respectful of your time it is suggested that you schedule an appointment in advance by calling (303) 556-2525. Walk-in Care is also available on a “first come / first served” basis. Patients are encouraged to arrive early to increase the likelihood of Walk-in availability. Patients are scheduled for a same day or a future appointment according to the severity of their medical need.

Services

The Health Center at Auraria can treat the majority of your health concerns on-site, including illnesses, injuries and physicals. See the list below for other on-site services.

- Illness Treatment

- First Aid
- Urgent Care
- Physical Examinations
- Lab Testing
- X-ray
- Medications
- Skin and Mole Evaluations
- Immunizations
- Blood Pressure Check
- Annual Gynecologic Exams
- Safer Sex Instruction
- Sexually Transmitted Disease Screening and Treatment
- Pregnancy Tests
- Birth Control Information and Supplies
- Colposcopy/Cryotherapy
- Referral to On-Site Physician Specialists
- Psychiatrist Consultations (referral needed)
- Cholesterol Screening/Fitness Analysis
- Minor Surgery/Suturing/Biopsies

Free clinical Services

The Health Center at Auraria offers a variety of services at no charge regardless of insurance coverage. These exclusive free services are available to all MSU Denver, CU Denver, CCD and AHEC students, faculty and staff.

Free services include:

- Flu Vaccination
- HIV Testing, including Rapid HIV Testing
- Nutritional Counseling
- Prescriptive Exercise Rehabilitation
- Tobacco Cessation - includes free medication if indicated

King Academic and Performing Arts Center

Location: 855 Lawrence Way **Phone Number:** 303-556-2179

Website: www.ahec.edu/kingcenter

The King Center houses six performing spaces: three permanently assigned production studios, a 197-seat recital hall; 520-seat concert hall; and the 270 seat Eugenia Rawls Courtyard Theatre. There are dressing rooms, green room, recording studio, lighting lab, music electronics lab, classroom space, box office, scene shop, paint shop and costume shop. All spaces are fully equipped with state-of-the-art equipment and a variety of spaces for exhibiting fine art. The entire facility has more than 180,000 square

feet dedicated to the education of the student and development of the student who wishes to study performance/arts. The center can support many forms of entertainment, anywhere from legit theatre to large choral ensembles and other forms of performances.

You can usually find staff in the offices between 9:00am - 4:30p. But we have employees on site at any given time and day of the week depending on the three institutions performance schedules.

Tivoli Student Union

Location: 900 Auraria Parkway #325

Phone Number: 303-556-6330

Website: www.ahec.edu/tivoli

The Tivoli Student Union, managed by the Auraria Higher Education Center's Student Facilities Services department, provides a wide variety of amenities for the campus community. As the hub of the campus, the Tivoli Student Union houses the campus bookstore, called Tivoli Station, full-service restaurants and a food court, conference and meeting spaces, and facilities for recreational, social, and organized co-curricular student activities. The following services are located in the Tivoli Student Union:

- Tivoli Station (bookstore)
- Commuter Resource Center (ID Center)
- Sigi's Pool Hall
- Ricoh Copy Center
- Credit Union of Denver
- Public Service Credit Union
- i-lov-iT Market
- Free mobile charging stations (at Tivoli Station)
- Study lounges
- Restaurants, a coffee shop, and a food court

Club Hub

Location: 900 Auraria Parkway, Suite 346 **Phone Number:** 303-556-8094

Website: www.ahec.edu/club-hub

The Club Hub provides free workspace for over 60 student clubs, as well as group meeting spaces and lounge areas. We support clubs in pursuing their goals and objectives, and also provide the opportunity to interact with other organizations on campus. Clubs must receive official recognition from their institution for Club Hub privileges. Our services include computer workstations with Internet access and printers, fax machines, mailboxes, and office supplies.

ID CENTER (COMMUTER RESOURCE CENTER)

Location: 900 Auraria Parkway, Suite 269 **Phone Number:** 303-556-8385

Website: www.ahec.edu/id-center

The Commuter Resource Center (ID Center) provides information about programs and services available to the campus community related to commuting to campus, student IDs, the RTD CollegePass, off-campus housing, getting around campus, and much

more. Visit the ID Center to get your University of Colorado Denver student ID card and your RTD CollegePass smart card for unlimited rides on the RTD bus and light rail system.

SIGI'S POOL HALL

Location: 900 Auraria Parkway, Suite 145 **Phone Number:** 303-556-3645

Website: www.ahec.edu/sigis

Sigi's Pool Hall is a rec room for students to relax and meet with friends between classes. In addition to a lounge area with big screen TVs, lunch tables, and use of a microwave, we have pool, ping-pong, poker, and a variety of Xbox or Wii video games. Join us for monthly tournaments for the chance to win prizes! Sigi's is also home to the MSU Denver Food Bank.

Campus Safety

Auraria Police Department

Location: 1201 5th Street, Denver, CO 80217

Police Dispatch Number: 303-556-3271

Located in the Administration Building on the Auraria Campus

Campus Police Mission

The Auraria Campus Police Department is committed to enhancing the quality of life on the Auraria Campus by protecting life and property, and providing a wide range of services to prevent crime and resolve problems.

Services (*The Auraria Campus Police Department provides campus services 24 hours a day, 7 days a week.*)

- Crime prevention programs
- Informational services
- Police support to campus staff
- Night escorts to your vehicle
- Security patrols, bicycle patrols, foot patrols
- Vehicle unlocks
- Emergency response (Emergency Phone
Map: <http://www.ahec.edu/campusmaps/index.htm>)
- Timely Notification Bulletin for the Auraria Campus
- Immediate notice of crimes affecting the Auraria Campus.

The Auraria Handivan Service is offered Monday through Thursday 7:00 am-10:00 pm and on Friday's from 7:00 am-6:00 pm. Also, take advantage of Auraria's Nightrider escort service. It will take you to any building or parking lot on campus Monday through Thursday, Sundown to 10:00pm. The wait time is usually no longer than 10 minutes. To arrange for the Nightrider, contact the Auraria Parking Office at (303) 556-2001. If the Nightrider is not running, contact the Auraria Campus Police Department at (303) 556-5000 to arrange for an escort to your car.

The Emergency Notification System (ENS) tool provided by the University of Colorado Denver (CU Denver) for students, faculty and staff provides timely life-safety alerts. You

are able to receive these alerts via text, voice and email messaging. Your CU Denver email address has already been added to this system. If you would receive emergency alerts on your cell phone, make sure that you enter your cell phone number into the PROFILE section of your student or employee portal at <https://my.cu.edu/>. **Identify the phone type as a “Cellular” device and check it as the “Preferred” number.** If you have questions, please contact the CU Denver Emergency Manager, Essi Ellis, at Essi.Ellis@ucdenver.edu or by phone at 303-724-1031.

The Office of Commuter Services

Location: Tivoli Student Union, 227

Phone: 303-556-2444 **Email:** CommuterServices@ucdenver.edu

Off-Campus Housing Database Website: offcampushousing.ucdenver.edu

The Office of Commuter Services supports students with commuting resources and an off-campus housing database that can be accessed through the link listed above. Any on-campus housing questions should be directed to Campus Village at 303-573-5272 or Housing@ucdenver.edu.

Student Right To Know and Disclosure Information

Crime Statistics

In compliance with the federal Student Right-to-Know and Campus Security Act, the Auraria Campus publishes crime statistics on campus in the Auraria Campus Clery Report. In an emergency, please contact Auraria Campus Police at 303-556-5000 or dial 911 from a campus phone.

Persistence and Completion Data

Section 103 of Title 1 of Public Law 101-542 as amended by Public Law 102-26 (the Federal “Student Right-to-Know” Act) requires that institutions produce and make available to current and prospective students the completion rate of first-time, full-time, degree-seeking undergraduate students entering the institution. Six years after entering, 40 percent of the fall 2008 cohort graduated.

CU Denver’s one-year fall-to-fall retention rate is 75 percent for the fall 2012 cohort. That is, of the first-time, full-time, degree-seeking undergraduate students who entered the university in fall 2012, 75 percent were enrolled at the Denver Campus in fall 2013 at the end of the term.

Voluntary System of Accountability (VSA) data indicate that the 2008 Denver Campus first-time, full-time, degree-seeking freshman cohort has an overall 4-year success rate

of more than 80%, with 21% retained at another institution, 40% retained at CU Denver, nearly 15% graduated from CU Denver, and another 5.6% received degrees elsewhere.

Riot Law (Student Riot Bill)

Student enrollment-prohibition-public peace and order convictions: 1) No person who is convicted of a riot offense shall be enrolled in a state-supported institution of higher education for a period of 12 months following the date of conviction; 2) a student who is enrolled in a state-supported institution of higher education and who is convicted of a riot offense shall be immediately suspended from the institution upon the institution's notification of such conviction for a period of 12 months following the date of conviction, except that if a student has been suspended prior to the date of conviction by the state-supported institution of higher education for the same riot activity, the twelve month suspension shall run from the start of the suspension imposed by the institution; 3) nothing in this section shall be construed to prohibit a state-supported institution of higher education from implementing its own policies and procedures or disciplinary actions in addition to the suspension under (2) of this section, regarding students involved in riot.

Sex Offender Information (Campus Sex Crimes Prevention Act)

Sex offenders are required to list the locations of all institutions of post-secondary education where they volunteer or are enrolled or employed. The Colorado Bureau of Investigation maintains a database identifying all such persons and makes it available to all law enforcement agencies in which jurisdiction the institution of postsecondary education is located. The campus community can obtain this information by contacting the Auraria Police Department at 303-556-5000.

Voter Registration (National Voter Registration Act)

In compliance with the National Voter Registration Act, the state of Colorado voter registration application form and information is available online at www.sos.state.co.us/pubs/elections/ or www.fec.gov/votregis/vr.shtml.

STUDENT SERVICES INFORMATION

STUDENT SERVICES

Center for Undergraduate Exploration and Advising

Location: Student Commons Building, Suite 1113

Phone Number: 303-315-1940

Website: <http://ucdenver.edu/life/services/asac/Pages/default.aspx>

Email: cuea@ucdenver.edu

The Center for Undergraduate Exploration & Advising is a resource for students still exploring major and career pathways at CU Denver. We welcome students who are still deciding on a major, planning to change their major, and/or looking to supplement their current major with a minor or certificate program. In addition to being a general resource for exploratory students, the CUE&A Success Advisors serve as primary Academic Advisors for:

- College of Liberal Arts & Sciences (CLAS) Undeclared Students
- First-year Students (under 30 credits) in the College of Arts & Media (CAM)
- Pre-Architecture Students
- Undergraduate Non-degree and Concurrent Enrollment Students

We also invite prospective students needing a general overview of the many academic and major opportunities at CU Denver to meet with a CUE&A Success Advisor.

Campus Assessment, Response and Evaluation (CARE) Team

Location: Tivoli Student Union, Suite 227

Phone Number: 303-315-7306

Website: <http://www.ucdenver.edu/life/services/CARE/Pages/default.aspx> **Email:** shareaconcern@ucdenver.edu

Submit a concern

at: https://cm.maxient.com/reportingform.php?UnivofColoradoDenver&layout_id=1

The Campus Assessment, Response & Evaluation (CARE) Team is committed to improving campus safety and student success at both the CU Denver and CU Anschutz Medical Campus by proactively and collaboratively managing situations and individuals that pose, or may reasonably pose, a threat to the safety and well-being of the campus community. The team coordinates with students, faculty, and staff as well as concerned others, using objective and thoughtful approaches to identifying, assessing, and intervening with individuals of concern.

The Career Center

Location: Tivoli Student Union, LynxConnect, Suite 339

Phone Number: 303-315-4000

Website: <https://www1.ucdenver.edu/services/career-center>

Email: CareerCenter@cdenver.edu

The Career Center offers a full array of services that prepare students for their transition from college to career. Students are encouraged to participate in career-related events and services as early as their freshman year. This includes obtaining help in choosing a major, deciding on career options, and mapping out experiences necessary to be successful upon graduation. The Career Center also supports students

in refining job search skills like resume & cover letter writing, interview preparation, and targeting employers through our internship and job board called Handshake.

The Career Center's mission is to provide personal and meaningful interactions with students, alumni and employers in order to prepare them for the world of work.

CLAS Academic Advising Office

Location: North Classroom, Room 1030

Phone Number: 303-315-7100

Website: <https://clas.ucdenver.edu/advising/>

Email: CLAS_advising@ucdenver.edu

Hours of Operation: 8:00 a.m.-5:00 p.m.-Mon., Thu. & Fri., 8:00 a.m -7:00 p.m. Tues. & Wed.

CLAS Academic Advising Mission

We create and sustain an inclusive and supportive learning environment where students are engaged to author meaningful academic and professional plans through collaborative advising relationships that foster student success and degree completion.

CLAS Advising System

Academic advising in the College of Liberal Arts and Sciences (CLAS) is a partnership between students, faculty, and staff. CLAS utilizes a shared advising system, which means all undergraduate students in a CLAS major will have at least two advisors with whom they should work throughout their time at CU Denver: a CLAS Academic Advisor and a CLAS Faculty Advisor.

CLAS Academic Advisors:

- Help students learn to navigate CU Denver systems
- Explain and help students track their progress with CU Denver Core Curriculum, CLAS, and general graduation requirements
- Explain university and college policies
- Help students make informed decisions about course registration and academic plans
- Evaluate the application of transfer credits toward general education requirements
- Connect students to the campus and campus resources
- Determine students' graduation eligibility and facilitate the graduation process
- Support student through degree completion and empower them to achieve their academic goals.

Students can identify their assigned CLAS Advisor in the "Advisor" box in their Student Center on UCD Access.

CLAS Faculty Advisors:

- Explain major/minor requirements
- Evaluate transfer credits and their applicability to major/minor requirements

- Help students track their major/minor requirements
- Determine students' graduation eligibility
- Discuss career and graduate school opportunities

An updated list of faculty advisors is available in the CLAS Advising Office and on the CLAS Advising website under the About Us page and Faculty Advisors link.

CLAS Students:

- Meet regularly with assigned CLAS academic and faculty advisor(s)
- Learn CU Denver, CLAS, major/minor, and general graduation requirements
- Use available resources (degree audit, transfer credit reports, transcript, CLAS handouts, etc.) to track academic progress and maintain individual records of progress
- Set academic goals with the assistance of advisors
- Know university and college academic policies and deadlines
- Choose and enroll in courses
- Understand the importance of and practice professionalism and ethical behavior
- Use campus resources and ask for help

CLAS Advising Partners

In addition to working with CLAS Academic and Faculty advisors, students with health careers interests will work with a Health Professions Advisor to design a plan to continue on to a professional program for the health career of their choice. Health Professions Advising is located in North Classroom Room 3103, 303-315-1940. Web site: <https://clas.ucdenver.edu/health-professions-programs/advising>

Students who are still deciding their college major (Liberal Arts- Undeclared), along with pre-architecture are served through the Center for Undergraduate Exploration and Advising (CUE&A) located within the Student Commons Building (SCB) Room 1113, 303-315-1940. E-mail: CUEA@ucdenver.edu. Website: www.ucdenver.edu/cuea

Club Sports

Location: Lola & Rob Salazar Student Wellness Center

Phone Number: 303-315-9355

Web: <http://www.ucdenver.edu/clubsports>

Email: lynxwellness@ucdenver.edu

Club Sports is a program designed to provide students with the opportunity to engage in team sports in a friendly and competitive environment. The purpose of the program is to unite individuals with a shared interest in sports, develop lasting friendships, and build community among students across campus, all while increasing their overall well-being through physical activity. Any student who is enrolled in at least 1 credit hour and is paying the Club Sports fee may participate in Club Sports. Students can pick from a variety of sports to participate in and have the chance to serve in a leadership position

during their time. All Club Sports serve under the Wellness and Recreation Services department and indoor practice spaces are housed in the Lola and Rob Salazar Student Wellness Center. Club Sports policies and guidelines can be found in the Club Sports Manual.

College of Arts & Media Advising and Student Services

Location: Arts Building, Suite 177

Phone Number: 303-315-7400

Website: <https://artsandmedia.ucdenver.edu/>

Email: CAMadvising@ucdenver.edu

Hours of Operation: M-F 8:00 a.m.-5:00 p.m

Advising and Student Services at the College of Arts & Media (CAM) provides current and prospective CAM students with academic information about the college and university. CAM advisors assist students with tracking their academic progress, discussing remaining requirements and course sequencing and by offering appropriate referrals to faculty and other university services (e.g., career resources). Advisors also coordinate academic email notifications to students (e.g., add/drop deadlines and applying to graduate), as well as maintaining advising-related materials. While students are encouraged to make use of the service of academic advising throughout their college career, they are ultimately responsible for their own academic progress.

Academic advising may be mandated or suggested prior to registration depending on the student's status. Students can view registration holds in the Student Center of their UCDAccess account.

First-Year and Transfer Students

First-year students with fewer than 30 credit hours are required to attend New Student Orientation and meet with an advisor before registering for their first semester, and then later are required to meet with an advisor in the Center for Undergraduate Exploration and Advising (CUE&A) before registering for their second semester. Transfer students with 30 or more credit hours are required to meet with a CAM academic advisor and may also be required to complete an orientation prior to registering for their first semester of courses.

Continuing Students

Students with declared majors who have completed at least 30 semester hours are assigned to CAM Advising and Student Services. Students are encouraged to meet with an advisor at least once per year and to bring a sample schedule to each advising appointment.

Students approaching their junior and senior years are encouraged to meet with a faculty mentor in their area of study or academic advisor to discuss internships,

career/employment opportunities, graduate school, professional organizations and other post-graduation information. Additional resources exist in CAM and across campus to support career exploration. Students may contact CAM Advising and Student Services for details.

Community Engagement

Location: Tivoli Student Union Suite 303

Phone Number: 303-315-7288

Website: <http://www.ucdenver.edu/life/services/studentlife/Pages/StudentLife.aspx>

Email: Volunteer@ucdenver.edu

In college, getting involved with your community can lead to future job opportunities, discovering your passion, and making friendships that last a lifetime! Through the Office of Student Life, we offer a variety programs to help students get connected to the community. The Alternative Break program allows students to travel to various cities (and countries) to volunteer over spring, winter and summer breaks. Lynx to College Now! employs CU Denver students to work as mentors at Oakland Elementary School. Stop and Serve tables let students make a difference without even leaving campus, and Day of Service events are a great way to make friends while serving local nonprofits. Follow Community Engagement on OrgSync to hear about upcoming events, and be sure to stop by the Office of Student Life (Tivoli 303) to learn more about volunteerism and service.

Office of Student Conduct and Community Standards

Location: Tivoli Student Union 309

Phone Number: 303-315-7311

Website: <http://www.ucdenver.edu/life/services/standards/Pages/default.aspx>

Email: Please refer to website for more information

We serve the university community by meeting the developmental and educational needs of students related to community expectations, civility and respect for self and others. We support community members with conflict management and resolution, and respond to inappropriate and threatening behaviors. We provide student-centered educational services, which promote personal development and individual responsibility. We strive to create a dynamic, open and just environment where civility, cultural competence and learning are expected and celebrated.

CU Denver Live!

Location: Various Locations: refer to website for more information

Phone Number: 303-315-5483

Website: <https://cudenverlive.com/>

Email: live@ucdenver.edu

CU Denver Live! is a student run arts programming committee that works as a sub-committee under The Events & Partnerships. *CU Denver Live!* strives to program arts events that spark the interests of numerous types of students while maintaining a multicultural and educational mindset. Additionally the team hopes to create a fun and inclusive atmosphere that promotes school pride and a sense of community at CU Denver.

Disability Resources and Services Office

Location: Student Commons Building, Room 2116

Phone Number: 303-315-3510

Website: <http://www.ucdenver.edu/disabilityresources>

Email: disabilityresources@ucdenver.edu

The Office of Disability Resources and Services (DRS) is committed to providing equal opportunities and fostering the personal growth and development of students with disabilities. The DRS staff strives to meet the needs of a large and diverse community of students with disabilities. We are available to provide assistance and to arrange for reasonable accommodations that will address specific educational needs. Accommodations may include, but are not limited to, the following:

- Priority registration for classes
- Assistance in identifying volunteer note takers
- Alternative testing for assessment tests and classroom examinations
- Oral/sign language interpreters
- Real-time captioning
- Textbooks in alternate formats (audio taped, Braille, enlarged, scanned)

Center for Identity & Inclusion

Location: Student Commons Building, Room 2007

Phone Number: 303-315-1880

Website: <http://www.ucdenver.edu/about/departments/odi/CII/Pages/default.aspx>

Email Address: cii@ucdenver.edu

Office Hours: 8:00 am - 5:00 pm

The Center for Identity & Inclusion (CII) provides services: a) to support underrepresented students and b) to promote a diverse and inclusive campus for all students, faculty, and staff.

American Indian Student Services

Location: Student Commons Building, Room 2007C

Phone Number: 303-315-1882 grace.tyon@ucdenver.edu

Asian American Student Services

Location: Student Commons Building, Room 2007E

Phone Number: 303-315-1879 soyon.bueno@ucdenver.edu

Black Student services

Location: Student Commons Building, Room 2007F

Phone Number: 303-315-1881 omar.montgomery@ucdenver.edu

Latinx Student Services

Location: Student Commons Building, Room 2007H

Phone Number: 303-315-1878 abenicio.rael@ucdenver.edu

ESL Academy

Location: 1100 Lawrence St #014

Phone: 303-315-2383

Website: <http://esl.ucdenver.edu>

Email: esl@ucdenver.edu

The University of Colorado Denver's English as a Second Language (ESL) Academy offers a rich diversity of academic, social, and cultural learning opportunities. The Academy offers high-quality, year-round ESL instruction specifically designed for university preparation. The curriculum helps students improve their language skills through a rigorous program of study, campus involvement, and cultural and educational activities.

Our program offers the following distinctive advantages when compared against other programs:

The curriculum is designed especially for university-bound students. In addition to mastering academic English, students will learn how to succeed academically at the University of Colorado Denver.

Students in the ESL Academy will be considered University of Colorado Denver students. They will be on the university campus from day one of our program and will be eligible to live in university housing, though there will be limited availability for students who join our program mid-term.

Students will have access to all of the activities and resources that the university has to offer, not to mention the spectacular outdoors and urban life in Denver and Colorado.

Students may be allowed to take one or two regular academic courses that count towards fulfillment of CU Denver degree requirements once they achieve a measure of English proficiency.

When a student completes the ESL Academy successfully, s/he will automatically fulfill

the University of Colorado Denver's English language proficiency requirement and will be eligible for full admission.

Students will be issued a Form I-20 from the University of Colorado Denver for a seamless immigration experience and will not have to transfer their immigration status to begin their degree program upon complete completion of the ESL Academy.

Students will benefit from a seamless transition to university degree programs after they successfully complete the ESL Academy, thus maximizing the prospects of their success.

For full details, visit the ESL Academy online at esl.ucdenver.edu. Here, students can get information about:

- The online application
- Program information
- Tuition and Fees
- International Student Services

If you have additional questions you may send an email to esl@ucdenver.edu or call 303-315-2383. Located at 1100 Lawrence Street #014 Denver, CO 80204

Experiential Learning Center

Location: Tivoli Student Union, LynxConnect #439

Phone Number: 303-315-7258

Website: <http://www.ucdenver.edu/life/services/ExperientialLearning/Pages/default.aspx>

Email: Experiential.LearningCenter@ucdenver.edu

Experiential learning includes a variety of activities with one common goal-to immerse you in hands-on learning outside the classroom where your experience is at the heart of the learning process. The Experiential Learning Center (ELC) serves students, faculty, and employers as a resource for experiential learning opportunities. We offer information, resources and support in the development and coordination of academic and non-academic internship experiences, professional skill development opportunities, and undergraduate research experiences.

LGBTQ Student Resource Center at Auraria

Location: Tivoli Student Union 213

Phone Number: 303-615-0515

Website: <http://www.ucdenver.edu/life/services/glbts/services/Pages/default.aspx>

Email: info@glbts.org

The LGBTQ Student Resource Center is a tri-institutional office on the Auraria Campus serving the students, faculty and staff of Metropolitan State University of Denver, Community College of Denver and University of Colorado at Denver. We are available to all Auraria students as a resource for exploring issues of sexual orientation and gender identity.

The LGBTQ Student Resource Center is located in the Tivoli Student Union, Room 213, and is staffed by a director and assistant director, with the support of student employees and volunteers. Input and involvement from the entire campus community are welcomed. Our center offers a variety of support, education, and advocacy services for the entire campus community including:

- Support for those who may have questions about their own sexual orientation, gender identity, gender expression, or that of a friend or family member
- Advocacy for students experiencing discrimination or harassment based on a real or perceived LGBTQ identity
- Speakers for events, workshops, and classes on various aspects of sexual orientation/gender identification
- Programs and workshops about working more effectively with the gay, lesbian, bisexual, and transgender communities and combating misinformation, misconceptions, and homophobia
- Resource library with over 1700 books and videos (documentary and cinema) available for research and leisure as well as a multitude of free literature regarding other organizations and services throughout Denver and Colorado that provide outreach, services, and advocacy.

The Office of Global Education/ Study Abroad

Location: Tivoli Student Union, LynxConnect Suite 439

Phone Number: 303-315-2001

Website: www.ucdenver.edu/studyabroad

Email: study.abroad@ucdenver.edu

The Office of Global Education / Study Abroad provides academically and professionally relevant international experiences to a diverse student population at the University of Colorado Denver | Anschutz Medical Campus. These experiences equip students with cross-cultural skills necessary to succeed in an interconnected global society. The Office of Global Education is committed to providing students with a wide range of engaging and affordable study, internship, research, and clinical opportunities.

International program offerings vary to meet the needs and interests of all students. These programs are open to undergraduate, graduate, and international students; it is not necessary to be a particular major to participate. Program lengths range from two weeks to an academic year or more. The vast majority of programs do not require language proficiency beyond the English language.

The Office of Global Education strives to keep study abroad programs affordable. In most cases, students are able to utilize financial aid and are eligible for an array of internal and external scholarships. For the most current information on programs,

policies, and funding, please visit the Office of Global Education website at ucdenver.edu/studyabroad or visit LynxConnect in the Tivoli.

International Affairs

Location: Lawrence Street Center, Suite 932

Phone Number: 303-315-2230

Website: www.ucdenver.edu/international

Email: Please refer to website for more information

The Office of International Affairs (OIA) serves the university by providing administrative support, strategic advice, technical services, collaborative educational programs with the university's 13 schools and colleges, and related services that contribute to the strategic international goals of the university. OIA provides visa and orientation services to international students and scholars; offers expertise in the development and maintenance of undergraduate, graduate and professional global education; assists with brokering and designing bilateral international educational programs; and offers comprehensive international recruitment and admissions services. OIA addresses international policy issues, has oversight of international risk management protocols, serves as a resource for best practices in the internationalization of higher education, maintains central data bases pertaining to international activities of the university, advises on the development of international affiliations and agreements, assists departments/programs and schools/colleges with the development of comprehensive international strategic planning, and seeks to promote and support initiatives that advance international research, education, and global cooperation in order to enhance the reputation of the University of Colorado Denver | Anschutz Medical Campus.

OIA also serves as a resource for faculty seeking international research opportunities, provides a comprehensive list of international scholarship/fellowship information, and serves as the institutional liaison for the CIES Fulbright Scholars Program.

The divisions of OIA include:

- ESL (English as a Second Language) Academy (www.ESL.ucdenver.edu)
- International Operations
(<http://www.ucdenver.edu/academics/InternationalPrograms/oia/operations>)
(www.international.ucdenver.edu)
- Global Education: Study Abroad (www.ucdenver.edu/studyabroad)
- International Admissions (www.internationaladmissions.ucdenver.edu)
- International Student and Scholar Services (www.international.ucdenver.edu/ISSS)

International Colleges and Partnerships

International College

Beijing- <http://www.ucdenver.edu/academics/internationalprograms/oia/icb/Pages/default.aspx>

International College Beijing (ICB) is a joint education program between the University of Colorado Denver (CU Denver) and China Agricultural University (CAU), located in

Beijing, People's Republic of China. The partnership, formed in 1994, was one of the first of its kind approved by the Chinese Ministry of Education.

At ICB students can choose to earn a CU Denver Bachelor of Arts degree in either economics or communication on site in Beijing. Students can also choose to study in Denver to complete their undergraduate programs after a year or two of study at ICB. As courses are taught in English by CU Denver faculty, U.S. students can learn or perfect their Chinese while pursuing rigorous courses alongside ICB Chinese students, fostering a truly global classroom experience.

ICB is located on the east campus of China Agricultural University in the Haidian district north of downtown Beijing. The campus is a 30-minute ride from downtown Beijing, Beijing International Airport and major cultural centers such as Tiananmen Square, the Forbidden City and the Summer Palace.

Joanne Wambeke, International Student Cohort and International Operations Manager, joanne.wambeke@ucdenver.edu, 303-315-2121.

International Student and Scholar Services

Location: Lawrence Street Center, Suite 932

Phone Number: 303-315-2230

Website: international.ucdenver.edu/ISSS

Email: iss@ucdenver.edu

The International Student & Scholar Services (ISSS) unit in the Office of International Affairs serves approximately 1,400 international students and 500 international scholars from all over the world each year. ISSS is responsible for ensuring university-wide compliance with a wide range of federal regulations relating to the enrollment and/or employment of international students and scholars. ISSS creates immigration documents, coordinates Check-In and Fundamentals sessions for new international students, helps students maintain their immigration status once they are here, offers a variety of programs and activities, and advises students on everything from adjusting to a new culture to applying for work authorization. ISSS also works closely with other members of the University of Colorado Denver community to ensure the success of our international students. For additional information about ISSS staff members and the services we provide, please visit our website at international.ucdenver.edu/ISSS

Learning Resources Center

Location: Student Commons Building, Suite 2105

Phone: 303-315-3531

Website: www.ucdenver.edu/lrc

Email: tutorialservices@ucdenver.edu

Spring/Fall Office Hours: M-F 8am-5pm

Summer Office Hours: M-R 8am-6pm, F 8am-5pm

Break Office Hours: M-F 8am-5pm

The CU Denver Learning Resources Center is designed to promote student success, retention, and graduation in a supportive, vibrant and inclusive academic setting. Our services are available to currently enrolled CU Denver undergraduate and graduate students and include free services such as CRLA certified tutoring, Supplemental Instruction (SI), Academic Development Workshops, Student Success Seminars, academic coaching, Conversation Groups, and English for Speakers of Other Languages (ESOL) support.

Lynx Center and New Student Orientation

Location: Student Commons Building, Suite 1107

Phone: 303-315-5969 (303-315-LYNX)

Website: <http://www.ucdenver.edu/lynxcenter>

Email: lynxcenter@ucdenver.edu

Office Hours: Monday-Friday, 8am-5pm

The Lynx Center provides all prospective and current CU Denver students with quick and easy access to resources, referrals and solutions. New Student Orientation supports newly admitted students and their families during their transition to CU Denver by offering orientation and welcome events at the beginning of each semester and during the summer months. For more information, check us out at www.ucdenver.edu/lynxcenter.

Office of Case Management

Location: Tivoli Student Union 309

Phone: 303-315-7306

Website: <http://www.ucdenver.edu/life/services/care/case/Pages/default.aspx>

Email: csm@ucdenver.edu

The Office of Case Management is here to support CU Denver | Anschutz students who may be experiencing difficult times related to mental health, safety concerns, interpersonal conflict, adjusting to college, family emergencies, feelings of isolation and anything else which may impact a student's ability to be successful at CU Denver | Anschutz. Our goal is to make sure that every student receives the support they need to thrive within the CU Denver | Anschutz community. Case Managers collaborate and consult with students, parents, faculty, staff, and other campus resources to best address the diverse needs of each student. Our office helps students navigate university systems, offices, and can assist with professor notifications, medical withdrawals, retroactive withdrawal processes, etc.

Office of Information Technology

Location: Lawrence Street Center, 1350

Phone: 303-724-4357 (4-HELP)

Website: <https://www1.ucdenver.edu/offices/office-of-information-technology>

Email: UCD-ITS-HelpDesk@ucdenver.edu

The Office of Information Technology (OIT) works in partnership with academic and business units to provide technical support to meet the needs of faculty & staff at the Denver/Anschutz Medical Campus. OIT serves as the primary source of enterprise-wide technology and telecommunications services in support of all faculty and staff.

Services range from providing help desk and desktop services to enterprise-wide services in web development, networking, email, security, systems development, and telephony to protecting the integrity of the University's data and administrative systems. Users are encouraged to contact the Help Desk for assistance with any of these services.

OIT also provides student computing services to currently enrolled students within the computer labs located in the North Classroom 1206, The Student Commons Building 2nd floor, and the Tivoli 241. The computer labs have Macintosh and Windows-based computers with Internet access available for student use on a first-come first-served basis. For more information, call the OIT Help Desk at 303-724-4357 (4-HELP) or UCD-ITS-HelpDesk@ucdenver.edu

Ombuds Office

Location: Lawrence Street Center Building, Room
1003

Phone: 303-315-0046

Website: www.ucdenver.edu/ombuds

Contact: Teresa
Ralicki; **Email:** Terese.ralicki@ucdenver.edu

The Ombuds Office is a free service that assists students in resolving UCD conflicts, complaints, and disputes. The cornerstones of our office are: confidentiality, impartiality, informality, and independence. Students typically use our office when facing issues that seem unfair to them or when they just don't know what to do next.

A sampling of concerns are:

- The actions of faculty, staff, or other students
- Denials of petitions
- Harassment of any kind
- Administrative decisions
- Grading disputes
- Clarification of policies or procedures

We can assist you in identifying and evaluating your options for dealing with issues so you can have the best chance of reaching a satisfactory outcome. Our Ombuds can also mediate disputes involving student clubs and organizations and provide conflict management training. We will happily accommodate your schedule for a meeting time that works best for you.

Peer Advocate Leader (PAL) Program

Location: Tivoli Student Union 127

Phone Number: 303-315-5492

Website: www.ucdenver.edu/PAL

Email: PAL@ucdenver.edu

PAL stands for Peer Advocate Leaders. We serve as peer mentors to help students navigate a successful college career. PALs are trained to work with students to connect them with CU Denver, the Auraria Campus, and the Denver Community. The mentoring relationship in the PAL is designed to foster student engagement and academic success by providing peer-level support that promotes student achievement, growth, and learning through the student's career at CU Denver. PALs are paired in First-Year Experience courses to plan and facilitate educational and social activities. PALs also assist students in one-on-one environments.

If you would like to apply to become a Peer Advocate Leader, please visit MyLynx to complete the application: <https://ucdenver.presence.io/form/new-peer-advocate-leader-pal-application-2020>

Center for Pre-Collegiate and Academic Outreach Programs

Location: North Classroom 4032

Phone Number: 303-315-7070

Website: <http://www.ucdenver.edu/academics/degrees/pre-collegiate/Pages/default.aspx>

Email: pcdp@ucdenver.edu

The Center currently houses unique and distinct programs. These programs are identified as having: early outreach, ongoing pro-active guidance, educational access, retention, and finally graduation from higher education. "The mission of the Center for Pre-Collegiate and Academic Outreach Programs at the University of Colorado Denver is to administer pre-college and pipeline programs. These programs are designed to motivate, educate, and prepare students to be successful in secondary and post-secondary education with the ultimate goal of obtaining a higher educational degree.

Student Activities and Events

Location: Tivoli Student Union 303

Phone Number: 303-315-7822

Website: <http://www.ucdenver.edu/life/services/studentlife/Pages/StudentLife.aspx> **Email:** studentlife@ucdenver.edu

Student Activities within the Office of Student Life offers a comprehensive student engagement program that helps bring about a positive college experience for every student. Our goal is to integrate what students learn from the full range of their experiences and to engage them in active learning both inside and outside the classroom. We collaborate with faculty and staff across CU Denver to provide a wide variety of programs aimed to build tradition within the CU Denver community. We are committed to bringing new and exciting activities, events and workshops that provide innovative opportunities for student learning, especially in the areas of self-knowledge, leadership, relationship-building, diversity, communication, service, civic engagement and social responsibility. Through participation in co-curricular activities, we help students enhance interpersonal, leadership and critical thinking skills and help prepare them for active citizenship beyond college.

Student and Community Counseling Center

Location: Tivoli Student Union 454

Phone Number: 303-615-9911

Website: www.ucdenver.edu/counselingcenter

Email: Please refer to website for more information

The Student and Community Counseling Center provides counseling sessions, groups and life skills workshops at no charge to students attending the Downtown Campus. Our services emphasize client strengths, recognizing diversity and promoting wellness to optimize academic success. We serve individuals, couples, families, and groups for mental health concerns including, but not limited to:

Anxiety, Crisis Intervention, Depression, Life skills, Relationships, Social justice issues, Stress management, Substance abuse, Biofeedback, and Trauma Therapy.

If appropriate, we refer students to additional on-campus and/or community resources through our WRAP (Wellness Resources Action Plan) program. By request, staff provide consultation, lectures and workshops to student, faculty, and staff groups on mental health topics, diversity, center services, and organizational and student development.

Student Government Association

Location: Tivoli Student Union 301

Phone Number: 303-315-7286

Website: <http://www.ucdenver.edu/sga>

Email: sga@ucdenver.edu

The Student Government Association serves as a voice for students. Similar to the structure of the U.S. Government, SGA has executive, legislative and judicial branches. Executives, Senators, College Council Members, and SACAB

representatives are elected each year in the spring semester. SGA assists students with information concerning student clubs and organizations, campus events, issues concerning student status and other information of general interest to students. SGA also provides student assistance with grievances and the opportunity to become more closely involved with the university community through active participation in student government itself or through service on university, tri-institutional and Auraria committees.

Student Health Insurance Office

Location: Plaza Building, Suite 150

Phone Number: 303-615-9999

Website: <https://www.msudenver.edu/healthcenter/>

Email: Please refer to website for more information

Hours: Monday- Thursday: 8:00am- 5:00pm, Friday 8:00am- 3:00pm

The Student Health Insurance Office strongly encourages all students to have adequate health insurance coverage. The university health plan is designed to coordinate services with the Health Center at Auraria to provide quality health care at the lowest possible cost. **For domestic students, the university health plan is voluntary.** International students with F-1 and J-1 student visas are required to carry the health insurance plan provided by the university. For more information for international students, please visit: <https://www.msudenver.edu/healthcenter/cudenverstudentinsurance/>

The Office of Student Life

Location: Tivoli Student Union 303

Phone Number: 303-315-7288

Website: www.ucdenver.edu/studentlife

Email: studentlife@ucdenver.edu

The Office of Student Life integrates the academic, residential, and co-curricular spheres of student's lives, linking the out-of-class experience to the academic mission of the University while enhancing the overall educational experience of students through the development of, exposure to and participation in social, cultural, intellectual, recreational, leadership and governance programs. Student Life and Campus Community is the advising, coordinating, resource and general information center for student organizations, the academic honor societies student government and the student newspaper. We collaborate with students, faculty, administrators, and other partners both inside and outside of the CU Denver community to create safe environments for students. In addition, we create opportunities for students to learn through active participation and reflection where they can develop as responsible leaders and engage with their peers and cultivate appreciation for diversity and the betterment of our global society. Student Life and Campus Community is comprised of Student Organizations and Student Leadership Programs, Volunteer and Community Engagement, and Parent and Family Program.

Student Newspaper: CU Denver Sentry

Location: Tivoli Student Union, 345

Phone Number: 303-556-2535

Website: www.cu-sentry.com

Email: Please refer to website for more information

The purpose of the *CU Denver Sentry* is to provide students with information about campus issues and events. The newspaper strives to include good investigative reporting, feature articles and items of general interest to its campus readership. In addition, the newspaper is a tool to encourage and develop writers, journalists, artists and other student members of its general management and production staff.

Student Organizations and Student Leadership Programs

Location: Tivoli Student Union 303

Phone Number: 303-315-7288

Websites: www.ucdenver.edu/studentorganizations www.ucdenver.edu/leadership **Email:** Please refer to websites for more information

Get involved with a student organization, student government or the campus newspaper. CU Denver has over 200 student organizations, honor societies, professional organizations and faith-based groups. We help students register with student organizations, and provide services, information, education, support, and advising to assist with the development and strengthening of students and student groups. In addition, we provide multiple opportunities for students to engage in practicing and developing their leadership skills. Leadership programs include diverse leadership conferences including CO-Leads, a state wide multi-cultural leadership conference; and the Lynx Leadership Conference, a program designed to increase the leadership skills of CU Denver Students. We also provide leadership trainings that enhance the co-curricular experience on campus through programs such as Leadership On demand, a program designed for students involved in student organizations on campus; and Student Government Association, providing a voice for students on campus. We encourage students to take advantage of shared governance and increase the sense of community on campus through all of the leadership programs.

Office of Equity (Title IX: Sex Discrimination, Sexual Harassment and Sexual Misconduct)

Location: Lawrence Street Center 12th Floor

Phone Number: 303-315-2567

Website: <http://equity.ucdenver.edu/>

Email: equity@ucdenver.edu

The Office of Equity exists to prevent, stop, and remedy sexual misconduct, discrimination, harassment, and related retaliation in our campus community. **We are working to make our campus a community in which Respect is Expected.**

The Sexual Misconduct Policy prohibits

- sexual assault: non-consensual sexual intercourse;
- sexual assault: non-consensual sexual contact;
- sexual exploitation (such as taking or sharing intimate photos without consent);
- dating or domestic violence;
- gender-based stalking;
- sexual harassment;
- and any retaliation taken against those involved in the reporting process.

The Nondiscrimination Policy prohibits discrimination or harassment on the basis of race, color, national origin, pregnancy, sex, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy.

To report an incident of sexual misconduct, discrimination, harassment, or retaliation or to request a training, please contact the Office of Equity at:

- **Phone number:** 303-315-2567
- **Email address:** equity@ucdenver.edu
- **Office address:** Lawrence Street Center, 12th floor, Denver, CO 80204
- **Mailing address:** Campus Box 134, P.O. Box 173364, Denver, CO 80217-3364.
- **Or visit our website for an online report and more information about our policies, procedures, trainings, and other resources:** www.equity.ucdenver.edu

Veteran & Military Student Services

Location: Tivoli Student Union 124

Phone Number: 303-315-7300

Website: <http://www.ucdenver.edu/life/services/Veteran/Pages/vmsshome.aspx>

Email: vmss@ucdenver.edu

Veteran & Military Student Services (VMSS) is the initial contact point for student active service members, veterans and their families attending CU Denver. The main priority of the office is to verify U.S. Department of Veterans Affairs education benefit certification for eligible students, ensuring that each student meets the Veterans Administration requirements for attendance, course load, content, as well as all other regulations necessary to receive educational benefit payments. This office assists students with filling out Veteran Affairs paperwork and in solving problems associated with the receipt of Veteran Affairs related educational benefits. The VMSS provides student peer to peer mentoring, transition assistance into higher education, scholarships, mental health services that are specific to the military and transition issues, and career preparation

through the Boots to Suits Program. The office also serves as a liaison for numerous campus and community resources.

Women and Gender Center

Location: Tivoli Student Union 310

Phone Number: 303-315-7262

Website: www.ucdenver.edu/wrc

Email: WGC@ucdenver.edu

The Women & Gender Center (WGC) at CU Denver is committed to advancing issues of gender equity and supporting the gender-focused needs of students, faculty, and staff on the Auraria campus. The mission of the Women and Gender Center is to address gender inequities and foster a campus community that values inclusion, social justice, equity, and respect for everyone regardless of background and experience. We are committed to enacting intersectional feminism in our programming by exploring gender as it overlaps and interacts with the multiple identities that people inhabit across their lifespans. We serve all members of the CU Denver community, regardless of gender identity.

Writing Center

Location: North Classroom 4014

Phone Number: 303-315-7355

Website: <http://writingcenter.ucdenver.edu>

Email: writing.center@ucdenver.edu

The Writing Center at CU Denver is a free resource available to all university students who wish to improve as writers. Services include in-person and online one-on-one appointments; an asynchronous Graduate Drop Box for graduate students; an asynchronous After Hours Drop Box for all students; workshops on a variety of topics (for example: citation, literature reviews, C.V.s, and more); and downloadable handouts, podcasts, and videos. Professional Writing Consultants will work on any type of writing and any aspect of the writing process, including (but not limited to) idea-generation, organization, thesis development, source usage, and grammar. Students bring in documents ranging from resumes, personal statements, and research essays to theses, rhetorical analyses, and grant applications. All writing is welcome. Interested students can schedule appointments (required) online and get more information (hours, directions, etc.) about each of our 9 locations/services for students right from the homepage (writingcenter.ucdenver.edu):

- CU Denver: NORTH 4014
- CU Anschutz: HSL 1204
- CU South Denver: Student Commons, 2nd floor, Liniger Building
- Auraria Library: Knowledge Market, 1st floor
- Business School: Cordillera Conference Room, 1st floor
- Campus Village at Auraria (residents only): Cyber Café, 1st floor
- Online (real-time) consultations

- An asynchronous Graduate Drop Box for graduate students
- An asynchronous After Hours Drop Box for all students

ACADEMIC POLICIES AND PROCEDURES

ACADEMIC STANDING

Good Academic Standing

Degree Seeking Students

Students at the University are expected to maintain progress in their degree program, as defined by being in “good academic standing.” Good academic standing requires a minimum cumulative grade point average (GPA) of 2.000 on all University of Colorado course work.

Non-degree Seeking Students

Continuation as a non-degree student is contingent upon maintaining a cumulative GPA of 2.000 upon completion of 12 or more semester hours.

Failure to maintain the required average will result in a non-degree student being suspended. The suspension is for an indefinite period of time and becomes part of the student’s permanent record at the university. While under suspension, enrollment at the university is prohibited. For more information contact the dean’s office of the school /college you are enrolled in.

Non-degree students are not placed on academic probation prior to being suspended.

Early Alert

- Student’s faculty member notifies academic advisor of academic difficulties via Early Alert system.
- Academic advisor notifies student via university email of Early Alert, encourages student to make an appointment.
- Advisor may place advising service indicator on student’s registration. Service indicators are “flags” placed on a student’s record that prevent the student from registering until they deal with the reason for being flagged.
- Requires that student contact the advisor (usually via face-to-face appointment) to discuss the Alert, possible ramifications (such as academic probation), and resources available.

- Advisor will release service indicator for registration upon satisfactory contact with student.
- No restrictions on enrollment or class load at this time

Academic Probation

- Student's cumulative CU GPA (grade point average) falls below 2.000.
- Student is notified of their Academic Probation standing via university e-mail.
- An Academic Standing hold is placed on a student's account every semester until their cumulative GPA is raised to 2.000 or higher.
- Academic probation entails:
 - Completion of the Academic Support Module (ASM). The ASM is an online module designed to support to support students' academic progress. Students will receive a link to access the ASM in their Academic Probation notification e-mail.
 - By completing the module, students learn about various support services available through CU Denver and the Auraria Campus such as Financial Aid, the Learning Resources Center, the Office of International Affairs, and many others. They also learn about the requirements and strategies for getting back in Good Academic Standing.
 - Students are strongly encouraged to meet with their academic advisor.
 - Student must complete the ASM to register for the next semester.
 - Student must earn a semester GPA of 2.300 each and every semester, including summer session, regardless of the number of credit hours attempted, until their cumulative GPA is raised to 2.000 or better.
- Students have five attendance semesters or 30 hours to improve their cumulative CU GPA to 2.000.
- Once a student's cumulative GPA reaches 2.000 or better, the student is considered to be in good academic standing. Any registration or advising holds will be removed. If a student fails to achieve a term GPA of 2.300 or better while on academic probation in any given semester, the student will be placed on "restricted probation" and notified via university e-mail.

Restricted Academic Probation

- An appointment with the student's academic advisor is required.
- Together, the student and advisor will determine the best courses to take.
- Students on Restricted Academic Probation cannot register for more than two courses per semester, or in more than seven credit hours per semester.
- Students on Restricted Academic Probation must achieve a 2.300 semester GPA

- Students remain on Restricted Academic Probation until they achieve good standing or are suspended.

International Student Status has additional restrictions. International students must also contact the Office of International Affairs.

Academic Suspension

- Students who fail to earn a 2.300 semester GPA while on Restricted Academic Probation will be placed on Academic Suspension.
- Students are notified via university e-mail when they are placed on Academic Suspension.
- Suspension entails:
 - Students are unable to attend the University of Colorado Denver, or any University of Colorado campus, for one year/three semesters (including summer session).
 - To prepare for readmission, students can either attend another institution and demonstrate improved academic performance (minimum GPA at another institution must be 2.750) OR use the time off to address issues directly contributing to their academic difficulties.
- Students may petition the individual college's appellate committee (or Undergraduate Experiences appellate committee) for readmission after the required one year/three semester suspension period. It is recommended that students apply early to allow time for adequate review.
- For readmission, students must meet and document at least one of the following criteria:
 - Attendance at another regionally accredited college/university wherein they completed a minimum of 12 transferable credit hours that are applicable to their degree, with a cumulative GPA of at least 2.750.
 - Provide an explanation of their previous academic difficulties and of what has changed, and how this will allow them to now achieve and maintain good academic standing (including a semester GPA of at least 2.300 and a cumulative GPA of at least 2.000).
- If a student is granted readmission, they will be readmitted on Restricted Academic Probation and must meet the conditions of Restricted Academic Probation as described above.

Subsequent Suspension

- Students on suspension a second time may be readmitted to the university only by petition to the college's appellate committee.
- Students will only be considered for readmission if they have demonstrated significant improvement in academic performance at the college/university level.

COURSE INFORMATION

Attendance Policy

Successful performance in college courses is dependent upon regular student attendance and participation. It is the University's expectation that students will participate in every class, independent of whether attendance is formally part of the course grade. The University recognizes there will be occasions when students must miss classes that contain examinations, graded assignments, experiments or projects, and general class participation. The University Policy website further addresses the issues of student absences, identifies possible accommodations, and outlines both faculty and student responsibilities.

The University also recognizes that excessive excused absences will make it impossible to evaluate a student's performance in a class based on attendance and participation or in a class with multiple missed graded assignments. Under these circumstances, an administrative solution should be explored with the student to drop the course(s) before the end of the semester.

The full administrative policy is available [here](#).

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students are required to attend classes, including online classes, on a regular basis. Absences must be arranged with the instructor and must conform to university and instructor policies on attendance.

College of Arts & Media (CAM) policy states that students who miss the first two class sessions of any CAM course can be administratively dropped. Likewise, students may not be permitted to add any CAM course if they have missed the first two classes. Students should check with their instructor if they have any questions about their status in the course.

College of Architecture and Planning

Students are expected to attend all meetings of classes. Excessive unexcused absences may result in a grade reduction at the discretion of the instructor. Absence from a class will be excused for verified medical reasons, religious obligations or for extreme personal emergencies. The student may be required to furnish evidence.

Timeliness of Work

Students' assignments are to be completed in a timely manner. Any assignment turned in late may have its grade reduced by an amount set at the discretion of the instructor. An assignment may be turned in late without penalty for verified medical reasons, religious obligations or for extreme personal emergencies. Students must have their instructor's written permission to turn an assignment in late. Students with excused late work may turn in the assignment by the end of finals week without penalty. Otherwise, the grade "I" will be assigned at the discretion of the faculty.

Business School

Students are required to attend classes, including online classes, on a regular basis. Absences must be arranged with the instructor and must conform with university and instructor policies on attendance.

School of Education and Human Development

Students are required to attend classes, including online classes, on a regular basis. Absences must be arranged with the instructor in advance and must conform to university and instructor policies on attendance.

College of Engineering, Design and Computing

Successful work in the College of Engineering, Design and Computing is dependent upon regular attendance in all classes. Students who are absent should make arrangements with instructors to make up the work missed. Students who for illness or other good reason miss any examination must notify the instructor no later than the end of the day on which the examination is given. Failure to do so may result in an F in the course.

Course Repeat Policy

Though students may take any course more than once, credit toward graduation is counted only once for a typical course, unless otherwise noted in the course description. Some types of courses (e.g. Internships, Independent Studies, etc.) may be repeatable for applicable credit within a certain range of total semester hours. See course descriptions for the max semester hours applicable from each course.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Architecture and Planning

A failed course (grade of F) may be repeated; however, the F will be included in the GPA and will appear on the transcript. Students must earn at least a C- grade in required architecture core courses, including design studios. Architecture core courses must be repeated if the student earns less than a C- grade.

College of Arts & Media

Students may re-register for any course. Both (all) courses remain on the transcript and both (all) grades are used to calculate the student's GPA. Course credit toward graduation is counted only once for a typical course, no matter how many times the

course is repeated. Some types of courses (e.g. Internships, Independent Studies, etc.) may be repeatable for applicable credit within a certain range of total semester hours. Special Topics and/or other departmental courses may also be repeatable for applicable credit within a certain range of total semester hours, per departmental/program policy. Consult a College of Arts & Media (CAM) advisor for details.

A minimum grade of C (2.000) is required for each course applied toward a CAM major, minor or certificate requirement. These courses/requirements must be repeated if the student earns a final grade of C- (1.700) or lower. A grade of P is acceptable for major, minor or certificate courses in which the only grade available is Pass or Fail.

Business School

A failed course (grade of F) may be repeated; however, the F will be included in the GPA and will appear on the transcript. Students must earn at least a C grade in required business core courses. Core business courses must be repeated if the student earns less than a C grade.

School of Education and Human Development

Students may repeat any course. All courses, including repeated courses, remain on the transcript and all grades are included in the student's University of Colorado GPA calculation. Course credit toward graduation is counted only once for a typical course, no matter how many times the course is repeated. Some types of courses (e.g. Internships, Independent Studies, etc.) may be repeatable for applicable credit within a certain range of total semester hours. Special Topics courses may be repeatable for applicable credit within a certain range of total semester hours, as long as the topic is different. See course descriptions for the maximum semester hours applicable from each course.

College of Engineering, Design and Computing

Undergraduate students may not register for credit in a course in which they already have received a grade of C- or higher. For required courses (including technical electives): an F grade necessitates subsequent satisfactory completion of the course; students must repeat a prerequisite course in which a grade of D+ or lower was earned before moving on to the subsequent course.

If students do not successfully complete (C- or higher) an engineering class on the second attempt, they must obtain written approval from their major department to enroll for the course for the third time. When a course is retaken because of a D or F grade, both grades will appear on the transcript and both will be averaged into the GPA. Any exceptions to these policies must be made by written petition through the Office of the Dean.

College of Liberal Arts and Sciences

Students may re-register for any course. Both (all) courses remain on the transcript and both (all) grades are used to calculate the student's GPA. Course credit toward graduation is counted only once for a typical course no matter how many times the course is repeated. Some types of courses (e.g. Internships, Independent Studies, etc.)

may be repeatable for applicable credit within a certain range of total semester hours. Special Topics courses may be repeatable for applicable credit within a certain range of total semester hours, as long as the topic is different. See course descriptions for the max semester hours applicable from each course.

Explanation of Course Numbers

Courses numbered 1000-2999 are considered lower-division undergraduate. Courses numbered 3000-4999 are considered upper division undergraduate. Courses at the 5000 level and above are graduate.

SCHOOL/COLLEGE SPECIFIC POLICY

Business School

The course numbering system used at CU Denver identifies the class standing required for enrollment. Students are expected to take 1000-level courses in their freshman year, 2000-level courses in their sophomore year, 3000-level courses in their junior year and 4000-level courses in their senior year. Courses at the 5000 and 6000 level are restricted to master's-level business students, and courses at the 7000 level are restricted to PhD students.

Explanation of Semester Hours

The University of Colorado Denver campus academic calendar is separated into 3 semesters, fall, spring, and summer. The University of Colorado is on a semester credit system. For every semester credit enrolled, the student is expected to spend 2-3 hours outside of the assigned class time.

Final Examinations

All students enrolled in a course for credit are required to attend a final examination unless the professor has made previous arrangements. All faculty are to alert students about the date, time, and location of the final examination in a timely manner. With approval from the appropriate department, final examinations may be removed from a course.

If a student has three or more finals on the same day, the student has the ability to change the time of one final with approval from the instructor of the final they wish to change. Students should check their final exam schedule for conflicts as soon as possible and alert their instructors promptly and prior to the scheduled final examination.

Final Grades

A degree audit report is an automated record reflecting a student's academic progress toward completing degree requirements in a declared major. Each degree audit report draws its information from the university's student information system. Each time a new report is run, the most up-to-date course information and grades are used. A report can be requested by logging on to the student portal. Students should contact their schools and colleges for additional information on the availability of a specific degree audit report.

Grades are normally available within two weeks after the end of the semester and can be accessed by logging into the UCD Access portal.

Grade Point Average (GPA) Calculation

GPA is computed by multiplying the credit points per hour (for example, B = 3) by the number of semester hours for each course. Total the hours, total the credit points and divide the total points by the total hours. Grades of P, NC, ***, W, IP, and I are not included in the GPA. I grades that are not completed within one year are calculated as F in the GPA.

If a course is repeated, all grades earned are used in determining the GPA. Grades received at another institution are not included in the University of Colorado GPA. Undergraduate, graduate and non-degree graduate GPAs are calculated separately. Enrollment in a second undergraduate or graduate program will not generate a second undergraduate or graduate GPA.

Students should refer to their academic dean's office for individual GPA calculations as they relate to academic progress and graduation from their college or school.

Sample GPA Calculation

Grade Earned: **A**; Credit Points per Hour: **4.000**; x Credit Hours: **4.000** = Credit Points in Course: **16.000**

Grade Earned: **A-**; Credit Points per Hour: **3.700**; x Credit Hours: **4.000** = Credit Points in Course: **14.800**

Grade Earned: **B+**; Credit Points per Hour: **3.300**; x Credit Hours: **4.000** = Credit Points in Course: **13.200**

Grade Earned: **P**; Credit Points per Hour: **-**; x Credit Hours: **3.000** = Credit Points in Course: **- (excluded)**

Grade Earned: **F**; Credit Points per Hour: **0**; x Credit Hours: **3.000** = Credit Points in Course: **0**

Total of 15 credit hours with 44 credit points, so $44/15 = 2.930$ GPA

Grade Appeals

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

For College of Arts & Media courses:

- When a student has questions or concerns regarding academic issues such as project grades, final grades, attendance policies, etc., the student is encouraged to speak directly with the faculty member teaching the course.
- If resolution or clarity of understanding is not reached, the following procedure should be followed:
 - The student contacts the chair of the department offering the course to discuss the concerns and their point of view.
 - The department chair speaks with the faculty member to ascertain the faculty member's point of view.
 - The department chair facilitates a meeting between the student and faculty member to discuss the issue.
 - If the student still has concerns after completion of these procedures, the student should contact the College of Arts & Media associate dean of academic and student affairs.

For non-CAM courses, students should consult the school/college offering the course.

College of Architecture and Planning

Any student may appeal the grade they receive in a class within 30 days from the issuance of the grade. The student should first discuss the issue and adjustment sought with the relevant course instructor. If the course instructor does not reply within 30 days, the student submits a written appeal to the program director. Within 30 days, the program director shall process the appeal and prepare a written report explaining the reason(s) for the department recommendation. If the grade appeal still remains unresolved at the department level, the student submits a written request to the department chair and then to the associate dean of academic affairs, who will direct the Academic Affairs Committee to review the appeal. If the grade appeal remains unresolved at the college level, the student may appeal to the dean.

Business School

Students must follow the process below.

1. Discuss concerns with the faculty member.
2. If the issue is not resolved after a conversation with the faculty member, discuss concerns with the Department Chair.
3. If the issue is not resolved after a conversation with the Department Chair, discuss concerns with the Associate Dean. Neither the Dean, nor any director, will offer an

opinion with respect to the qualitative assessment of a student's work, but, may consider whether the procedures used to determine a grade were consistent with the syllabus and written amendments to the syllabus. No passing grade will be changed after one year. Requests for grade adjustments/appeals must be made in the semester immediately following the semester in which the disputed grade was earned.

School of Education and Human Development

Students must follow the process below.

1. Discuss concerns with the faculty member.
2. If the issue is not resolved after a conversation with the faculty member, the student may appeal to the SEHD Student Committee. The process for submitting a student appeal can be found [here](#).

College of Engineering, Design and Computing

Final grades, as reported by instructors, are to be considered permanent and final. Grade changes will be considered only in cases of documented clerical error and must be approved by the dean.

Grade Forgiveness

Degree-seeking undergraduate CU Denver students pursuing their first degree at CU Denver may request to forgive a grade from a prior instance of taking a 1000-level or 2000-level CU Denver class if they received a D+, D, D-, or F in the prior attempt. Course retaken must be an exact match for the previous attempt. Ineligible courses include special topics, repeatable courses, course grades received from academic dishonesty, mismatched credit hours, and equivalent cross-listed courses. Courses repeated for grade forgiveness must be taken for a letter grade (not audit, pass/fail, no credit). Limited to one attempt per course, up to a maximum of 18 credit hours.

Grade forgiveness deadlines can be found in the Academic Calendar. The highest grade becomes the final grade that calculates in the GPA.

If a student drops the class for which grade forgiveness was requested, the grade forgiveness request will automatically be cancelled on the student's behalf. If the student later re-enrolls in the same or different section of the same course, they will need to re-submit the grade forgiveness request form.

Note: Students may repeat courses throughout their academic career without invoking grade forgiveness. When courses are repeated without invoking grade forgiveness, all attempts are included in student credit and GPA totals calculations, and some programs limit the number of course repeats.

To review the policy in full, please [click here](#).

Grading System

The instructor is responsible for whatever grade symbol (e.g., A, B, C, D, F, I or IP) is to be assigned. Special symbols (NC and W) are indications of registration or grade status and are not assigned by the instructor. Pass/fail designations are not assigned by the instructor but are automatically converted by the grade application system, as explained under “Pass/Fail Procedure.”

Standard Grades	Quality Points
<i>A = superior/excellent</i>	4.000
<i>A(-) =</i>	3.700
<i>B(+) =</i>	3.300
<i>B = good/better than average</i>	3.000
<i>B(-) =</i>	2.700
<i>C(+) =</i>	2.300
<i>C = competent/average</i>	2.000
<i>C(-) =</i>	1.700
<i>D(+)=</i>	1.300
<i>D =</i>	1.000
<i>D(-) = minimum passing</i>	0.700
<i>F = failing</i>	0

Instructors may, at their discretion, use the PLUS/MINUS system but are not required to do so.

I-incomplete-converted to an F if not completed within one year.

IP-in progress-thesis at the graduate level only.

P/F-pass/fail-P grade is not included in the GPA; the F grade is included; up to 16 hours of pass/fail course work may be credited toward a bachelor's degree.

H/P/F-honors/pass/fail-intended for honors courses; semester hours count toward the degree but are not included in the GPA.

NC indicates registration on a no-credit basis.

W indicates withdrawal without credit.

Pass/Fail

1. Students who wish to register for a course on a pass/fail basis (or to revert from pass/fail to graded status) may do so only during the drop/add period.
2. Up to 16 semester hours of course work may be taken on a pass/fail basis and credited toward the bachelor's degree. Only six hours of course work may be taken

pass/fail in any given semester. (**Note:** Individual schools and colleges may have additional restrictions as to pass/fail credits. See the accompanying chart for an overview.)

3. Instructors will not be informed of pass/fail registration. All students who register for a pass/fail appear on the regular class roster, and a normal letter grade is assigned by the professor. When grades are received in the registrar's office, those registrations with a pass/fail designation are automatically converted by the grade application system. Grades of D- and above convert to grades of P. Courses taken pass/fail will be included in hours toward graduation. Pass grades are not included in a student's GPA. An F grade in a course taken pass/fail will be included in the GPA.
4. Pass/fail registration records are maintained by the registrar's office.
5. Exceptions to the pass/fail regulations are permitted for specified courses offered by the School of Education & Human Development, the extended studies programs and study abroad programs.
6. Graduate degree students can exercise the P/F option for undergraduate courses only. A grade of P will not be acceptable for graduate credit to satisfy any Graduate School requirement.
7. Students who register for a course on a pass/fail basis may not later (after the drop/add period) decide to receive a letter grade.

Note: many other institutions will not accept a P grade for transfer credit.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

A minimum grade of C (2.000) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.700) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable ONLY for major, minor or certificate courses in which the only grade available is Pass or Fail.

Courses taken to fulfill major/minor/ certificate requirements, Core English Composition, Core Mathematics, and the foreign language requirement may not be taken pass/fail (unless the course is only offered on a pass/fail basis).

No more than 6 semester hours pass/fail in any given semester. No more than 12 semester hours may be elected as pass/fail toward the degree.

College of Architecture and Planning

Only internships, independent studies and non-architecture elective courses may be taken pass/fail. Required architecture courses (including the campus core) may not be taken pass/fail. A maximum of 6 hours pass/fail credit may be applied toward the BS Architecture degree. Courses taken in excess of the maximum will not be applied toward degree credit. Pass/fail determination must be made within the posted deadlines (at census dates) and may not be rescinded (unless approved by the undergraduate committee).

Business School

Only internships, independent studies and nonbusiness elective courses may be taken pass/fail. Required business and nonbusiness courses (including the campus core)

may *not* be taken pass/fail. A maximum of 6 hours pass/fail credit may be applied toward the business degree. Courses taken in excess of the maximum will not be applied toward degree credit. Pass/fail determination must be made within the posted deadlines (at census dates) and may not be rescinded (unless approved by the undergraduate committee).

School of Education and Human Development

Students must earn a final grade of at least a C-/1.700 in major courses and a B-(2.700) or above in licensure or endorsement courses within the major. These courses/requirements must be repeated if the student earns a final grade below the minimum requirement. Program-required courses, unless designated as P/F, are not permitted to be taken as pass/fail.

College of Engineering, Design and Computing

The primary purpose for offering courses on a pass/fail grade basis is to encourage students, especially juniors and seniors, to broaden their educational experience by electing challenging upper-division humanities and social sciences elective courses without serious risk to their academic records. In general, pass/fail should be limited to 3000- or 4000-level humanities and social sciences courses. Students must process the pass/fail form during the first two weeks of the semester. Engineering students cannot take required courses, including technical electives, pass/fail.

A maximum of 16 semester hours may be taken pass/fail, including courses taken in the honors program.

College of Liberal Arts and Sciences

Students may select the pass/fail grading option for most courses. In addition to CU Denver policies covering the pass/fail grading option (see the Registration and Records chapter of this catalog), CLAS students must adhere to the following college pass/fail grading policies:

1. Courses used to complete a student's major, minor and certificate may not be taken on a pass/fail basis.
2. Courses required to demonstrate proficiency may not be taken on a pass/fail basis: ENGL (core curriculum), MATH (core curriculum) and first two semesters of foreign language.
3. Courses used to satisfy the intellectual competencies section of the CU Denver core curriculum may not be taken on a pass/fail basis.
4. Courses in the knowledge area section of the CU Denver core curriculum may be taken on a pass/fail basis.
5. Courses used to satisfy CLAS graduation requirements may be taken as pass/fail, except for to fulfill the Communicative Skills CLAS Core, major or minor requirements.

CLAS requires a minimum of 30 semester hours of courses with letter grades. Courses used to satisfy major, minor or foreign language cannot be taken on a pass/fail basis. No more than 6 hours pass/fail any semester. A maximum of 16 semester hours may be taken pass/fail.

School of Public Affairs

Core knowledge area and general electives are the only courses that can be completed pass/fail. A grade of D- or better is translated by the Records Office to a P (pass) grade. P grades do not affect students' GPA; F grades do affect students' GPA. Students interested in completing a course as pass/fail must submit a Schedule Adjustment Form during the add/drop period during the respective semester to the BACJ Academic Advisor. Students need to consult the academic calendar posted on the Office of the Registrar's webpage for add/drop dates. Up to 16 credits may be completed as pass/fail and credited toward the bachelor degree. Students can complete a maximum of 6 credits as pass/fail in any one semester.

No Credit

Students may register for a course on a no-credit basis with the consent of their instructor and the dean of their school or college. No grade or credit is awarded. The transcript reflects the name of the course taken and an N/C notation.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

A minimum grade of C (2.000) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.700) or lower will not fulfill a major, minor or certificate requirement. Therefore, students are not permitted to take these courses for no credit.

Business School

Pass-Fail or No Credit (Audit). With the exception of internships, experiential learning and travel study courses, the Business School does not permit the election of pass-fail grading for any business course required for the student's degree. Students are not allowed to audit business courses.

College of Engineering, Design and Computing

An engineering student must request approval before enrolling for no credit (NC) for any course. Required courses must be taken for credit. Once a course has been taken NC, the course cannot be repeated for credit.

Incomplete Grade

An I is an incomplete grade. Policies with respect to I grades are available in the individual college and school dean's offices.

An I is given only when students, for reasons beyond their control, have been unable to complete course requirements. A substantial amount of work must have been satisfactorily completed before approval for such a grade is given.

The instructor who assigns an I sets the conditions under which the course work can be completed and the time limit for its completion. The student is expected to complete the requirements by the established deadline and not retake the entire course. It is the instructor's and/or the student's decision whether a course should be retaken. If a course is retaken, it must be completed on the Denver Campus or in extended studies classes. The student must re-register for the course and pay the appropriate tuition.

The final grade (earned by completing the course requirements or by retaking the course) does not result in deletion of the I from the transcript. A second entry is posted on the transcript to show the final grade for the course, with a notation that the course was 'originally graded as I.'

At the end of one year, I grades for courses that are not completed or repeated are changed to an F.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

The College of Arts & Media (CAM) has strict policies for granting incomplete grades. They include but are not limited to the following:

- Reason for incomplete must be a verifiable circumstance beyond the student's control that made completion of the course impossible. The student must provide documentation.
- The majority of course requirements (75 percent) must have been completed with a passing grade to be eligible for an incomplete (C (2.000) for major/minor/certificate courses; C- (1.700) for select general education courses; D- (0.700) for most general education and general elective courses).
 - Whether the student has successfully completed 75% of the course with a passing grade is determined by the instructor and based on the requirements listed in the syllabus.
- CAM course completion agreement must be signed by both the instructor and student, with final approval by the dean's/advising office.
- All course work must be completed within one calendar year of the end of the original course, unless an earlier deadline is specified.
- Requests for a retroactive change from a letter grade to an incomplete will not be considered.

The student is responsible for requesting an incomplete grade and submitting all of the appropriate paperwork and obtaining approvals. Please contact CAMadvising@ucdenver.edu for additional information.

Business School

Incomplete Grades. The only incomplete grade given in the school is I. An I grade is assigned only when documented circumstances clearly beyond the student's control prevent completion of course requirements (exams, papers, etc.). Students must sign a contract outlining how they will make up the missing work with the instructor giving the I.

Students need not register for the course a second time. All I grades must be made up within the contract period (which may not exceed one year), or the I will automatically be changed to the grade of F. The student is responsible for contacting the instructor to schedule the completion of the coursework.

School of Education and Human Development

Students who wish to request a grade of Incomplete ("I"), should refer to the SEHD Course Completion Agreement for Incomplete Grade. The full policy and form are available on the SEHD Student Resources webpage.

College of Engineering, Design and Computing

An incomplete may be given by the instructor for circumstances beyond the student's control, such as a documented medical or personal emergency. When it is given, the student and the departmental office must be informed in writing by the instructor, who states what the student is to do in order to remove the incomplete and the date the tasks are to be completed. The instructor will assign an I distinction. The student is expected to complete the course requirements (e.g., the final examination or term paper), within the established deadline and not to retake the entire course. The majority of course requirements (75%) must have been completed with a passing grade to be eligible for an incomplete. An I distinction will be converted automatically to a grade of F after one year if the specified work is not completed.

It is the student's responsibility to ensure that all courses marked as incomplete are officially completed before the 10th week of the student's final semester in school.

College of Liberal Arts and Sciences

When a student has special circumstances that make it impossible to complete course assignments, faculty members may choose to award an incomplete grade. All incomplete courses are assigned a grade of Incomplete ("I"). Incomplete grades are not awarded for poor academic performance or as a way of extending assignment deadlines. A CLAS course completion agreement form or other written documentation of assignments to be completed as well as the agreed upon due dates is strongly suggested when faculty and student agree on an incomplete grade. Both parties are encouraged to keep copies of this documentation. Faculty are not required to award an Incomplete.

To be eligible for an incomplete grade, students must:

- Have participated in the class for a significant proportion of the term
- Have successfully completed a significant proportion of the course assignments
- Have special circumstances (verification may be required) that preclude the student from attending class and/or completing graded assignments
- Make arrangements to complete missing assignments with the original instructor by a mutually agreed upon date but within one calendar year

After the agreed upon date or maximum of a calendar year, the I reverts to an F grade on the student's transcript if the instructor fails to submit a change of grade. Any request to allow a grade change after the one-year period must be petitioned to the CLAS Academic Standards Committee.

In order to be on the graduation lists, a student must resolve all incompletes before the last day of classes in the semester in which they intend to graduate.

Students should not re-enroll in a course in which they have an incomplete. Re-enrollment in a course in which a student has an I could result in a loss of tuition and an F in the original course. A student with an I does not need to be enrolled in any course or earning any credits to complete the incomplete work. Completing an I does not require any additional tuition payment.

Module/Intensive Courses

Courses are also offered in five-week modules, in special weekend courses and in seminars. Students should contact the college/school for information on short-term courses offered each semester.

Requisites

Prerequisites

A prerequisite is a course that needs to be taken prior to registration for the next course in the designated sequence.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students must abide by all published prerequisites and corequisites, including minimum grades. The College of Arts & Media reserves the right to administratively drop students who enroll without the necessary prerequisites or corequisites.

Business School

Students are expected to know and fulfill all prerequisites when registering. Prerequisites are in place for the benefit of the student. The Business School wants our students to have the best experience in their courses, and having the prerequisites for a course ensures that you are ready for the material that will be covered. See course listings for relevant prerequisites as many are strictly enforced. The Business School reserves the right to administratively drop students who enroll without the correct prerequisites. This action may result in the loss of tuition.

School of Education and Human Development

Students must abide by all published prerequisites and co-requisites, including minimum grades. The SEHD reserves the right to administratively drop students who enroll without the necessary prerequisites or co-requisites.

College of Engineering, Design and Computing

For required courses, including technical electives, students must repeat a prerequisite course in which a grade of D+ or lower was earned before moving on to the subsequent course. If students do not successfully complete an engineering class with a C- or higher on the second attempt, they must obtain written approval from their major department to enroll for the course for the third time.

Prerequisite Checking

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Programs in the college are structured so that certain courses must be taken concurrently, others sequentially. Students will not be allowed to enroll in a course if its co-requisites or prerequisites have not been satisfied.

College of Architecture and Planning

Programs in the college are structured so that certain courses must be taken concurrently, others sequentially. Students will not be allowed to enroll in a course if its co-requisites or prerequisites have not been satisfied.

College of Engineering, Design and Computing

Programs in the college are structured so that certain courses must be taken concurrently, others sequentially. Students will not be allowed to enroll in a course if its co-requisites or prerequisites have not been satisfied.

Co-requisites

A co-requisite is a course(s) that needs to be taken simultaneously with another course.

Transcripts

Official Transcripts

The official transcript includes the complete undergraduate and graduate academic record of courses taken at all campus locations or divisions of the University of Colorado. It contains the signature of the registrar and the official seal of the university.

Official transcripts with posted grades for any given semester are available approximately three weeks after final exams. A transcript on which a degree is to be recorded is available approximately eight weeks after final exams.

For Denver Campus students, transcripts may be ordered through the online ordering portal by visiting www.ucdenver.edu/transcripts.

Transcripts are prepared when a student submits an order online. A student with financial obligations to the university that are due and unpaid will not be granted a transcript. The official PDF transcript is delivered within twenty-four hours, and mailed transcripts are processed within one business day. Rush service is available and processed within one business day.

Undergraduates Taking Graduate Coursework

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

College of Arts & Media undergraduate students are not typically permitted to take courses at the graduate level. Undergraduates interested in taking graduate-level courses should consult with the instructor and the department, as well as with their academic advisor.

College of Architecture and Planning

With prior written approval of the BS Architecture Director, students may take a maximum of 6 semester hours of graduate-level non-architecture elective credits. Students must earn grades of B or better in graduate courses to apply the credits toward BS Architecture degree requirements.

School of Education and Human Development

Undergraduate students are not typically permitted to take courses at the graduate level. SEHD undergraduate students interested in taking graduate-level courses should consult with the instructor and the program, as well as with their academic advisor.

College of Engineering, Design and Computing

With faculty advisor approval, an undergraduate engineering student may be granted the opportunity to take graduate courses to be counted toward an undergraduate degree. A maximum of 6 semester hours of graduate-level University of Colorado course work taken as an undergraduate can be considered for credit toward a graduate degree. Only a grade of B (3.000) or above will be considered for graduate-level credit. All consideration of graduate work to be counted toward both an undergraduate and a graduate degree must be approved by a faculty advisor.

DECLARING/CHANGING YOUR MAJOR

How to Declare or Change Your Major/Minor

Students must declare a major to graduate. Minors, additional majors and certificates are optional. Meet with your advisor to discuss options.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Declaring a Major or Minor

All undergraduate degrees offered through the College of Arts & Media (CAM) comprise 120 semester hours. Students must declare a major to graduate. Minors are optional.

All CAM majors require students to select a degree plan (BA, BS or BFA) and an emphasis. Links to information about specific majors, emphases and minors, including any required reviews/assessments for admission, may be found on the Programs page in this catalog. If an emphasis or minor does not require review/assessment for admission, CAM students in good academic standing may select it by submitting a major or minor declaration form in Arts 177.

Students may choose to pursue a double degree, double major, double emphasis or minor. Each of these options may require more than 120 semester hours to graduate.

Please contact CAM@ucdenver.edu for additional information.

Changing a Major or Minor

Undergraduate students who wish to transfer from one emphasis or minor to another within CAM must currently be in good academic standing, pass appropriate reviews/assessments, as outlined in the program pages of this catalog, and notify CAM in Arts 177 by submitting a change of major or a change of minor form.

Business School

Business majors must complete the prescribed courses in an area of emphasis comprising a minimum of 15 semester hours taken at CU Denver. Business students are advised to select an area of emphasis prior to completing the business core, and are required to declare a major area of emphasis by the time they have accumulated 60 to 75 semester hours. The courses in the area of emphasis are completed in the junior and senior years after completing the business core. A minimum GPA of 2.000 is required for courses in the area of emphasis.

The areas of emphasis include accounting, financial management, human resources management, information systems, international business, management or marketing. The specific requirements for these areas of emphasis are described in subsequent sections.

School of Education and Human Development

Undergraduate majors in the SEHD include the Bachelor of Arts in Education and Human Development (EDHD) and the Bachelor of Science in Human Development and Family Relations (HDFR). Additionally, the EDHD major has several tracks, including Elementary Education (K-6 licensure), Special Education (ages 5-21 licensure), Early Childhood Education licensure (birth-age 8 licensure), and Early Childhood Education

non-licensure. It is important for students to declare a major and track (if applicable) as early as possible in their academic career to ensure they take appropriate courses.

College of Engineering, Design and Computing

Students enrolled in the College of Engineering, Design and Computing who wish to change to another department within the college must apply for transfer by submitting a change of major form for undergraduate degree students, which can be found on the college website (<http://engineering.ucdenver.edu>) under > Policies and Forms. This form requires the approval of both departments.

Pre-engineering students who are ready for admission, or students enrolled in another school/college who wish to transfer into the College of Engineering, Design and Computing, must complete the Intra-University Transfer (IUT) form. This form is submitted to the Engineering Student Services Center in North Classroom 2605.

College of Liberal Arts and Sciences

It is important that students declare a major as early as possible in order to receive proper advising toward departmental requirements. Students in the college must declare a major by the start of their junior year (greater than 60 hours). Transfer students to the college with junior or senior standing should declare a major in their first semester at CU Denver. Students are allowed to change their major at any time.

Intra-University Transfer (IUT)

Students on the Denver Campus may change colleges or schools within the university provided they are accepted by the college or school to which they wish to transfer. Intra-university transfer forms may be obtained from the student's school or college or from the Office of the Registrar. Decisions on intra-university transfers are made by the college or school to which the student wishes to transfer.

Transfer deadlines for all programs are August 1 for Fall semester, December 1 for Spring semester, and May 1 for Summer session.

Students in continuing and professional studies programs wishing to enroll in regular courses or degree programs at CU Denver and undergraduate students wishing to become graduate students (or vice versa) should apply for admission to CU Denver. Visit www.ucdenver.edu/admissions or contact the Office of Admissions at 303-315-2601 or admissions@ucdenver.edu for assistance with application processes and options.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Architecture and Planning

Students who want to transfer to the BS Architecture program from another college or school of the University of Colorado Denver must formally apply for an intra-university transfer (IUT) to the College of Architecture and Planning. To apply for an intra-university transfer, students must submit an intra-university transfer (IUT) form to the undergraduate advisor. Transfer forms are available at the Office of Registrar or the College Undergraduate Advising Office; transcript request forms are available at the Office of the Registrar. Students must have earned a minimum of 12 University of Colorado Denver semester hours and have a 2.300 cumulative University of Colorado GPA to be eligible for an IUT to the BS Architecture program.

College of Arts & Media

Students who want to transfer to the College of Arts & Media (CAM) from another college or school within the university must formally apply for an intra-university transfer (IUT) and pass any appropriate reviews/assessments as outlined in the program pages of this catalog. To be considered for admission, students must have a minimum 2.000 cumulative University of Colorado GPA. To apply for an intra-university transfer, students must submit an intra-university transfer (IUT) form to the undergraduate advisor. Transfer forms are available at the Office of Registrar or from a CAM advisor; transcript request forms are available at the Office of the Registrar.

Business School

Students who want to transfer to the Business School from another college or school of the University of Colorado Denver must formally apply for an intra-university transfer (IUT) to the Business School. To apply for an intra-university transfer, students must submit an intra-university transfer (IUT) form and transcripts from the University of Colorado to the business program coordinator. Transfer forms are available at the Office of Admissions or the Business School Advising Office; transcript request forms are available at the Office of the Registrar. The transcript must include the student's most recent semester at the university. Students with previous course work from other institutions are also required to submit a copy of their transfer credit evaluations (advanced standings).

School of Education and Human Development

Students who wish to transfer to the SEHD from another school/college must meet with an academic advisor and formally apply for an intra-university transfer (IUT). Students must have a minimum of 2.000 cumulative University of Colorado GPA to be eligible for an IUT to the SEHD. Students should also be aware that, for teacher education licensure tracks, a minimum of 3.000 cumulative University of Colorado GPA is required for admission to the Professional Year (students with a lower GPA may be considered under certain conditions; please see SEHD website).

College of Engineering, Design and Computing

CU Denver students interested in an undergraduate engineering program but not enrolled in the college must request an intra-university transfer (IUT). Those approved for an IUT will be entered into the undergraduate program of interest. Admission to an Engineering interest does not guarantee admission to the major. To enter an engineering program through the intra-university transfer (IUT) process, students must have earned:

- a 2.750 (or higher) cumulative CU Denver GPA
- a 2.500 (or higher) GPA in Calculus I, Calculus II, and Calculus-based Physics I and the corresponding lab and no lower than a C- in any one of these courses.
- a C- or higher in all other engineering requirements taken prior to or at the time of the request.
- IUT guidelines are subject to change. Students are encouraged to meet with an Engineering Student Services advisor to discuss the IUT process prior to submitting a request.

GRADUATION

Academic Honors

Dean's List

CU Denver uses fixed criteria across all schools/colleges for determining eligibility for the Dean's List. This policy applies to undergraduate students.

For fall and spring semesters, students must successfully complete nine graded hours in the semester. These courses can be both within and outside of the student's home school/college. Metropolitan State University of Denver pooled courses will not be included in the GPA calculation nor will they apply toward the nine hours required for consideration. The GPA for inclusion in the Dean's List is 3.750.

In the summer semester, students must complete six graded hours. Course inclusion will be the same as in fall and spring semesters. The GPA for Dean's List in summer is also 3.750.

Scholarships tied to Dean's Lists may have additional requirements.

The Registrar's Office calculates the semester GPAs that are the basis for determining the Dean's List. Incompletes will not be considered in the calculation of minimum number of hours. The Dean's List will not be recalculated to include completed incompletes.

College Honors

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

LATIN ACADEMIC HONORS

Latin academic honors are awarded at the time of graduation, based on cumulative University of Colorado undergraduate GPA. To be eligible for honors, a College of Arts & Media (CAM) student must have completed a minimum of 30 semester hours at the University of Colorado (on any CU campus). A cumulative CU GPA of 3.650-3.749

earns cum laude, a 3.750-3.849 earns magna cum laude and 3.850 or above earns the summa cum laude honors designation on a degree.

OUTSTANDING GRADUATES

CAM recognizes “outstanding graduates” each fall and spring term. Students are nominated by CAM faculty and final selections are determined by the CAM Executive Committee.

Criteria for Outstanding Graduates:

- Cumulative University of Colorado GPA of 3.500 or higher
- Graduating senior in the semester the award is given
- Active member of CAM student club(s)
- Participant in production programs of the student’s department
- E.g., art exhibits, record productions, audio engineering
- Participant in outreach programs for the department and/or college
- Leadership qualities in the classroom
- Growth, development and demonstration of excellence as a practicing artist or scholar
- Active citizenship in the department, college, university and/or community
- Superior academic achievement

Business School

Students who demonstrate superior scholarship are given special recognition at graduation. Students must achieve a cumulative GPA of 3.500-3.649 in all business courses taken at the University of Colorado to be considered for cum laude, achieve a cumulative GPA 3.650-3.749 in all business courses taken at the University of Colorado to be considered for magna cum laude, and achieve a cumulative GPA of 3.750 or higher in all business courses taken at the University of Colorado to be considered for summa cum laude.

School of Education and Human Development

Academic honors are awarded at the time of graduation, based on the cumulative University of Colorado undergraduate GPA. To be eligible for honors, a SEHD student must have completed a minimum of 30 semester hours at the University of Colorado (on any CU campus). A cumulative CU GPA of 3.650-3.749 earns cum laude, a 3.750-3.849 earns magna cum laude and 3.850 or above earns summa cum laude honors designations.

College of Engineering, Design and Computing

In recognition of superior scholarship, academic honors are awarded at the time of graduation based on the cumulative University of Colorado undergraduate GPA, including the final semester of coursework. To be eligible for honors, a student must have completed a minimum of 60 semester hours at the University of Colorado (on any CU campus). Grades earned at institutions outside of the CU system will not be considered. For Special Honors, a student must have earned a cumulative CU GPA of at least 3.800, and for Honors, a GPA between 3.600 and 3.799 is required. Since

grades earned during the semester of graduation are considered, academic honors are notated in the commencement program as “pending” and are officially recorded on the diploma and transcript.

College of Liberal Arts and Sciences

A student who performs superlatively in course work in the college will be awarded a bachelor’s degree accompanied by the statement “with distinction”. To be eligible for graduation with distinction, a student must have either completed a minimum of 45 semester CU Denver hours in the student’s junior and senior years with a CU cumulative GPA of at least 3.750, or have completed a minimum of 45 semester CU Denver hours in the student’s overall CU Denver career with a CU Cumulative GPA of at least 3.750. A maximum of 6 out of the final 45 CU Denver semester hours may be completed with a grade of P (on P/F option).

Departmental Honors

SCHOOL/COLLEGE SPECIFIC POLICY

College of Liberal Arts and Sciences

Departments in the college offer programs through which students can qualify for Latin honors: cum laude, magna cum laude or summa cum laude. Determination of the level of honors is made by the department. Detailed information can be obtained from the CLAS Academic Advising Office or from the individual departments.

Applying for Graduation

Students planning to graduate must apply for graduation through the UCDAccess student portal between the first day of registration and census for the term they intend to graduate. Students must contact their academic advisor to determine what requirements remain for graduation, as well as complete any paperwork required by their school/college. Students will not be officially certified to graduate until a final audit of the student’s record has been completed approximately six weeks after the end of the term. After students have been certified to graduate, they must reapply with the Office of Admissions in order to return to the Denver Campus.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Architecture and Planning

Students are encouraged to meet with a College of Arts & Media advisor the semester before they intend to graduate to review graduation procedures and degree requirements. Students who have not attended the university for one calendar year (three consecutive semesters, including summer term) or longer must gain readmission to the university prior to applying for graduation. It is the student’s responsibility to apply with enough time for the readmission process to be finalized by the census date.

College of Arts & Media

Students are encouraged to meet with a College of Arts & Media advisor the semester before they intend to graduate to review graduation procedures and degree requirements. Students who have not attended the university for one calendar year (three consecutive semesters, including summer term) or longer must gain readmission to the university prior to applying for graduation. It is the student's responsibility to apply with enough time for the readmission process to be finalized by the census date.

Business School

A senior audit is completed on all students who have completed 90 or more semester hours. Students must file an undergraduate candidacy form prior to registering for their final semester. Failure to do so will delay graduation.

Students must complete the online intent to graduate form on their student portal when they register for their last semester.

School of Education and Human Development

All students MUST meet with their advisor at the beginning of their final term for a graduation check-out appointment. We recommend students schedule an appointment PRIOR to the add/drop deadline of their final term in case schedule adjustments need to be made to fulfill final degree requirements. After meeting with their advisor, students should apply for graduation online through the UCDAccess portal before the graduation application deadline.

College Of Engineering, Design and Computing

When a student in the College of Engineering, Design and Computing is within 30 hours of completing his or her degree, an appointment should be scheduled with a faculty advisor to perform a 30-hour check. The 30-hour check is required before the student may graduate.

In addition to the above requirement, all students in the College of Engineering, Design and Computing must also meet with their department's faculty advisor in the semester prior to the semester in which they wish to apply for graduation to ensure all academic and administrative requirements are met. Failure to do so may interfere with a student's ability to graduate.

Failure to understand and follow the policies, procedures, dates and deadlines of the CU Denver campus and the College of Engineering, Design and Computing may obstruct a student's ability to graduate and is solely the responsibility of the student.

Class Rank

Class rank will be calculated by undergraduate degree program within a school or college. It is possible for more than one student to have the same class rank. If more than one student has equivalent class ranking it will be reported as such. The option for a letter indicating the student's class rank will be provided to any graduating undergraduate, but there will be no designation on the University of Colorado transcript for Denver Campus students receiving bachelor's degrees. There will be one class rank per student per degree. Students can obtain class rank letters through the student

portal. Late postings and grade changes after degrees are posted will not recalculate rankings. Rankings will be a snapshot calculation conducted once per term for each graduating undergraduate student after degrees are posted.

Commencement Ceremony

In early March, informational brochures will be mailed to students eligible to participate in the May spring-semester commencement. In early October, information regarding the December commencement will be mailed to students who graduated in summer term or expect to graduate in fall term. Information will be provided about ordering special display diplomas, fittings for caps and gowns and obtaining diplomas and transcripts with the degree recorded. This information is also available at www.ucdenver.edu/student-services/graduation/Pages/Graduation.aspx.

Four-Year Graduation Guarantee

The University of Colorado Denver has adopted a set of guidelines to define the conditions under which an undergraduate student will be guaranteed to graduate in four years. More information is available through the undergraduate advising offices for each college and the major program offices. The Denver Campus has five undergraduate colleges in which this guarantee applies: College of Arts & Media, Business School, College of Engineering, Design and Computing, College of Liberal Arts and Sciences and School of Public Affairs.

CU Denver guarantees that if a student begins studies in a fall semester and lack of scheduling of essential courses is found to have prevented a student from completing all course work necessary for a BA, BFA or BS degree from the university by the end of the student's eighth consecutive fall and spring semester, the college/school shall provide tuition plus any course fees for all courses required for completion of the degree requirements. This applies only when needed courses are not offered by the college/school and does not apply to scheduling conflicts for individual students. Students must satisfy all the requirements described below to be eligible for this guarantee.

This guarantee applies to all students who enroll beginning in a fall term as first-semester, full-time freshmen without admission deficiencies, who do not need remedial course work and who satisfy all the requirements described below. This guarantee does not include completion of all options within the major, a second major, a double degree, a minor or a certificate program. The four-year graduation guarantee does not apply to programs in which the degree has been discontinued or is in the process of being phased out. In these cases, every effort will be made to allow students to fulfill requirements by taking courses at other universities and colleges to facilitate timely completion of the degree.

Some study abroad programs may not provide a sufficient range of courses to allow students to meet the requirements, thus, students who participate in study abroad programs during the fall or spring semesters may not be eligible for this guarantee. A student may be able to participate in a study abroad program during the summer semester and still meet all the requirements of this guarantee. It is essential that a student work closely with an advisor to determine if the student can participate in a study abroad program and still meet all the requirements of this guarantee.

Requirements

Students must satisfy all of the following requirements to be eligible for this guarantee.

1. Students must begin studies in a fall semester and enroll in CU Denver course work as specified on the student plan of study for eight consecutive fall and spring semesters.
2. Students must complete all required course work by the end of the eighth semester.
3. No fewer than 60 semester hours of applicable course work must be completed successfully by the end of the second year (24 calendar months); 90 semester hours by the end of the third year (36 calendar months); and 120 semester hours by the end of the fourth year (48 calendar months). Students must successfully complete an average of 15 semester hours each semester.
4. Students must meet with their college advisor and their major advisor for academic advising during the first, third, fifth and seventh semesters of study.
5. The major must be declared no later than the end of the first semester of study and students must not change their major or any options within the major.
6. A required plan of study toward the major must be agreed upon and signed by the student and advisor at the end of the first semester. Thereafter students must make satisfactory progress toward completing the major, as defined by each major, and the general education requirements. Courses with certain grades may not meet the satisfactory progress requirement of this guarantee. A statement of what constitutes satisfactory progress and what grades are acceptable is available from the major or departmental office at the time the major is declared.
7. A minimum of 30 semester hours of college general education courses should be completed by the end of the second year, including core curriculum courses that also meet major requirements and foreign language proficiency.
8. All lower-division graduation requirements must be successfully completed by the 90-semester-hour mark.
9. Students must remain in good academic standing according to their school/college academic policies.
10. Grades of C-, C or C+, as defined by the college/school, must be earned in all course work required for the major, and students must have a cumulative GPA of 2.000 in all major course work attempted.
11. Students must register each semester within one week of the student's specified eligibility to register.
12. Students must take courses that are specified in the student plan of study approved by their advisor.

13. Elective courses must be avoided if they conflict with required major or general education courses. Elective courses must not be given a higher priority than required courses.
14. Students must meet all departmental, school or college and university policies regarding graduation requirements.
15. The college/school must be notified in writing of the student's intent to graduate no later than the beginning of the seventh semester of study. A graduation application must be filed no later than the deadline for the appropriate graduation date. The student must complete a graduation checkout/senior audit with their advisor.

The student is responsible for and must keep documentation proving that these requirements were satisfied (e.g., records of advising meetings attended, advising records and instructions, etc.).

General Graduation Requirements

To receive a bachelor's degree from the University of Colorado Denver, students must satisfy all of the requirements below, in addition to completing a Major and fulfilling all of their School or College requirements.

Please note that the requirements below are basic university requirements. Consult your School/College and Major to determine whether they have put additional requirements in place that further restrict these categories.

- A minimum of 120 credit hours is required to graduate from CU Denver with a bachelor's level degree
- A minimum 2.000 cumulative GPA is required for all University of Colorado coursework
- Satisfactory completion of the CU Denver Core Curriculum (an 11 course, 34-38 semester hour curriculum of general education, outlined here)

Repeat Statement

Though students may take any course more than once, credit toward graduation is counted only once for a typical course, unless otherwise noted in the course description. Some types of courses (e.g. Internships, Independent Studies, etc.) may be repeatable for applicable credit within a certain range of total semester hours. See course descriptions for the max semester hours applicable from each course.

Residency Requirement

The Higher Learning Commission (HLC), which accredits this university, requires that at least 30 of the 120 credits earned for a baccalaureate degree be taken in residence at the University of Colorado Denver. Students are advised that individual schools/colleges may have higher residency requirements.

Petitioning for Exceptions to Standing Academic Policy

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students are required to complete the College of Arts & Media (CAM) general course requirements (including Core requirements) that were in effect when they began as degree-seeking students at CU Denver, and major requirements as outlined when they declared their degree, major and emphasis and were admitted to the program. If a program revises its curriculum, students have the option of following their original degree requirements or the revised curriculum. Courses under the original requirements may no longer be taught or may not be available for a set duration. In this case, the department faculty will approve reasonable course substitutions.

Course substitutions in the major or minor must be approved by the designated program director in the specific program area, the department chair and/or possibly the associate dean. Course substitutions in the CAM Core requirements must be approved by the university Core Curriculum Oversight Committee through a petition process. Please contact CAMadvising@ucdenver.edu for additional information.

The CAM Academic Policies, Procedures and Curriculum Committee is the appellate committee for all student-related academic petitions, issues and appeals. The committee is responsible for the evaluation and interpretation of the approved academic policies of the college. Questions about interpretations of policies may be directed to CAM Advising and Student Services. Procedures and petition guidelines are available at the CAM website or by emailing CAMadvising@ucdenver.edu.

Business School

Students should contact a staff advisor in the Business School's programs office (undergraduates call 303-315-8110) for appeal and petition procedures pertaining to rules and regulations of the school.

School of Education and Human Development

Students are required to complete the degree requirements that were in effect when they began as a degree-seeking student at CU Denver, including CU Denver Core, major, and track requirements. If a program revises its curriculum, students have the option of following their original degree requirements or the revised curriculum. Courses under the original requirements may no longer be taught or may not be available for a set duration. In this case, the program will approve course substitutions.

Course substitutions in the major or minor must be approved by the program leader in the specific program area. Course substitutions in the SEHD major must be approved by the Program Leader.

The SEHD Student Committee reviews students' academic appeals regarding retention, disenrollment, dismissal and other academic matters such as grade appeal, academic dishonesty, or honor code issues. Instruction on how to submit an appeal can be found

at

<http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/CurrentStudents/Resources/Pages/CurrentResources.aspx>.

College of Liberal Arts and Sciences

The CLAS Academic Standards Committee is responsible for the administration of the academic policies of the college as established by the faculty. This committee constitutes the bridge between the faculty in its legislative capacity and the students upon whom the legislation comes to bear. The committee is empowered to grant waivers of exemptions from and exceptions to the academic policies of the college. Students wishing to submit a petition to the committee should meet with an advisor in the CLAS Academic Advising Office first to discuss the petition. The Graduate Council reviews grievances related to procedural issues for graduate students that cannot be resolved at the college level.

Students in the College of Liberal Arts and Sciences may appeal a grade. Every attempt is made to resolve grade disputes at the department level. However, unresolved grade issues may be appealed to the CLAS Academic Standards Committee and initiated through the CLAS Academic Advising Office, North Classroom, 4002, 303-556-2555. Details of the grade appeal policies are available in the CLAS Academic Advising Office.

Selection of Catalog for Degree Requirements

When a student is matriculated and enrolled at CU Denver, they are required to fulfill the general education and graduation requirements specified in the catalog current at that time. When students formally declare a major, they are required to fulfill the major requirements in the catalog current at that time.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students who switch majors (e.g., BS in Music to BFA in Film & Television) are required to complete the major curriculum in place when they declare their new degree or major. Students who switch degrees within the same major (e.g., BFA in Fine Arts to BA in Fine Arts) will be required to complete the degree curriculum that is in place when they declare their new degree. Students who switch emphases within a degree and major will be required to complete the emphasis curriculum that is in place when they are accepted into the new emphasis.

Due to the dynamic nature of the College of Arts & Media programs, returning students who have not attended in more than five years must complete their programs based on the current curriculum and policies.

READMISSION REQUIREMENTS FOR FORMER STUDENTS

Readmission School/College Specific Policy

College of Arts & Media

All students who have not registered and attended classes at the university for one calendar year (three consecutive semesters, including summer term) or longer must apply for readmission through the CU Denver Office of Admissions. Former music majors who have not registered at the university for three consecutive semesters (**not** including summers) may need to re-apply to the Department of Music & Entertainment Industry Studies. Contact CAM@ucdenver.edu for more details.

Due to the dynamic nature of College of Arts & Media programs, returning students who have not attended in more than five years must complete their programs based on the current curriculum and policies.

Business School

For students newly admitted to the Business School and former business students readmitted to the school after an absence of three semesters, applicable credits up to five years old will be counted toward business degree requirements. Courses more than eight years old will be evaluated individually for their current relevance to the degree program. Students may be required to update their knowledge by taking additional courses when past courses are outdated. Generally, business courses more than 8 years old will not apply toward degree credit.

A University of Colorado student from another campus, or a Denver campus student who has not registered for three consecutive semesters (summers included), is considered a former student and must reapply for admission. Former Denver campus business degree students will be automatically readmitted to the school for up to three years from the semester they last attended if they are in good standing (not on probation or suspension) in the school. Students who have not attended for more than three years, or who have completed the equivalent of 12 or more semester hours at another institution of higher education, must meet the admission and degree requirements applicable at the time they reapply.

School of Education and Human Development

All SEHD students who have not registered and attended classes on the Denver Campus for one calendar year (3 consecutive semesters, including summer) or longer must reapply for admission to the Office of Admissions. Students must be in good academic standing to be eligible to gain readmission. Students not in good academic standing will be reviewed on a case-by-case basis.

College of Liberal Arts & Sciences

Students who have attended the University of Colorado, Denver and have been admitted to the College of Liberal Arts and Sciences, but never registered and attended or have not registered for and attended classes on the Denver Campus for one year or longer (3 consecutive semesters, including summer), must reapply for admission through the Office of Admissions (per University policy). Students who are in good academic standing are eligible to gain readmission to the college, but students who are

not must follow the academic probation and suspension policies before they can be readmitted.

This policy applies to any student who meets all of the following criteria:

- Is a former degree-seeking CU Denver campus student,
- Is a former declared CLAS student, and
- Has not completed any transfer coursework since leaving CU Denver.

Once the university has readmitted a student, the following guidelines will help to determine the academic requirements and catalog that a student will follow to complete their academic program. These policies apply to all degree granting programs in the College of Liberal Arts and Sciences, including graduate programs, undergraduate majors, undergraduate minors, certificates (graduate, undergraduate and non-degree seeking), unless other program-specific policies are established and explicitly stated in the academic catalog under the academic program requirements. Students should always meet with both their CLAS advisor and program advisor(s) as soon as they are readmitted to make sure that they know what catalog and degree requirements that they must follow. Advisors will make sure that credits are applied to a student's specific degree requirements according to the best fit, and will work with the appropriate graduation certification team to make sure that the student's degree audit (when available) is accurate.

All students are responsible for requisite knowledge for courses with prerequisites. A student may have taken prerequisite coursework, but either because they have been away from the subject matter for any amount of time or because there have been new developments in the discipline in the intervening time may lack some of this requisite knowledge. Students may substantially benefit from retaking prerequisite coursework, though they will not receive duplicate credit for courses that have been taken previously and only one iteration of the course will apply toward fulfilling degree requirements.

If a student has completed a minimum of 60 credit hours that are applicable toward a degree, or the equivalent of half the coursework applicable toward the degree through their last active term, the college will allow the student to choose to either

- follow the college requirements established in the academic catalog from the admit term of their most recent matriculation, provided that the courses and curriculum are still offered, or
- follow the college requirements established in the academic catalog under their new admit term.

If a student has completed a minimum of half the coursework applicable toward a major, minor, or certificate program through their last active term, the major department will allow the student to choose to either

- follow the program requirements established in the academic catalog from the admit term of their most recent matriculation, provided that the courses and curriculum are still offered, or
- follow the program requirements established in the academic catalog under their new admit term.

Students must meet with their CLAS and departmental advisors when they are readmitted to determine which of these options are available.

If a student has completed less than 60 credit hours that are applicable toward a degree, or less than the equivalent of half the coursework applicable toward the degree through their last active term, the college requires the student to follow the college and program requirements established in the academic catalog under their new admit term.

Any exceptions to this policy will be reviewed by the Academic Standards Committee and approved by the appropriate Associate/Assistant Dean.

Students Returning Who Are in Good Standing

CU Denver students who have not registered and attended classes on the Denver Campus for one year or longer and who have not attended another institution since the University of Colorado are considered returning students and must formally apply for readmission. An additional application fee is only required if changing from undergraduate to graduate or non-degree to degree status or if a degree was earned and the student is applying for a second degree. Students applying for readmission may complete an online application (preferred) or download an application form at www.ucdenver.edu/admissions. If applying online and a fee is not required, students should indicate "pay by check" when prompted for application fee payment. The fee requirement is then removed during application processing. A paper application may also be requested by calling 303-556-2704 or by email at admissions@ucdenver.edu.

Students Returning Who Are Not in Good Academic Standing

Students on Suspension

During the one-year academic suspension period, students who wish to return to the university should consider one (or both) of the following actions:

- Attend another regionally-accredited college/university.
 - Students who choose to attend another institution while on academic suspension can take as many or as few credits as they choose, but must earn a 2.750 cumulative GPA in all transferable course work.
 - Students should consult their academic advisor to discuss appropriate course work.

Students should use the time off to directly address and resolve the factors that contributed to the academic difficulty.

After the one-year suspension period has elapsed, students must petition the appellate committee (of the school or college they wish to enter) for readmission and meet and document at least one of the following criteria:

- Attendance at another regionally accredited college/university where they earned a minimum cumulative GPA of 2.750 in transferable credit.
- Explanation of their previous academic difficulty, demonstration of what has changed and how this will allow them to now achieve and maintain good academic standing (including a semester GPA of at least 2.300 and a cumulative GPA of at least a 2.000).

Students who choose to petition their college's appellate committee for re-admission must submit their petitions by the following deadlines:

- For fall admission: June 1
- For spring admission: December 1
- For Maymester/summer admission: April 1

If a student is granted readmission and his/her CU GPA is below a 2.0, s/he will be re-admitted ***on restricted academic probation***. These students must meet the condition of restricted academic probation every semester until their cumulative CU GPA is at least a 2.000.

Students Who Have Attended another College or Institution

Students who have attended another college or university since last attending the University of Colorado must apply as transfer students and meet the admission criteria and transfer student deadlines for receipt of documents. This requires payment of the \$50 (subject to change) nonrefundable application fee and submission of one official transcript from each college or university attended since last enrollment at CU Denver. Transcripts must be sent directly from the issuing institution to:

Office of Admissions
University of Colorado Denver
Campus Box 167
P. O. Box 173364
Denver, CO 80217-3364

Students Who Last Attended another University of Colorado Institution

Students who last attended another University of Colorado campus as a degree-seeking student must formally apply for admission and meet the admission criteria of CU Denver. An application fee is not required unless going from undergraduate to graduate

status, from non-degree to degree status or if a degree was earned. Students may apply online (preferred) or download a paper application at www.ucdenver.edu/admissions. If applying online, students should indicate “pay by check” when prompted for application fee payment. The fee requirement is then removed during application processing. A paper application may also be requested by calling 303-556-2704 or by e-mail at admissions@ucdenver.edu. University of Colorado transcripts are not required, but official transcripts from each college or university attended prior to enrollment at the University of Colorado must be submitted.

REGISTRATION

Academic Calendar

Consult the official CU Denver Academic Calendar to determine when registration will open and close for each term. CU Denver academic calendars for upcoming semesters can be found on the Registrar’s Office webpage.

Add/Drop Deadlines

Please review the current term’s academic calendar for the most recent add/drop deadlines by visiting the Registrar’s website at www.ucdenver.edu/registrar.

Adding a Course

From your registration time assignment to the published Add deadline, you are able to add classes through UCDAccess. If a class is closed/full, you can add your name to the waitlist (if available) through this date. See the Waitlist Policy for more information.

To add a class after the published Add Deadline date to census date, you will need to obtain the instructor’s permission by completing the Late Add form.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

College of Arts & Media (CAM) policy states that students who miss the first two class sessions of any CAM course can be administratively dropped. Likewise, students may not be permitted to add any CAM course if they have missed the first two class sessions.

Business School

Students may add courses to their original schedule through the census date (first 12 days of the fall or spring semester, first eight days of summer session). Instructor

approval is required to add a course after the first week of classes. In some cases, instructors do not allow students to add their course if the student fails to attend the first week of classes. In addition, instructors may ask that a student be administratively dropped from the course for failure to attend the first week of classes.

Course Credit Limitations by School/College

SCHOOL/COLLEGE SPECIFIC POLICY

Business School

Specifically, the school will accept:

- a maximum of 6 semester hours of the theory of physical education, theory of recreation and/or theory of dance
- a maximum of 6 semester hours of approved independent study, internships, experimental studies, choir, band and/or music lessons, art lessons
- a maximum of 12 semester hours of advanced ROTC, providing the student is enrolled in the program and completes the total program

The school will not accept: activity physical education classes, recreation, workshops, orientations, dance, teaching methods, practicums and courses reviewing basic skills in computers, English composition, mathematics and chemistry.

College of Liberal Arts and Sciences

Up to 8 semester hours of activity courses in physical education will count toward the 120 hours required for the degree.

Adding a Course After Census

To add a class after census, a Schedule Adjustment Form with both the instructor's and dean's signature needs to be submitted to the Office of the Registrar. These deadlines vary for intensive, module, and off-cycle classes.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students wishing to add a full-term course after census must file a Late Add Petition with the college for review and consideration. Contact CAMadvising@ucdenver.edu for petition guidelines.

Administrative Add Policy

SCHOOL/COLLEGE SPECIFIC POLICY

College of Liberal Arts and Sciences

The College of Liberal Arts and Sciences may provide permission to a student or may add a student to a class with student and instructor permission through Census, provided the room has capacity for that student and all prerequisites have been met, or explicit exception to a prerequisite has been granted and no other circumstances are preventing the student from being eligible, i.e. course overload, time conflict or holds that prevent normal addition of a class and require additional approvals. After Census, a student must petition and obtain permission from the appropriate assistant/associate dean for this to occur, according to deadlines posted in the academic calendar.

Administrative Drop Policy

An administrative drop is processed by university officials in the registrar's office by approval of a school/college dean's office. A student may be administratively dropped from one or more classes or withdrawn from all classes for any of the following reasons:

- failure to meet certain preconditions, including but not limited to:
 - class cancellations
 - failure to meet course prerequisites
- whenever the safety of the student, faculty member or other students in a course would be jeopardized
- academic suspension, including but not limited to failure to attain or maintain a required GPA
- as a potential sanction for a violation of the code of student conduct
- disruptive behavior determined by the chair and/or associate dean or Office of Student Conduct and Community Standards to be detrimental to the progress of the course and the education of other students

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students who miss the first two class sessions of a College of Arts & Media course can be administratively dropped. Students who never attend class should not assume that they will be automatically dropped from the course. The student is responsible for dropping courses by published deadlines. Failure to do so will result in a charge of tuition and/or fees for the class and a final grade of "F".

Business School

The school reserves the right to administratively drop students who are incorrectly enrolled in business courses. Instructors also may recommend that students who fail to meet expected course attendance or course prerequisites be dropped from the course. Generally, students who are administratively dropped will not receive tuition refunds.

In some cases, failure to attend the first week of classes may result in an administrative drop from that course.

Note: Students who never attend class are not automatically dropped from the course. The student is responsible for dropping courses and failure to do so will result in a tuition charge for the class and an F grade.

College of Liberal Arts and Sciences

The College of Liberal Arts and Sciences reserves the right to administratively drop a student from a course if s/he has not met all system enforced prerequisites or met the attendance policies as stated in course syllabi, with the approval of the appropriate assistant/associate dean. The student will be notified that an administrative drop will occur prior to that action taking place. If no administrative drop occurs, the student will be held accountable for all coursework and may receive a W or a failing grade and will be financially responsible for tuition and fees, unless a request to drop is made by the student, according to academic calendar deadlines. All administrative drops must occur prior to Census so that students do not receive a W on the transcript and are not held financially responsible for full tuition, though there may be fees incurred that students are financially responsible for paying. In the case of an administrative error, students may petition to drop a course through their CLAS advisor. If approved students will be dropped from the course, will not receive a W on the transcript and will receive a tuition refund.

Outstanding Debt/Administrative Drop Policy

Students who owe a past due debt to the university in excess of \$300 will be administratively dropped from any future terms if past due amount is not paid in full before the Friday prior to the first day of classes of the next term.

Administrative Switch Policy

SCHOOL/COLLEGE SPECIFIC POLICY

College of Liberal Arts and Sciences

The College of Liberal Arts and Sciences may grant an administrative switch from one section of a course to another section of the same course, with the approval of the appropriate assistant/associate dean, waiving the \$100 drop fee, if a student has enrolled in a section of a course in error or can demonstrate circumstances beyond their control and can no longer attend the original section of the course. This is only permitted before Census date, after which time all students will be assessed a drop fee and will receive a W on the transcript for any section of a course that is dropped, regardless of whether another section of the same course is added.

Auditing

To qualify as an auditor for fall, spring or summer semester, a student must be 21 years of age or older or approved by the registrar. Auditors may not be registered for any

other University of Colorado courses during the time they are auditing. Auditors are not eligible to audit courses if they are under suspension from the university or have outstanding financial obligations to the university.

The registrar's office does not keep any record of courses audited; therefore, credit for these courses cannot be established. Auditors may attend as many courses as they wish (except those courses with laboratories or where special equipment is used), provided they have received permission from each instructor.

An auditor's card is issued by the Bursar's Office after classes begin. An auditor's card is non-refundable. Auditors, whether resident or nonresident, pay for three semester hours of resident tuition for all audited courses during the fall, spring and or summer semester for class instruction and library privileges only. Auditors do not receive student parking privileges and are not eligible for other student services. This card should be presented to the instructor upon entering the class. For more information, contact the Bursar's Office.

Lifelong Learners Program

Area residents who are 60 years of age or older may attend classes at the University of Colorado Denver on a non-credit/non-tuition basis during the fall and spring semesters. Note: Each academic department/unit may have its own policy regarding your acceptance into a specific class. Seniors may take any course (offered at CU Denver) listed in the online course schedule except: courses which require laboratory or special equipment use, computer courses, courses offered through the Division of Extended Studies, courses with additional fees, CU online courses, CU South Denver or Anschutz Medical Campus courses, and intensive and/or module courses (i.e. Maymester, 6 week, or hybrid). Acceptance in class will be determined by the instructor, based on space availability, and the previous level of education obtained by the senior citizen student. Participants may register for classes beginning the first day of class. The last day to register for a class via the Lifelong Learners program is the second Friday after classes begin. Submissions after this day will not be reviewed. A limit of two courses may be taken per semester. Note: The instructor is NOT required to review written or oral exams, or assignments.

For more information please visit the Lifelong Learners webpage.

Intercampus Enrollment with Other CU Campuses

The Intercampus Enrollment Program is open to all CU Denver degree seeking students who are currently enrolled in CU Denver courses. This program helps students fulfill degree requirements so that they may graduate in a timely manner. Students who wish to utilize this program and enroll in courses at the Boulder or Colorado Springs campus concurrently, must meet with their Academic Advisor from their School/College at the Home (Denver) Campus to confirm that the course taken at a Host Campus is

equivalent to the course needed to graduate, and to ensure that all required prerequisites/requisites are fulfilled.

Actively-enrolled CU Denver degree seeking students may be eligible for enrollment in up to two (2) courses OR six (6) credit hours, whichever is greater, at another CU campus, by submitting the Intercampus Enrollment and Policy Form to the Registrar's Office prior to the Add Deadline date of the Host Campus (Boulder/Colorado Springs). The Intercampus Enrollment and Policy Form can be obtained by accessing the CU Denver Registrar's Office website or by visiting the office in person.

Students who wish to utilize this program must meet the following requirements for eligibility:

- Must be currently enrolled in at least one (1) course at their home campus during the term in which they are seeking enrollment at CU Boulder/CU Colorado Springs.
- Students must have their Academic Advisor confirm that all requisites have been met by the student prior to enrollment in the requested Intercampus course(s).
- Courses requested through the Intercampus Enrollment Program must be Main Campus courses. Continuing Education courses are NOT eligible under any circumstance.
- Some Undergraduate & Graduate Students may be exempt from Home campus enrollment if seeking a degree in the following programs at the campus listed:
 - Applied Mathematics (PhD) - Boulder, Denver
 - Architecture & Planning, (PhD) - Boulder, Denver
 - Civil Engineering, (PhD) - Boulder, Denver
 - Computer Science (MS & PhD) - Boulder, Denver
 - Education Administration (All Careers) - Denver
 - Electrical Engineering - Boulder, Colorado Springs, Denver
 - Geography (MA) - Boulder, Colorado Springs
 - Master of Engineering - Boulder, Colorado Springs, Denver
 - Mechanical Engineering - Boulder, Denver
 - Psychology - Boulder, Colorado Springs, Denver
 - Public Affairs - Colorado Springs, Denver

Enrollment and the dropping of Intercampus Enrollment course(s) can only be performed by the student's Home Campus Registrar's Office.

Students enrolled for course(s) at a Host Campus are responsible for requesting the adding and/or dropping of courses within the host campus's deadlines, published on the Host Campus Academic Calendar.

Any questions regarding this program should be directed to the "Home Campus" Intercampus Enrollment Coordinator within the Registrar's Office.

Holds

A hold is a service indicator that prevents registering for classes and receiving an official transcript and/or diploma. A hold can be placed on a student's record for a variety of reasons that may include financial, health, academic standing, required documentation, and advising. Students can view holds in UCDAccess. These holds should be resolved in a timely manner. Students should contact the appropriate department to get these holds addressed.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Periodically, students may find a hold placed on their registration by the Office of Advising and Student Services, requiring them to meet with a College of Arts & Media (CAM) advisor prior to registering. Students can view registration holds in the Student Center of their UCDAccess accounts. As other offices may also place a hold on a student's registration, students are encouraged to resolve any registration holds through the appropriate offices prior to their registration date/time.

All incoming CAM students will be flagged with advising holds which require a meeting with an academic advisor prior to registering for their first semester of courses. New first-year students are also required to attend New Student Orientation, and transfer students may be required to participate in an orientation as well.

Students on academic probation will have a hold placed on their registration and be required to connect with an academic advisor each semester in order to add classes. Consult the Academic Standing page in this catalog for details.

Business School

Enrollment in business classes is limited to students who have been admitted to business degree programs and to other students as described in the separate undergraduate and graduate policy sections. The course registration criteria are designed to meet a number of objectives:

- to serve students in other colleges who have business-related education objectives or requirements
- to serve non-degree students who have specific career or education goals
- to assure access to business courses for students admitted into a business degree program

Refer to the student portal each term for course availability and prerequisites.

High School Postsecondary and Concurrent Enrollment

High school juniors and seniors with demonstrated academic abilities may be admitted to CU Denver with special approval for one term only. This approval may be renewed. Credit for courses taken may subsequently be applied toward a university degree program, if applicable. For more information and application instructions, contact the Office of Admissions, 303-315-2619 or admissions@ucdenver.edu.

Independent Study

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

The College of Arts & Media (CAM) has independent study policies that determine eligibility, registration and how independent study credits may apply toward bachelor's degrees. Students should consult a CAM advisor, program director, or Department chair for specific eligibility criteria and registration procedures. The number of semester hours (1, 2, or 3) to be earned for an independent study project shall be determined at the time of registration. A maximum of 12 semester hours of independent study may apply toward the bachelor's degree and cannot be used to replace existing and available courses. Enrolling in an independent study course requires dean's/advising office approval and is not guaranteed. Please contact CAMadvising@ucdenver.edu for additional information and appropriate paperwork. Independent study should be added by the census date (add/drop deadline) as noted on the academic calendar.

Business School

Junior or senior business students desiring to work beyond regular course coverage may take variable credit courses (1-3 semester hours) as non-business electives under the direction of an instructor who approves the project, but the student must have the appropriate approval before registering. A maximum of 6 semester hours may be applied toward degree requirements. A Special Processing form must be signed by the student, the instructor, the program director and the director of advising and admissions.

College of Liberal Arts and Sciences

Independent studies are faculty-mentored, individually structured courses or research or creative projects designed and scheduled outside of the standard course grid. Independent study allows for investigations beyond the structured curriculum and classroom and exploration of content material that closely relates to faculty and student interest. However, the College of Liberal Arts and Sciences does not guarantee that credit earned through an independent study will count toward graduation requirements or be accepted as transfer credits.

The CU Denver campus requires manual registration using a Special Processing Form for students participating in independent study. This form constitutes the course syllabus agreement between faculty and student. The Special Processing Form requires (1) project title, (2) short, detailed project description, including texts and practical application of skills, and (3) explicit performance or grading criteria. The faculty should separately negotiate a schedule of meetings and deadlines with the student. The form is reviewed and approved by a CLAS Associate Dean/Assistant Dean prior to student registration.

The College faculty developed the following requirements relating to student and faculty participation in independent study. Faculty seeking to waive or modify any of the policies below should work with the appropriate CLAS Associate Dean/Assistant Dean.

Student Requirements

- Enrollment as a CLAS student or, if enrolled in another major/minor, school/college, or institution, signed authorization on the Special Processing Form by the advisor/chair/dean of the originating school/college or institution prior to review by the CLAS associate or assistant dean.
- Graduate student status for 5840 (or higher), junior or senior status for 4840, sophomore status for 2840.
- Minimum GPA of 2.5 for undergraduates and 3.0 for graduate students.
- Submission of the Special Processing Form prior to the third week of a regular semester. After the third week, a petition to add is required. Summer and intensive sessions will have different deadlines.

Faculty Requirements

- CLAS tenured, tenure-track, Clinical Teaching Track, Senior Instructor, or Instructor rank.
- CLAS graduate faculty status for faculty sponsoring graduate independent study.
- Direct, not indirect, supervision by the designated CLAS faculty member.
- For instructor-rank faculty, approval by the department chair, though all untenured faculty should limit the number of independent studies and are advised to consult with the chair before taking them on.

Project Requirements

- CLAS discipline or directly discipline related content, though may be interdisciplinary.
- Unique or individually executed project content for each student.
- Not available as, or part of, a structured course offered during the same term.
- 3 student participation hours per week for each credit hour requested. Note: 4:1 ratio in summer.

Inter-Institutional Coursework at Community College of Denver

To be eligible to participate in the Inter-Institutional program between CU Denver and the Community College of Denver (CCD), there are restrictions that will apply:

- Consult your department chair, Dean, or advisor to verify that the courses apply toward your degree requirements.
- Must be a CU Denver, degree-seeking student.
- Must be enrolled in classes at CU Denver during the same term as requested enrollment at CCD.
- Apply for Admission as a non-degree seeking student and register for classes at CCD according to their published deadlines.

- Complete the Inter-Institutional Application and Registration form.
- Registration form must be approved and signed by the student's Dean's office.
- Submit the completed Inter-Institutional forms to the Registrar's office at CU Denver for approval.
- Waitlisted CCD classes are not eligible for the Inter-Institutional program.
- Online classes are not eligible for the Inter-Institutional program.
- Credit hours taken at CCD must be equal to or less than the number of enrolled credits taken at CU Denver. Enrollment credits may not exceed 9 credit hours or two full-term classes (whichever may be higher) per semester.
- CU Denver students are required to meet all CCD course prerequisites prior to registration. Tuition fees for all classes will be billed through CU Denver and payment must be made according to published deadlines.
- Enrollment credit hours at CCD through the Inter-Institutional program are not eligible for Financial Aid.
- Students must follow the CCD academic calendar concerning all deadline dates.
- Courses must be added or dropped by the published date on the Inter-Institutional form.
- It is the student's responsibility to verify all CCD deadline dates, as they are different than CU Denver's Academic Calendar deadlines.
- Any registration modifications must be submitted to both Registrar Offices at CCD and CU Denver.
- If classes are not dropped by CCD's drop deadline date, you may receive an "F" as a letter grade on your transcripts.
- At the end of the term, CU Denver students must obtain an official transcript from CCD and submit it to CU Denver Transfer Articulation for transfer credits.

Internships

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Internships provide important educational and professional experience. A maximum of 3 semester hours of internship credit per semester and 9 semester hours overall is allowed. Internship credit may not be awarded retroactively or after the student begins internship hours. Students should consult with an academic advisor about the counting of internship credits in their degree plans.

The college requires that students have the following to qualify for an internship:

- 60 completed semester hours
- Minimum of a 2.75 cumulative University of Colorado GPA

Specific academic programs may have additional eligibility requirements for an internship. Students seeking an internship should consult with the college's Office of

Advising and Student Services and the Experiential Learning Center. Additional information is available by contacting CAMadvising@ucdenver.edu. Occasionally opportunities arise mid-semester; in such cases, students must file a Special Processing Form to add the course and, depending on the date, may be required to petition the associate dean for approval to add an internship.

Business School

Internships are included in the experiential learning requirement of the undergraduate business program. To be eligible to enroll in an internship for experiential learning credit, the undergraduate student must meet the following grade and course work requirements:

- the student must be in good standing with a cumulative GPA of at least 2.750, and a GPA in the area of emphasis of at least 2.000
- the student must have completed (a) all required lower-division course work and (b) at least 21 semester hours of the business core courses

Graduate students must be admitted to the Business School, be in good standing with at least a 3.000 GPA and have completed 15 semester hours of graduate work on the Denver Campus.

Interested students should contact the Experiential Learning Center (303-556-6656) for further details about the program.

School of Education and Human Development

Internships are a large part of our work in SEHD, but have varying requirements by program. Please refer to program handbooks and materials for policies regarding internships.

College of Engineering, Design and Computing

Internships are a way for students to gain professional experience while studying at CU Denver. Many internship positions lead to permanent employment opportunities upon graduation. Contact the Experiential Learning Center at 303-315-7258 for information on the specific eligibility requirements.

College of Liberal Arts and Sciences

Undergraduate students may seek credit from an employment experience that contains academic content and is sponsored by a CLAS faculty member. Internships are helpful for career exploration early in a student's academic career or for job experience after developing academic content in the major.

Students must have a minimum 2.750 cumulative GPA in a minimum of 15 credit hours of CU Denver course work. A maximum of 12 credit hours of internship credit per semester and 12 credit hours overall can be applied toward graduation. Undergraduate students should contact the Experiential Learning Center for details about the internship contract and faculty sponsorship requirements.

Pooled Courses at Metropolitan State University of Denver

Certain courses in the College of Liberal Arts and Sciences and the College of Arts & Media at CU Denver may be taken by MSU Denver students and a number of courses at Metropolitan State University of Denver (MSU Denver) may be taken by CU Denver students. Pooled courses and restrictions/policies are listed on the Metro Pooled website each semester. Undergraduate students at the University of Colorado Denver Campus can register for pooled classes in UCDAccess using the 5-digit class number. Some restrictions apply to the pooled courses.

Proficiency Testing

Degree students may take examinations for credit. To qualify for an examination, the student must be formally working toward a degree at CU Denver, have a GPA of at least 2.000 and be currently registered. Contact the registrar's office for instructions. A nonrefundable fee is charged. Students should contact their degree advising office to determine whether the credit will apply to their degree.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

Students with sufficient experience and knowledge may contact CAMadvising@ucdenver.edu to discuss testing out of required course work. The College of Arts & Media does not waive credits or requirements; thus, if students successfully demonstrate mastery of the material (as determined by the appropriate faculty), they will be advised into substitute courses.

College of Liberal Arts and Sciences

Students with sufficient experience and knowledge may receive credit for a specific course by taking a comprehensive examination given by the faculty.

Registration

CU Denver students can register and obtain information regarding their academic and financial records by logging into their UCD Access portal.

Online registration allows the student to check the availability of specific courses prior to their registration time and to search for available courses by department, course level or meeting time. If registration in a course is denied, the reason will be specified in UCD Access.

Enrollment Appointment

An enrollment appointment is a specific time and date at which a student can register for classes through UCDAccess. This enrollment appointment is assigned to a student the semester prior to the term of registration. Students cannot enroll for classes prior to

the date and time specified. Enrollment appointment dates are based on the number of academic hours completed. Enrollment appointment times are randomly assigned in fifteen minute timeslots. Students can check the UCDAccess student portal for their specific enrollment appointment date and time. The general progression of registration will start with graduate students, 5th-year seniors, seniors, juniors, sophomore, freshman, and non-degree students. Students who register as soon as their enrollment appointment begins are more likely to find space in the courses they prefer.

Course Load/Restriction

In most cases, students wishing to take more than 18 semester hours (12 in the summer session) must have the overload approved by the dean of their college or school. Consult the individual college or school for specific guidelines as to course-load restrictions.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

Full-time Students. Undergraduate students employed less than 10 hours per week should consider registering for courses as outlined in the departmental curricula. Additional courses may be allowed when there is satisfactory evidence that the student has the capability to handle the added load. Permission to take more than 19 hours may be granted by written petition and approval of the department chair and the dean's office.

Registration for Non-Degree Seeking Students

Students who have been matriculated as Main Campus Non-Degree are eligible to enroll in classes that are offered as part of a degree program or as part of Extended Studies. Main Campus Non-Degree Seeking students can register during Open Enrollment, which begins after enrollment periods for degree-seeking students. Students who have been matriculated as Continuing and Professional Education are only eligible to enroll in Extended Studies classes. Enrollment periods for these courses vary because not all of them meet in accordance with the regular semester. Students should check with the school or department offering the Extended Studies course or program for drop/add deadlines, course details, and eligibility.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

Non-degree students may apply 12 semester hours of course work (or up to 18 if taken in one semester) toward a bachelor's degree in engineering from CU Denver. Non-degree graduate students may apply 9 semester hours of graduate-level course work toward a master's degree in engineering from CU Denver.

Registration Status

Individual students receiving financial aid may be required to complete hours in addition to those listed below. The exact requirements for financial aid will be listed in the student's financial aid award letter.

Undergraduates and non-degree graduate students:

- Full-time 12 or more semester hours
- Half-time 6 - 11.5 semester hours

Graduate degree students:

- Full-time
 - 5 or more semester hours
 - 0 semester hours as a candidate for degree
 - 1 or more semester hours of thesis or dissertation (not master's reports or thesis preparation)
- Half-time:
 - 3 - 4.5 semester hours

Notes:

Enrollment verification including full-time/part-time attendance can be certified beginning the first day of class.

Hours for calculating full-time/part-time attendance do not include interinstitutional hours, nor do they include hours on another CU campus, unless the student is enrolled through concurrent registration.

Students receiving veteran benefits should contact the Veteran Student Services manager for the definition of full-time status for summer sessions. Contact information: 303-556-2745 or vaoffice@ucdenver.edu.

Individual exceptions to the minimum graduate course-load levels are considered for financial aid purposes by the financial aid committee. Students must file a written appeal with the Office of Financial Aid.

Student Classification

Students are classified according to the number of semester hours passed:

Freshman	0-29 hours
Sophomore	30-59 hours
Junior	60-89 hours
Senior	90+ hours

All transfer students will be classified on the same basis according to their hours of credit accepted by the University of Colorado.

Waitlist Policy

If you are eligible to take a class but find that it is closed/full, you may request to be placed on a waitlist (if available) through UCDAccess. Placing your name on a waitlist does not guarantee that you will be enrolled in that class. However, waitlists have proven to be a very effective tool for students wishing to register in closed classes.

You cannot be enrolled in and/or waitlisted for classes offered at the same time. You cannot be enrolled/waitlisted for two sections of the same class (except in the case of Special Topics classes). Use the 'drop this class if enrolled' function in UCDAccess to maximize your enrollment choices.

Monitor your status on the waitlist; you will be enrolled for the class if there is space. You may attend all classes until you confirm whether or not you are officially enrolled in the class. You are responsible for the tuition if you become enrolled from the waitlist, even if you do not attend. If you do not wish to take the class, you are responsible to drop it according to the published deadlines in the Academic Calendar on the Office of the Registrar's webpage.

Waitlist Positions and Enrollment

When someone drops a closed class, the student who is next on the waitlist is automatically enrolled. Schools and colleges reserve the right to make exceptions to manage their waitlists based on unique needs and circumstances. Please check your class schedule on UCDAccess to see if you have been enrolled in the class(es).

CU Online-Waitlisted Courses

You will have access to an online class while you are on the waitlist. While you are waiting for confirmation or denial of enrollment, you may participate in a waitlisted online class as well. After the first week of class, if you have not been automatically enrolled into the class, you will be dropped. If you want to be added to a closed class, you must obtain permission from the instructor. Contact CU Online for assistance in contacting the instructor.

Dropping Waitlisted Courses

If you choose not to remain on a waitlist, drop the class as soon as possible. Or if you find that you have been enrolled in a class that you no longer want, drop the class as soon as possible.

Withdrawing From a Course

From census until the 10th week of classes, a student may withdraw from most courses using the UCDAccess Portal.

Students may be financially responsible for part or all tuition and fees for any class drops or withdrawals and drops or withdrawals may lead to adjustments to financial aid/awards packages, Department of Veteran Affairs education benefits, or other eligibility/benefits that are dependent upon enrollment status. Class drops or withdrawals may impact immigration status for international students. A W grade appears on the transcript after published deadlines. Contact the Registrar's Office with questions about class drops or withdrawals.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

After the tenth week of the semester, dropping a course requires a petition signed by the department chair and the Assistant Dean for Academic Affairs. Only under very extenuating circumstances, such as a documented medical or personal emergency, will petitions for dropping courses be approved after the tenth week of the semester.

To Withdraw from CU Denver

To withdraw from the University of Colorado Denver, students must withdraw from all courses for the semester. Through the 10th week of the semester (4th week for summer semester), students can withdraw from most classes through the UCD Access Portal. If unable to withdraw in UCDAccess, students should contact their student advisor. At the start of the 11th week (5th week for summer semester) through the Wednesday before finals week, students submit a Late Withdrawal Petition to their home college. After the Wednesday before finals week, students submit a Retroactive Withdrawal Petition to their home college. See the Academic Calendar for all withdrawal deadlines.

If the Late Withdrawal or Retroactive Withdrawal petition is approved, students are withdrawn from the courses indicated on the petition and a grade of W is recorded on their academic record. If the Late Withdrawal or Retroactive Withdrawal petition is not approved, students remain enrolled in the course.

Prior to the census date (see Academic Calendar), withdrawn classes are not recorded on the student's academic record. After census date, withdrawn courses are recorded on the student's academic record with a grade of W. A student who stops attending classes without officially withdrawing from classes will receive grades based on the work they completed in the course, according to course and college specific grading policies.

Medical Withdrawal

A student who wishes to withdraw under the Medical Withdrawal Policy must withdraw from all classes. Additionally, international students must contact their assigned International Services Specialist to discuss visa implications associated with withdrawing. Students seeking to withdraw for non-medical reasons will need to review

the withdrawal policies and procedures for their respective school or college. For more information, see The Office of Case Management.

Retroactive Drop/Withdrawal

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

After the completion of a semester, students wishing to attempt to withdraw from one or more courses in that semester must file a petition for retroactive action with the College of Arts & Media. Petitions should include documentation of circumstances that were beyond the student's control and that impacted the grade(s) and the student's ability to withdraw from the course(s) before the end of the semester. Petitions should be submitted within one year of the end of the original semester.

Contact CAMadvising@ucdenver.edu for petition guidelines. If the petition is approved, the course(s) and grade(s) of W will appear on the transcript; students remain responsible for all tuition and fees associated with the course(s).

College of Liberal Arts and Sciences

In the event of circumstances that preclude a student from attending class, it is the student's responsibility to carry out drop procedures before the end of the semester. It is against normal college policy to allow a student to drop after the completion of the semester for which grades are already posted.

Students who must stop attending one or more of the classes in which they are enrolled for a term, but who fail to properly drop, may be eligible for a retroactive drop or withdrawal. Courses must have occurred no more than seven years prior to the date of the retroactive drop/withdrawal petition to be eligible.

It is the responsibility of the student seeking a retroactive drop/withdrawal to submit a complete written petition. Detailed instructions can be obtained from the CLAS Academic Advising Office, or the Graduate School for graduate students.

College of Engineering, Design and Computing

The university specifies the date up to which students may drop a course using the online course registration and schedule adjustment system. This date usually occurs at the end of the first week of classes for that semester. After this date, students must use a Schedule Adjustment Form to add or drop courses from their schedules. This form requires the signature of the course instructor. Beyond the end of the tenth week of the semester, this form also requires the signature of the department advisor in which the student is majoring. The student's department will verify that the course being dropped is not a co-requisite to another course in which the student is enrolled that semester. If so, then the other course must also be dropped. A course withdrawal after the tenth week of the semester is at the discretion of the instructor and the student's department,

and signatures must be obtained from both. No course withdrawals will be approved after the end of the 14th week of the semester for any reason except unforeseen circumstances beyond the student's control.

A complete withdrawal from the semester requires the same Schedule Adjustment form, but it only requires the signature of the dean of the student's college and the Financial Aid Office, if applicable.

Note: The student is responsible to inform the university offices of any change in schedule that may affect enrollment requirements for items such as financial aid, scholarships, or international visas.

Student Rights

FERPA

FERPA: FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

FERPA is a federal privacy law that protects students' educational records. Under this law, students have three primary rights:

- Inspect and review their education records.
- Seek to amend incorrect education records.
- Have some control over the disclosure of information from their education record.

FERPA directory information is information contained in a student's education record that generally would not be considered harmful or an invasion of privacy if disclosed. Under current CU Denver policy, the following information is designated as directory information:

- Student name. If provided, a preferred name will be used when there is not a documented business or legal reason to provide a student's primary name. Students may also select a diploma name for graduation and commencement materials.
- Hometown (city, state).
- Campus email address.*
- Dates of attendance.
- Previous educational institutions attended.
- School/college or division of enrollment.
- Majors, minors and field of study.
- Classification level (e.g., freshman, sophomore, graduate student).
- University-recognized honors and awards.
- Degree status (e.g. expected graduation date and/or conferral dates/terms).
- Enrollment status.
- Employment related to student status (e.g. teaching assistant, resident assistant or work-study) and dates for positions held.
- Participation in officially recognized activities/sports, including height and weight of athletes.
- Photos and videos taken or maintained by the university.

*Campus email addresses are only disclosed to requestors who agree not to use them for solicitation.

Although these items are designated by CU Denver as directory information, only a limited amount of this information is routinely disclosed by CU Denver university officials. The university retains the discretion to refuse disclosure of directory information if it believes such disclosure would be an infringement on student privacy rights.

Students may ask the University not to publicly disclose directory information. Be aware, however, if you are seeking employment, the Registrar's Office cannot release your enrollment, degree status or major to anyone unless you come to the Registrar's Office with a photo ID.

Forms to prevent disclosure of directory information can be obtained at the Registrar's Office, located in the Student Commons Building, or via the Registrar's website at www.ucdenver.edu/registrar.

Information that is never released without your consent includes grades, tuition/fees owed, financial aid, etc. If you would like to give permission to someone else to have access to that information, you can submit a Release of Confidential Information Form to the Office of the Registrar. This form also must be submitted in person.

More information about FERPA can be found in the University Catalog. If you have questions regarding your rights under FERPA, please contact the Office of the Registrar.

Denver Campus:

Phone: 303-315-2600

Fax: 303-315-2550

Email: registrar@ucdenver.edu

Website: www.ucdenver.edu/registrar

Policies and Procedures

University Policies

Phone: 303-315-2724

Website: http://www.ucdenver.edu/faculty_staff/employees/policies/pages/default.aspx

The Office of Policy and Efficiency - with input from system and campus policy owners - develops, oversees and maintains the University's system wide policy-making process; facilitates the development, review, approval, and maintenance of University-wide policies.

Policies include:

- Inclusiveness and Non-Discrimination
- Anti-Violence Policy
- Sexual Harassment

- Drugs and Alcohol Policy

For further information on University Policies please contact an individual via the information above.

Campus Policies

Phone: 303-315-2102 **Email:** policy@ucdenver.edu

Website: http://www.ucdenver.edu/faculty_staff/employees/policies/Pages/default.aspx

The Campus Policy Office resides in the Provost Office. This office oversees all development, coordination, management, rescissions and archives for all CU Denver and CU Anschutz campus policies.

Policies include:

- Academic & Faculty Affairs
- Finance
- General Administration
- Human Resources
- Information Technology
- Research
- Student Affairs

For further information on campus-level policies please contact an individual via the information above.

Academic Integrity And Discipline Policies

CU Denver Campus Policy 7050, Academic Integrity, defines academic misconduct and sets forth a uniform process for handling allegations of student academic misconduct at CU Denver. As members of the CU Denver community, students are expected to know, understand, and comply with the standards of the University and to accept the responsibility to maintain the highest standards of intellectual honesty and ethical conduct in completing all forms of academic work at the university. In particular, students must refrain from academic misconduct, defined in the policy as (1) a student's use of unauthorized assistance with intent to deceive an instructor or other person who is assigned to evaluate the student's work in meeting course and degree requirements, or (2) actions that interfere with the ability of the instructor to fairly judge the work of the student or other students. Academic integrity standards assist in promoting an academically sound, fair, and respectful community. CU Denver views the Academic Integrity process set forth in this policy as a learning experience that can result in growth and personal understanding of one's responsibilities and privileges within both the CU Denver community and the greater community. All students must adhere to these standards. Students who allegedly violate these standards and commit academic misconduct will be subject to the procedures described in this policy. Academic dishonesty is academic in nature, and students are encouraged to contact their

academic advisor for details of the campus policy and procedures centered on the academic integrity policy.

Forms of Academic Dishonesty (Refer to Campus Policy 7050 for more detailed definition)

Students are expected to know, understand and comply with the ethical standards of the university. Academic dishonesty is defined as a student's use of unauthorized assistance with intent to deceive an instructor or other such people who may be assigned to evaluate the student's work in meeting course and degree requirements. Examples of academic dishonesty include, but are not limited to the following:

A. Plagiarism

Plagiarism is the use of another person's distinctive ideas or words without acknowledgment. The incorporation of another person's work into one's own requires appropriate identification, regardless of the means of appropriation.

B. Cheating

Cheating involves the possession, communication or use of information, materials, notes, study aids or other devices not authorized by the instructor in an academic exercise or communication with another person during such an exercise for the purpose of obtaining or providing unauthorized information or materials.

C. Fabrication and Falsification

Fabrication involves inventing or counterfeiting information, i.e., creating results not obtained in a study or laboratory experiment. Falsification, on the other hand, involves the deliberate alteration or changing of results to suit one's needs in an experiment or other academic or creative exercises.

D. Multiple Submissions

This is the submission of academic work for which academic credit has already been earned, when such submission is made without instructor authorization.

E. Misuse of Academic Materials

The misuse of academic materials includes but is not limited to the following: stealing or destroying library or reference materials, computer programs, another student's notes or materials or illegitimate possession of examination materials, forgery, falsification of university documents.

F. Complicity in Academic Dishonesty

Complicity involves knowingly allowing or contributing to another's academic misconduct.

School/College Specific Policy

Business School

Students are expected to conduct themselves in accordance with the highest standards of honesty and integrity. Cheating, plagiarism, illegitimate possession and disposition of

examinations, alteration, forgery, falsification of official records and similar acts or any attempt to engage in such acts are grounds for suspension or expulsion from the university. In particular, students are advised that plagiarism consists of any act involving the offering of the work of someone else as the student's own. It is recommended that students consult with the instructors as to the proper preparation of reports, papers, etc., to avoid this and similar offenses. Also, actions that disrupt the administrative process, such as misrepresentation of credentials or academic status, other forms of deception or verbal abuse of university staff are grounds for suspension or probation. All discovered acts of dishonesty must be referred to the Business School's Internal Affairs Committee.

College of Engineering, Design and Computing

Students are expected to conduct themselves in accordance with the highest standards of honesty and integrity. Cheating, plagiarism, illegitimate possession and disposition of examinations, alteration, forgery or falsification of official records and similar acts or attempts to engage in such acts are grounds for suspension or expulsion from the university.

In particular, students are advised that plagiarism consists of any act involving the offering of the work of someone else as the student's own.

The college has a Student Honor Code that all students are required to sign when they meet with their academic advisor. The code outlines the college's expectations of its students and faculty in establishing and maintaining the highest standards in academic work and is available on the college website (<http://engineering.ucdenver.edu>) under Student Services > Policies and Forms.

The college also has a committee on discipline that hears cases of alleged violations of academic ethics and recommends disciplinary action. In a case of proven academic dishonesty/misconduct, the committee may invoke penalties that may include probation, suspension or expulsion. In a case of suspension or expulsion, a distinction may be placed on a student's academic record indicating the action was due to academic dishonesty/misconduct. Students who suspect or observe violations of academic ethics should report them to their instructor, the department chair or the Office of the Dean.

In addition, there is a student Academic Honor Code at CU Denver. The code is published in a brochure available from the Office of Student Life. Information regarding all student grievance procedures may be obtained in that office.

College of Liberal Arts and Sciences

As members of the CU Denver academic community, faculty and students accept the responsibility to maintain the highest standards of intellectual honesty and ethical conduct in all forms of academic work. While most violations center around cheating or plagiarism, the CU Denver Academic Honor Code is more comprehensive and includes the following categories: plagiarism, cheating, fabrication and falsification, multiple submission, misuse of academic materials and complicity in academic dishonesty.

The CLAS Academic Ethics Committee, composed of faculty, students and staff, is charged with establishing academic ethics policies and, when necessary, evaluating ethics charges against students. Faculty and students should be familiar with the Academic Honor Code for the Denver campus (see the Academic Policies chapter) and the CLAS Academic Ethics Policies, available from the CLAS Academic Advising Office, North Classroom, 1030 and online.

Faculty who charge student(s) with a violation of the Academic Honor Code may lower a student's grade without review. If the faculty decision concerning the alleged violation affects the student's assignment or course grade, a letter to the student is required with copies to the Department Chair and the CLAS Associate Dean for Student Affairs. Students charged with an ethics violation are required to continue to participate in the class and may appeal the faculty decision to the CLAS Academic Ethics Committee. Students charged with a violation of the Academic Honor Code are encouraged to meet with an advisor in the CLAS Academic Advising Office to review their rights and obtain assistance with procedures.

Email Account

Email is an official means for communication within CU Denver. Therefore, CU Denver has the right to send communications to students/staff/faculty via email and the right to expect that those communications will be received and read in a timely fashion.

Student Bill of Rights

The University of Colorado Denver subscribes to the Student Bill of Rights as defined in HB 01-1263. Students enrolled in public institutions of higher education shall have the following rights:

- (a) Students should be able to complete their associate of arts and associate of science degree programs in no more than sixty credit hours or their baccalaureate programs in no more than one hundred twenty credit hours unless there are additional degree requirements recognized by the commission;
- (b) A student can sign a two-year or four-year graduation agreement that formalizes a plan for that student to obtain a degree in two or four years, unless there are additional degree requirements recognized by the commission;
- (c) Students have a right to clear and concise information concerning which courses must be completed successfully to complete their degrees;
- (d) Students have a right to know which courses are transferable among the state public two-year and four-year institutions of higher education;
- (e) Students, upon completion of core general education courses, regardless of the delivery method, should have those courses satisfy the core course requirements of all Colorado public institutions of higher education;
- (f) Students have a right to know if courses from one or more public higher education institutions satisfy the students' degree requirements;
- (g) A student's credit for the completion of the core requirements and core courses

shall not expire for ten years from the date of initial enrollment and shall be transferrable.

Student Code of Conduct

The following section is based in part on Regent Law 7.B.3. The behaviors listed below are prohibited, as are attempts to commit, aid, abet, or incite others to engage in behavior prohibited by the code of student conduct. All behaviors contained in this code of conduct are subject to the conduct process. Engaging in retaliatory acts against a person who reports an alleged violation of the code or testifies, assists, or participates in a conduct proceeding or investigation is a violation of this code.

1. Assaulting or physically abusing another person or being involved in brawling.
 - In the case of a student who is found responsible via the conduct process to have caused severe injury or bodily harm, the minimum sanction shall be suspension. Severe injury and bodily harm include but is not limited to the following: broken bones, concussions, lacerations, etc.
2. Threatening or endangering the mental and/or physical health or safety of a person.
3. Public Exposure: Public exposure includes deliberately and publicly exposing one's intimate body parts, public urination, defecation, and public sex acts.
4. Non-Gender/Sex-Based Stalking: Means directly or indirectly through another person, repeatedly following, approaching, contacting, placing under surveillance or making any form of communication with another person, a member of that person's immediate family or someone with whom that person has or has had a continuing relationship, whether or not a conversation ensues in a manner that would cause a reasonable person to, (a) fear for his or her safety or the safety of others or; (b) suffer substantial emotional distress, including causing a person to respond by altering their activities.
5. Hazing: Any action or situation that recklessly or intentionally endangers the health, safety, or welfare of an individual for the purpose of initiation, participation, admission into or affiliation with any organization at the university. Hazing includes, but is not limited to, any abuse of a mental or physical nature, forced consumption of any food, liquor, drugs, or substances, or any forced physical activity that could adversely affect the health or safety of an individual. Hazing also includes any activity that would subject the individual to embarrassment or humiliation, the willingness of the participant in such activity notwithstanding. (See Appendix 5)
6. Abusive Behavior, including verbal abuse, threats, intimidation, coercion, or other behavior which has caused a person substantial emotional distress and where the circumstances would cause a reasonable person to suffer substantial emotional distress
 - This policy should not be construed, and will not be enacted, to deny any student the right of free speech and expression.
7. Bullying: Severe aggressive behavior likely to intimidate or intentionally harm, control, or diminish another person, physically or mentally (that is not speech or behavior otherwise protected by the First Amendment)

- Cyber-Bullying occurs when an individual is tormented, threatened, harassed, humiliated, embarrassed, or otherwise targeted by another person using the internet, interactive and digital technologies or mobile phones.
8. Violating any federal, state, or local law or university regulation or policy. University policies may include but are not limited to:
 - Nondiscrimination Procedures
 - Ethical Use of Computing Policy
 9. Interference, Obstruction, or Disruption of University Activity: Materially and substantially interfering with, obstructing, or disrupting a university activity.
 - University activities include, but are not limited to, all normal university activities, such as teaching, research, recreation, meetings, public events, and disciplinary proceedings.
 - This prohibition includes, but is not limited to, the following: behavior disruptive of university functions; Behavior resulting in injury to persons or damage to property on the campus; and interference, obstruction, or disruption of the freedom of movement of students, or other members of the university community and their guests. Interference in any manner with the public or private rights of citizens, Behavior that threatens or endangers the health or safety of any person, and damage to property are prohibited.
 10. Interfering with, obstructing, or disrupting police or fire responses. This prohibition includes, but is not limited to:
 - Resisting arrest.
 - Failing to abide by the directions of a peace officer.
 - Tampering with, impairing, disabling, or misusing fire protection systems such as smoke detectors, fire extinguishers, sprinklers, or alarms.
 - Failing to evacuate during a fire alarm.
 - Arson/setting fires.
 11. Failing to comply with the direction of university and Campus Village employees who are performing their duties. Students are required to comply with instructions or directions given by university and Campus Village employees.
 12. Knowingly providing false information to university employees, student conduct educators, or peace officers in performance of their duties. This section prohibits the use of false identification or the identification of another person to gain entrance to a facility or business. This also includes forging, altering, falsifying or misusing documents or records, or knowingly using/possessing forged, altered or false documents or records.
 13. Retaliating against or discouraging an individual from participating in a University process, or acting in any way that would improperly influence a university conduct process.
 14. Violating any policy or procedure listed in the Campus Village Apartments Resident Handbook while in Campus Village. See a complete list of Campus Village policies and procedures by [clicking here](#).
 15. Unauthorized entry into, exit from, or presence in a University facility or on university property, including Campus Village Apartments, or property belonging to another.
 16. Damaging University property or property belonging to another.

17. Engaging in, inciting, or arming someone for a riot or public disturbance (see Appendix 4)
18. Use of an electronic or other device to make an audio and/or visual recording of another person (including, but not limited to photographing, videotaping, filming, or audio recording) without the person's expressed permission when such recording causes the person to suffer substantial emotional distress and would cause a reasonable person to suffer substantial emotional distress. The storing, sharing, and/or distribution of such records by any means is also prohibited.
19. Possessing firearms, explosives, fireworks, incendiary devices, ammunition, or other weapons on campus except as permitted by law. "Weapon" as used in this provision may be an instrument of offensive or defensive combat; anything used, or designed to be used, in destroying, defeating, or injuring a person; an instrumentality designed or likely to produce bodily harm. A weapon may include, but not be limited to, the following: any firearm, slingshot, cross-knuckles, knuckles of lead, brass or other metal, any bowie knife, dirk, dagger or similar knife, or any knife having the appearance of a pocket knife, the blade of which can be opened by a flick of a button, pressure on the handle or other mechanical contrivance. A harmless instrument designed to look like a firearm, explosive, or dangerous weapon which is used by or is in the possession of a person with the intent to cause fear in or assault to another person is expressly included within the meaning of weapon. See Regents Policy 14.

Note: Students, faculty, and staff possessing valid Concealed Handgun Permits are allowed to carry concealed handguns on campus in accordance with the law.

20. Theft, including but not limited to, possessing property known to be stolen, or taking property of another without permission, even with an intent to return the property.
21. Possessing, using, providing, manufacturing, distributing, or selling drugs or drug paraphernalia in violation of law or University policies. Use or possession of marijuana, including medical marijuana used or possessed under Colorado Constitution Article 18, section 14, is strictly prohibited on campus. Any such use or possession is a violation of the student conduct code.

In addition, the state constitutional amendment authorizing individuals over the age of 21 to recreationally use marijuana ("Amendment 64") does not change this prohibition or authorize a student to use marijuana. Federal law, including the Drug Free Schools Act, prohibits the presence or use of drugs, including marijuana. Thus marijuana use or possession, even if in compliance with Amendment 64, is prohibited on campus.

- Students may violate the student code of conduct if in the presence of prohibited behavior involving drugs. This includes students who knew, or reasonably should have known they were in the presence of drugs, or possessed, displayed, or was in the presence of drug paraphernalia.
- Misuse of legal substances; use of general products as intoxicants or "means to get high"; and inhaling or ingesting a substance (including but not limited to nitrous oxide, glue, paint, gasoline, solvent, etc.) other than in connection with its intended purpose is also prohibited.
- Driving while under the influence of drugs

- Use of a prescription drug other than by the person to whom the drug is prescribed and in accordance with the prescription is prohibited. This includes sharing drugs such as Ritalin or Adderall.
 - Attending classes or university functions under the influence of drugs shall also be considered a violation of this code. This includes disruptive Behavior while under the influence of alcohol at official university functions.
22. Possessing, using, providing, manufacturing, distributing, or selling alcoholic beverages in violation of law or university policies.
- If an underage student is in Campus Village Apartments, this prohibition includes a student who knew, or reasonably should have known they were in the presence of alcoholic beverages, or possessed, displayed, or was in the presence of alcohol containers.
 - Attending classes or university functions under the influence of alcohol shall also be considered a violation of this code. This includes disruptive behavior while under the influence of alcohol at official university functions where alcohol is served.
 - Driving while under the influence of alcohol.

The health and safety of members of the University of Colorado Denver is the primary concerns of the university. The university is committed to ensuring that students obtain timely medical assistance for themselves and for their peers. To this end, we have instituted a “Good Samaritan” provision for drug, alcohol, and Intimate Partner violence related incidents. For more information about this provision please see Appendix 2.

The complete Code of Conduct, including a detailed explanation of the conduct process and sanctions, can be found online on the Student Conduct and Community Standards website.

You can also visit the Student Conduct and Community Standards office in the Tivoli Student Union Room 309.

TRANSFER CREDIT

Advanced Placement (AP) Program

The Advanced Placement Program of the College Entrance Examination Board (CEEB) allows students to take advanced work while in high school and then be examined for credit at the college level. Students who take advanced placement courses and subsequently receive scores of 3, 4 or 5 on the CEEB Advanced Placement Examination are generally given college credit for lower-level courses in which they have demonstrated proficiency. Refer to the following chart for general information and consult with your advisor to determine how the credit can be applied to your specific degree program. Original, official score reports must be submitted to the Office of Admissions for credit award consideration.

This chart represents academic credit for students admitted to the University of Colorado Denver beginning fall 2016. Students admitted prior to fall 2016 should consult the University Catalog corresponding to the year in which the exam was taken.

Advanced Placement (AP) Chart

International Baccalaureate (IB) Diploma Program

The International Baccalaureate Diploma Program (IB), available at select high schools, is a rigorous, pre-university course of study emphasizing liberal arts from an international perspective.

In accordance with HB 03-1108, CU Denver will grant at minimum 24 semester hours of credit for any student who has graduated from high school having successfully completed an International Baccalaureate diploma program with a minimum score of 4 on each exam. Credit may be granted for individual IB courses where examinations are completed with at least a score of 4 for students who do not complete an IB diploma program. Refer to the following chart for general information and consult with your advisor to determine how the credit can be applied to your specific degree program. Original, official IB transcripts with exam scores must be submitted to the Office of Admissions for credit award consideration.

This chart represents academic credit for students admitted to the University of Colorado Denver beginning fall 2016. Students admitted prior to fall 2016 should consult the University Catalog corresponding to the year in which the exam was taken.

International Baccalaureate (IB) Chart

College-Level Examination Program (CLEP)

Incoming students may earn university credit by examination in some subject areas in which they have demonstrated college-level proficiency. Interested students may take approved examinations through the College-Level Examination Program (CLEP) of the College Entrance Examination Board (CEEB) testing service.

Acceptable CLEP examinations and credit awards are outlined in the following chart. Original, official CLEP score reports must be submitted to the Office of Admissions for credit award consideration.

This chart represents credit awarded for exams taken from August 2019 and later. For exams taken in prior or future catalog years, consult those academic catalogs for exam equivalency information.

Select CLEP Exams taken January 2019 and later will receive gtPathways credit.

Transfer of CLEP (College Level Examination Program) gtPathways

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

Students may earn credit through certain College-Level Examination Program (CLEP) examinations, provided that they score at the 50th percentile or above. CLEP credit may be applied toward graduation if comparable to CU Denver coursework included in the College of Engineering curriculum. Official CLEP score reports are required for transfer credit consideration.

College of Liberal Arts and Sciences

The use of CLEP subject examinations toward major, minor or certificate requirements is subject to a separate evaluation by the faculty advisor in the department or program. To receive academic credit from CLEP, students must present official test results to the Denver Campus Office of Admissions. A maximum of 30 hours of CLEP credit will count toward the degree.

Cambridge A-Levels

Incoming students may earn credit from the Cambridge A-Level examinations. Cambridge A-Levels are internationally benchmarked qualifications providing excellent preparation for university education. They are taken in over 125 countries and offer a wide variety of different subjects. Cambridge International A-Level qualifications are widely recognized and valued by universities and employers alike. CU Denver does not recognize AS-Levels currently. The acceptable A-Level examinations and credit awards are outlined in the chart linked below. Original, official A-Level score reports must be submitted to International Admissions for credit award consideration.

This chart represents credit awarded for exams taken during the 2018-2019 catalog year. For exams taken in prior or future catalog years, consult those academic catalogs for exam equivalency information.

A-Level Exams

Joint Services Transcript Credit

Beginning Spring 2019, select courses and occupations from the Joint Services Transcript qualify for the Colorado gtPathways program. The courses and occupations in this chart can apply to CU Denver's Undergraduate Core Curriculum. An official copy of the Joint Service Transcript is required for evaluation.

Transfer of Joint Service Transcript Military Occupations Evaluation

Military Experience Credit

It is the policy of CU Denver to award transfer credit for military courses and/or military service based on the recommendations of the American Council on Education (ACE)'s

Guide to the Evaluation of Education Experiences in the Armed Services, provided such credit is generally applicable to CU Denver programs of study. For military transcripts such as CCAF and AARTS, transfer credit is considered on the same basis as transcripts from traditional collegiate institutions.

Upon review of the Certificate of Release of Discharge from Active Duty form (DD-214)/Member 4 Service 2 or additional documentation as required either elective or core course credit will be awarded based on ACE recommendations.

Element of Service	Course Awarded	Credit Hours Awarded	CU Denver Undergraduate Core Curriculum Category or Requirement Fulfilled
Basic Training	HUMN 1999ME	3	Humanities
Non- Commissioned Officer's Course	SSCI 1999ME	3	Social Science
Overseas Deployment of at Least 6 Months	None	None	International Perspectives (Waived of Requirement)
Military Language Training Institute	None	None	School/College Foreign Language Graduation Requirement (Waived of Requirement)
Enlisted Rank E4 or higher	None	None	Business Experiential Learning Requirement (Waived of Requirement for Business Majors Only)
Rank E4 or below	XFCR 1999ME	6	General Elective Credit
Rank E5 or higher/ More than 1 enlisted term (5+ years)	XFCR 1999ME and XFCR3999ME	12	General Elective Credit (6 lower division credits and 6 upper division credits)

The applicability of electives is determined by the student's major and/or college.

For any questions or further information regarding military credit transfer, please contact the CU Denver Veteran and Military Student Services at 303-315-7300

DSST/ DANTES Exam Credit

Beginning January 2019, incoming students may earn university credit by examination in some subject areas in which they have demonstrated college-level proficiency. Interested students may take approved examinations through the DSST/DANTES testing as a part of their Military Service

Acceptable DSST examinations and credit awards are outlined in the following chart. Original, official DSST score reports must be submitted to the Office of Admissions for credit award consideration.

Transfer of DSST/DANTES Exams

Accepted Courses for Transfer

Military Service and Schooling

To have credit for educational experiences evaluated, applicants with military experience will be required to submit the DD-214 to the Office of Veterans Student Services. Applicants should also submit the Smart Transcript and official Dantes Subject Standard Test (DSST) score reports (if applicable) to the Office of Admissions for additional credit consideration. For students with other military credit for which a separate transcript is issued, such as Community College of the Air Force (CCAF) or Army/American Council on Education Registry Transcript System (AARTS), official transcripts should be sent to the Office of Admissions.

It is the policy of CU Denver to award transfer credit for military courses and/or military service based on the recommendations of the American Council on Education (ACE)'s Guide to the Evaluation of Education Experiences in the Armed Services, provided such credit is generally applicable to CU Denver programs of study. For DSST exams, only upper-level credit as recommended by the ACE guide is considered in transfer. For military transcripts such as CCAF and AARTS, transfer credit is considered on the same basis as transcripts from traditional collegiate institutions.

Upon review of the Certificate of Release of Discharge from Active Duty form (DD-214)/Member 4 Service 2 or additional documentation as required either elective or core course credit will be awarded based on ACE recommendations.

Element of Service	Course Awarded	Credit Hours Awarded	CU Denver Undergraduate Core Curriculum Category or Requirement Fulfilled
Basic Training	HUMN 1999ME	3	Humanities
Non- Commissioned Officer's Course	SSCI 1999ME	3	Social Science
Overseas Deployment of at Least 6 Months	None	None	International Perspectives (Waived of Requirement)
Military Language Training Institute	None	None	School/College Foreign Language Graduation Requirement (Waived of Requirement)
Enlisted Rank E4 or higher	None	None	Business Experiential Learning Requirement (Waived of Requirement for Business Majors Only)
Rank E4 or below	XFCR 1999ME	6	General Elective Credit

Rank E5 or higher/ More than 1 enlisted term (5+ years)	XFCR 1999ME and XFCR3999ME	12	General Elective Credit (6 lower division credits and 6 upper division credits)
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The applicability of electives is determined by the student's major and/or college.

For any questions or further information regarding military credit transfer, please contact the CU Denver Office of Veteran Student Services at 303-556-2745 (DD-214 credit consideration).

Other University of Colorado Campus Coursework

A current CU Denver student can take courses at other University of Colorado campuses. Those campuses include Boulder and Colorado Springs. However, courses taken at another University of Colorado campus are subject to various transfer rules as stated below:

- When the course is taken, all coursework needs to be submitted to the Office of Admissions
- Courses will be calculated into the CU Denver cumulative GPA
- Course subject codes and numbering are subject to change due to the different curriculum taught at the various campuses. In other words, courses will not be transferred as equivalencies.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Architecture and Planning

BS Architecture students must have the written approval of the BS Architecture director or undergraduate academic advisor to register for courses (excluding MSUD pooled courses) offered by other institutions, including other University of Colorado locations. Credit will not be given for courses taken without approval. Grades of C or better must be earned to receive the undergraduate bachelor's degree credit. Generally, only non-architecture electives or lower-division, non-architecture requirements are acceptable for transfer from other institutions once a student has been admitted to the BS Architecture Program. Students who, after admission to the college, take more than 12 semester hours from another institution, must reapply for admission to the college as transfer students and must meet the current admission requirements.

The maximum number of credit hours applied to individual architecture major requirements from transfer coursework must not exceed the number of credit hours given to its equivalent CU Denver course. Excess credit hours from architecture-related transfer coursework will not count toward the 120 credit hours needed for the BS Architecture degree.

College of Arts & Media

Students should consult the College of Arts & Media in advance at CAM@ucdenver.edu to determine how courses from other University of Colorado campuses may complete degree requirements at CU Denver.

Business School

Business students must have the written approval of the business program director to register for courses (excluding MSCD pooled courses) offered by other institutions, including other University of Colorado locations. Credit will not be given for courses taken without approval. Grades of C- or better must be earned for most transfer credit to receive business degree credit, however, upper division business core must be a C. Generally, only nonbusiness electives or lower-division, nonbusiness requirements are acceptable for transfer from other institutions once a student has been admitted to the Business School.

1. Admitted Business School students may request by email or petition to complete Business lower division courses or 3000 level business core courses at another institution as long as:
 1. The student still meets our 30-hour residency rule (Business courses completed at CU Denver),
 2. The student still meets our 45 upper division hours rule (we count upper-division transfer credit toward this 45),
 3. The institution of choice meets our transfer agreements (AACSB, Colorado Community Colleges),
 4. The course is approved for transfer via syllabus review
2. We will not transfer in, any of our major courses, international studies, or MGMT 4500 except in rare situations by petition. If approved, the student must still meet all residency rules.

School of Education and Human Development

Students should consult with the undergraduate advisor in advance to determine how courses from other University of Colorado campuses may complete degree requirements at CU Denver.

College of Engineering, Design and Computing

Transfers between campuses of the University of Colorado should be carefully planned to avoid loss of academic credit. Courses and credits required for engineering degrees vary from campus to campus; therefore, students should plan as far ahead as possible. An advisor can help choose the right courses. Such planning should also include contacting the engineering department to which the student plans to transfer at least one semester before the transfer is planned. The transfer student must have at least a 2.000 GPA for 30 hours of credit toward an engineering degree to be eligible to transfer. A higher GPA may be required to transfer directly into the College of Engineering, Design and Computing. In general, calculus, physics and chemistry courses will transfer for full credit. In addition, 12 semester hours of humanities and social sciences electives will usually transfer for full credit. Fundamental computing courses may be unique by campus and should be checked with the campus to which the student is transferring. Any minimum academic preparation standards (MAPS) deficiencies should be eliminated before transferring.

International Coursework

Study Abroad Coursework

Current CU Denver students are encouraged to participate in the various study abroad programs offered through the Office of Global Education. Prior to leaving, you will complete a Course Approval Form with the courses you intend to take abroad and the CU Denver equivalents. An academic or major advisor will sign off on the appropriate CU Denver equivalents that relate to the course taken abroad.

Transcripts will be issued by the foreign institution. Once transcripts are received by the Office of Global Education, the Course Approval Form will be compared to the transcripts. Assuming that all courses meet the minimum transfer grade of C- or higher, the transcript will be compared to the approved courses on the Course Approval Form. Credits will be transferred to the University.

The grades and courses will not appear on the student's transcripts. Should a student fail a course, no credit will be issued, and the course will not appear on the transcript.

SCHOOL/COLLEGE SPECIFIC POLICY

Business School

Transfer credit from study abroad programs requires prior written approval from the Advising Department. Students must meet with a business staff advisor to determine course acceptability prior to the semester in which they intend to study abroad. Information on the various programs is available at the Office of International Affairs.

Courses Not Accepted for Transfer

Developmental, remedial, religious doctrinal, religious training, single religion, outdoor leadership, student orientation, internship, and cooperative education courses are not accepted in transfer. Vocational/technical courses, life experience, and work experience are not accepted in initial transfer, but exceptions may be granted by the dean responsible for the student's curriculum. Independent Study, Special Topics and other experiential learning programs that lack catalog descriptions are not accepted in initial transfer but may be reviewed for transfer consideration by the corresponding academic department. Students wishing to appeal transfer credit decisions should contact their school or college advisor. Except for developmental/remedial courses, academic departments make final decisions on transfer credit appeals.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

Credit earned from the following courses, College Algebra, College Trigonometry, or Precalculus Mathematics (CU Denver Numbers MATH1110, MATH1120, MATH1130), will not be applied to the Engineering major requirements, but may be accepted in transfer.

Courses on basic subjects such as mathematics or physics may be acceptable for direct transfer of credit if they were taught as part of an accredited program for all students and were not specifically designated for engineering technology students. Engineering technology courses (courses with technology designations) will not be considered for transfer into an engineering degree program. Students may seek credit for course work by examination.

Appeals Process

Transfer credit that was not originally accepted by the Office of the Registrar may be appealed through the student's advisor. Most commonly, a copy of the syllabus will be requested from the student to give to their advisor. If it is an international course, the syllabus will need to be in English. Once the student's petition is approved, the advisor will request that the course be accepted by the Office of the Registrar.

If a dispute cannot be resolved between the student and CU Denver, a student is at liberty to file a formal complaint with the Colorado Department of Higher Education.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

If certain courses are not initially accepted by the Office of the Registrar, the student and advisor can discuss the petition process for accepting these courses. If the student's petition is approved, the advising office will request that the Office of the Registrar accept the course(s) in transfer.

College of Engineering, Design and Computing

All requests for consideration of transfer credit and its application toward a degree must be submitted prior to the student's last two semesters at the Denver campus.

Minimum Transfer Standards

Student course work of comparable content and scope to that of CU Denver curriculum will be considered for transfer credit if it was completed at a college or university with regional accreditation. If coursework was completed at an institution not regionally accredited, the student may specifically request that credit be considered in transfer by initiating a review process which begins with the student's academic advisor. Only courses in which a grade of C- or better (1.700) was earned are considered for transfer. Courses in which a grade of Pass (P) was earned are considered for transfer only if a grade of Pass at the sending institution is defined as a C- or better. Courses identified on transcripts as State of Colorado guaranteed transfer courses (gtPathways) are always accepted in transfer (with C- or better grades) and applied to degree requirements per gtPathways guidelines.

The Office of the Registrar considers course work for general transfer regardless of the age of the academic credit. Certain departments, however, have specific age of credit

policies for applying credit to degree requirements and for meeting prerequisites. State guaranteed general education courses will be accepted in transfer and applied to graduation requirements for a period of at least 10 years after course completion as outlined in gtPathways guidelines.

Credit Hour Conversion

The University of Colorado Denver is on a 16-week fall and spring semester system. Summer terms, study abroad programs, and independent learning vary in length but are reported in semester hours. Students who transfer from a quarter-based institution will receive the following conversion:

1 quarter hour = 0.67 semester hours

Example: 4 quarter hours = 2.7 semester hours

Maximum Number of Transfer Credit Hours Accepted

SCHOOL/COLLEGE SPECIFIC POLICY

Business School

The Business School generally limits its applicability of business course credits to those that are comparable to lower-division business courses at CU Denver. Students who have taken upper-division business courses from an Association for Advancement of Collegiate Schools of Business (AACSB) accredited business program may request review of these courses for possible transfer by contacting the Business School advising office. All courses taken in their major must be completed at CU Denver. For students newly admitted to the Business School and former business students readmitted to the school after an absence of three semesters, applicable credits up to eight years old will be counted toward business degree requirements. Courses more than eight years old will be evaluated individually for their current relevance to the degree program. Students may be required to update their knowledge by taking additional courses when past courses are outdated; in such cases, credit will be given for both courses.

College of Arts & Media

College of Arts & Media (CAM) degree programs involve carefully structured sequences of course work, designed to build student knowledge, skills and dispositions toward academic, artistic and professional outcomes. Students interested in transferring to pursue a CAM degree should contact CAM advising in advance at CAMadvising@ucdenver.edu to plan out their transfer credits and subsequent University of Colorado Denver course work. As part of this discussion, CAM advisors can help students determine the best semester in which to transfer, taking into consideration each student's desired timeline toward graduation and program requirements.

College of Engineering, Design and Computing

The College of Engineering, Design and Computing, in general, requires that engineering course transfer credit must come from an Accreditation Board for Engineering and Technology (ABET) accredited engineering program to be acceptable for degree purposes. Engineering technology courses are not considered equivalent to engineering courses.

Transfer Credit Level Determination

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

College of Arts & Media (CAM) degree programs involve carefully structured sequences of course work, designed to build student knowledge, skills and dispositions toward academic, artistic and professional outcomes. Students interested in transferring to pursue a CAM degree should contact CAM advising in advance at CAMadvising@ucdenver.edu to plan out their transfer credits and subsequent University of Colorado Denver course work. As part of this discussion, CAM advisors can help students determine the best semester in which to transfer, taking into consideration each student's desired timeline toward graduation and program requirements.

College of Liberal Arts and Sciences

The general rule for determining transfer credit is that the level of credit awarded - lower-division or upper-division - will be determined by the level of the course at the sending institution. If the institution of origin listed the course as 1000 (or 100) or 2000 (or 200), or if the numbering system otherwise indicates lower-division credit, then it automatically will receive lower-division credit for fulfilling college requirements.

This rule will apply in all cases other than those where course- or student-specific exceptions have been made as described in the paragraphs below. Also, exceptions will be made on a case-by-case basis in instances where the sending institution does not use a four-level course numbering system or otherwise indicate lower-and upper-division credit distinctions.

Academic units retain the authority to determine whether an individual transfer course (taken at either upper or lower division) will count as fulfilling an upper-division major requirement. If the transfer course was taken as lower-division but is deemed to fulfill a UCD upper-division major requirement, the academic unit is additionally responsible for determining whether the course should be awarded upper-division credit toward the CLAS graduation requirement of a minimum of 45 upper-division credit hours. These are separate decisions, thus it is possible for a lower-division transfer course to fulfill an upper-division requirement in the major but not count toward the 45 upper-division hours required by CLAS. In either case, the academic unit's decision can either be applied to all future students entering with the same transfer course (this is known as course equivalency) or made on a one-time basis (this is known as a course substitution). These decisions will be made by the appropriate department chair or

undergraduate major advisor. The academic unit that owns the course prefix for the substituted course holds the authority to make these transfer determinations, even in cases where the substituted course fulfills a major requirement for a separate academic unit.

Academic units will report all course substitutions and equivalencies using the DATC Universal Form. This form requests that the approving chair or major advisor examine the course description and, if possible, the syllabus from the sending institution. When approving major credit for a transfer course taken at the lower division, the chair or major advisor should indicate whether the course should also count toward the CLAS requirement of 45 upper-division (UD) credit hours, or whether the hours should continue to be counted at the lower division (LD). The chair or major advisor should also indicate whether the determination should be applied to all future students entering UCD with the same transfer course (equivalency). This indication may result in revisions to the automated transfer-equivalency tables used for degree audit purposes. One exception made for a given course may then become the standard for all future students sending in that same course. The Advising Office will report such exceptions to the Registrar's Office for consideration of whether or not to revise the transfer equivalency tables.

Transferring to CU Denver as a New or Current Student

After all transcripts have been received, the Office of the Registrar prepares a transfer credit report, indicating which courses are accepted in general transfer by CU Denver. Students will receive this report along with their admission decision. At this time, students are encouraged to contact their academic advisor, who will determine how transferred credit applies to specific degree requirements, sometimes using automated systems and with assistance from academic departments. Academic units make all final decisions regarding application of transfer credit to degree requirements. Transfer credit evaluations are valid only for degree programs offered entirely at the Denver campus.

Courses are accepted in initial transfer and applied to graduation requirements at CU Denver at the same academic level as on the transcript from the sending institution. Transfer courses with similar content to CU Denver courses (but are listed on the transcript at a different level) may be substituted upon approval from the academic unit. Such courses, however, apply to overall requirements at the level listed by the sending institution unless an exception is granted. Only undergraduate courses are considered in transfer. Though unofficial transcripts may be used for admissions decisioning and initial transfer credit review, official transcripts must be submitted to the Office of Admissions for validation before the census date of a student's first term. Failure to do so will result in a registration hold.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Arts & Media

College of Arts & Media (CAM) degree programs involve carefully structured sequences of course work, designed to build student knowledge, skills and dispositions toward academic, artistic and professional outcomes. Students interested in transferring to

pursue a CAM degree should contact CAM advising in advance at CAMadvising@ucdenver.edu to plan out their transfer credits and subsequent University of Colorado Denver course work. As part of this discussion, CAM advisors can help students determine the best semester in which to transfer, taking into consideration each student's desired timeline toward graduation and program requirements.

College of Engineering, Design and Computing

Transfer students should make an advising appointment as soon as possible after being admitted to the college.

Students must contact the department to which they've been admitted to schedule an appointment with a faculty advisor.

To expedite the advising process, please bring a copy of your transcripts from all institutions you have attended, copies of course descriptions for any courses you wish to have considered for transfer and if possible, a syllabus for each of those courses. Only courses with a grade of C- or better will be considered for transfer credit. Pass/fail courses, internship courses, research-related courses and special topics courses will not be considered for transfer credit.

gtPathways Curriculum

The Colorado Department of Higher Education oversees the Guaranteed Transfer (gtPathways) program, which provides for guaranteed transfer, and more importantly, guaranteed application of credit toward lower-division general education credit requirements at Colorado public institutions of higher education. All gtPathways approved courses undergo statewide faculty review, and all lower division CU Denver Core courses are gtPathways approved. Please see the list of Core courses for their gtPathways content area.

Statewide Transfer Articulation Agreements

In compliance with Colorado's Statewide Transfer Policy, students may transfer credit from a Colorado community college on a course-by-course basis or by completing an associate of arts (AA) or associate of science (AS) degree. Students who complete an AA/AS degree may be guaranteed full transfer of the associate degree (60 credits maximum).

The guaranteed transfer program applies only to students who began Colorado community college studies in fall 2003 or later and who meet the following requirements:

- complete an AA/AS degree, which includes 31 credits of state-guaranteed general education courses
- earn credit only at Colorado community colleges within the last 10 years
- earn a grade of C- or better in each course

Statewide articulation agreements are in place governing transfer of students from Colorado community colleges into programs in anthropology, business, economics, elementary education teacher licensure, engineering, French, history, mathematics, political science, psychology, sociology, and Spanish.

Transfer advising plans for Colorado Community College students are available from the Office of Admissions and at www.ucdenver.edu/admissions. In addition, an admissions representative can assist students with planning a transfer program of study. Representatives regularly visit Colorado community colleges. Call the Office of Admissions at 303-315-2601 or email admissions@ucdenver.edu for additional information.

SCHOOL/COLLEGE SPECIFIC POLICY

College of Engineering, Design and Computing

The College of Engineering, Design and Computing has formal transfer agreements with all Colorado community colleges, including the following Denver metro-area community colleges:

Arapahoe Community College (Littleton)-303-794-1550

Community College of Aurora-303-360-4790

Community College of Denver-303-556-2600

Front Range Community College (Westminster)-303-466-8811

Red Rocks Community College (Lakewood)-303-988-6160

Students interested in transferring should contact the engineering department to which they plan to transfer and the respective community college counseling office at the phone number indicated above.

SCHOOLS, COLLEGES AND DEPARTMENTS

Denver Campus

With a solid academic reputation and award-winning faculty, the Denver Campus offers bachelor degree programs through seven distinct academic units.

COLLEGE OF ARCHITECTURE AND PLANNING

Dean
Nan Ellin

Associate Dean of Academic Affairs

Jody Beck

Contact:

303-315-1000
Fax: 303-315-1050
CAP@ucdenver.edu

Mailing Address:

Campus Box 126
P.O. Box 173364
Denver, CO 80217-3364

Location:

CU Denver Building
1250 14th Street, Suite 2000
Denver, CO 80202

Department Chair for Architecture: Marc Swackhamer

Telephone: 612-669-2603

Email: marc.swackhamer@ucdenver.edu

Overview

The College of Architecture and Planning offers the only accredited degrees in architecture, planning, and landscape architecture in the State of Colorado as well as the only master's degrees in historic preservation and urban design, and the only doctoral degree in design and planning. The college offers a Bachelor of Science in Architecture degree and graduate programs for over 800 students. Many students intending to enter the design and planning professions complete the college's undergraduate degree as preparation for one of our graduate-level professional programs. Those who already hold an undergraduate degree in an unrelated field are also eligible for admission into our graduate programs. With an outstanding faculty committed to excellence in teaching, research, scholarship and creative work, the college provides students with opportunities beyond the classroom including study abroad, internships, mentorships, and participation in design and planning competitions. The College of Architecture and Planning ignites evolution that enriches places for people and the planet through learning by doing, practicing co-creation, and valuing the unique spark of each person as well as the full range of professional and historical traditions.

College Facilities

The college is located at 1250 14th Street in downtown Denver, on the northeastern edge of the Auraria Campus on Larimer Square. This favorable location gives easy access both to the extensive campus facilities and the urban dynamism of Denver's lively lower downtown. Most of the major professional design offices in Denver and many planning firms and agencies are nearby, offering many opportunities for internships and mentorships between students and practitioners. College facilities include studio spaces for students, lecture and seminar rooms, design jury spaces, exhibition spaces and faculty offices. Students have access to our well-equipped and well-maintained 3,000-square-foot Design Fabrication Lab that houses a full-scale furniture-making shop, model-making tools, a large spray booth and four laser cutters. An annex adjacent to the building provides additional shop space, plasma cutters, and a 5-AXIS CNC Router. The Visual Resource Center (VRC) provides access to a variety of photographic and audiovisual equipment, two portfolio photography studio rooms, and digital image collections. There are two computer labs focused on computer aided design, computer 2-D and 3-D imaging, and analytic tools for planning. These computer labs include Windows PCs and Macs, small and large format scanners, large format plotters, laser printers and computer data projection devices. All systems are 100base T Ethernet / Internet savvy and accessible 24 hours a day in secure rooms. Find more details about college facilities on the website. Also associated with the college is a geographic information systems (GIS) computer laboratory, open to all CU Denver students.

Computing in the College

The Bachelor of Science in Architecture program suggests students acquire and use their own computers and software applications during their study. CU Denver neither endorses nor requires a student to procure a machine from a particular vendor. Students are encouraged, but not required, to procure laptops mainly for reasons of security and mobility in studios and classrooms. Software applications (program) requirements relate to specific course curricula. Consult with instructors or refer to course syllabi regarding applications for imaging, computer aided design, modeling or rendering before purchasing.

Undergraduate Information

The College of Architecture and Planning offers a Bachelor of Science in Architecture degree exclusively on the downtown Denver campus. The city of Denver provides a rich environment to explore a diverse historic and cultural world that includes multiple approaches to solving urban and regional problems. The degree is a "pre-professional" degree, which will provide fast track entry into the accredited Master of Architecture degree that is required for licensure in the profession. This degree provides an education in the sciences and humanities in design theory of the built world and its practice. The educational goal of the program is to engender active and creative making of architecture along with critical thinking skills.

Scholarships/Financial Aid

For information on scholarships, visit the college's website. For information on federal and state financial aid, contact the Office of Financial Aid, University of Colorado Denver, Campus Box 125, P.O. Box 173364, Denver, CO 80217-3364, 303-556-2886 or visit their website.

Undergraduate Advising and Academic Planning ***Admissions Advising***

Persons not yet admitted to the BS Architecture program can receive advising on course selection, admission requirements and other matters from an undergraduate staff advisor. To make an appointment, call 303-315-1000.

Admitted Students

Students admitted to the BS Architecture program are required to meet with an undergraduate academic advisor prior to registration in their first semester, as well as prior to enrolling in ARCH 3110 Design Studio II. Students are also welcome to meet with their advisor as often as needed, in addition to the required meetings. Though the student is ultimately responsible for the decisions made regarding their academic career at CU Denver, advisors are available to assist in helping students make informed decisions.

College of Architecture and Planning Courses

[Click here to see a complete list of undergraduate courses.](#)

Departments and Programs

(For Graduate Programs please refer to the Graduate catalog.)

College of Architecture and Planning

Architecture

Go to information for Architecture.

Programs

Bachelor of Science

- Architecture BS

ARCHITECTURE

Faculty

Professors:

Amir Ameri, PhD, Cornell University
Julee Herdt, MArch, Southern California Institute of Architecture
Michael K. Jenson, PhD, University of Edinburgh
Laurence K. Loftin III, MArch, University of Virginia

Marc Swackhamer, MArch, Rice University
Ekaterini Vlahos, MArch, University of Colorado Denver

Associate Professors:

Osman Attmann, PhD, Georgia Institute of Technology
Robert H. Flanagan, MArch, University of Colorado Denver
Christopher Koziol, PhD, University of Colorado Denver
Taisto H. Mäkelä, PhD, Princeton University

Assistant Professors:

Erik Sommerfeld, MArch, University of Colorado Denver
Kevin Hirth, MArch, Harvard Graduate School of Design

Matthew Shea, MArch, University of Colorado Denver

Associate Professor (Clinical Teaching Track):

Barbara Ambach, MArch, Southern California Institute of Architecture

Assistant Professors (Clinical Teaching Track):

Amir Alrubaiy, MArch, University of Colorado Denver

Senior Instructor:

Ranko Ruzic, MArch, University of Colorado Denver

Instructor:

Jo VandenBurg, MArch, University of Colorado Denver

Additional information about faculty in this department is available on the college website.

See the **Graduate Catalog** for information about graduate programs.

COLLEGE OF ARTS & MEDIA (CAM)

Dean: Laurence D. Kaptain, DMA and FRSA

Associate Dean, Academic and Student Affairs: Dane Webster, MS

Assistant Dean, Budget and Financial Systems: Karen Ludington, MBA

Contact

Dean's Office

Arts Building, Suite 177

1150 10th Street

303-315-7400

Fax: 303-315-7404

CAM@ucdenver.edu

Mailing Address:

College of Arts & Media

Campus Box 162

P.O. Box 173364

Denver, CO 80217-3364

National Center for Media Forensics:

Campus Box 154

P.O. Box 173364

Denver, CO 80217-3364

ncmf@ucdenver.edu

About the College of Arts & Media

Mission

Our mission is to effect change by preparing students to successfully pursue their passions.

Our students acquire the skills they need to excel in an academically rigorous, experiential learning environment energized by creative exchange, real-world experience and diversity of voice.

Core Values

Creative Excellence - Academic and artistic rigor, creativity and innovation are bedrock principles of the CAM community and the cornerstone of how we define excellence. As champions of creative excellence in art making and artistic expression we support risk-taking, intellectual freedom and social responsibility.

Discovery - We believe in a culture of shared discovery. Our students learn by doing, and as emerging peers, are important contributors to the knowledge exchange. We value rigorous investigation, critical thinking, diversity, collaboration and invention.

Denver - We are committed to learning both inside and outside the classroom. The accessibility, diversity and cultural energy of Denver make CAM a better place to teach, work and learn. We strive to offer reciprocal experiences to the citizens of this great city and pay it forward by extending our reach and impact in the global community.

Programs of Study

Music & Entertainment Industry Studies

- Bachelor of Science in Music Emphases:
 - Performance
 - Singer/Songwriter
 - Music Business, on one of two tracks:
 - Audition Track
 - Non-Audition Track
 - Recording Arts, on one of two tracks
 - Audition Track
 - Non-Audition Track

Film & Television

- Bachelor of Fine Arts in Film & Television with an Emphasis in Film and Television
- Minors:
 - Film and Television Production
 - Film and Television Writing
 - Theatre, Film and Television
 - Film and Television Performance

Visual Arts

- Bachelor of Fine Arts Emphases:

- 3D Graphics and Animation
- Art Practices
- Digital Design
- Illustration
- Photography
- Bachelor of Arts Emphasis:
 - Art History
- Minors:
 - Art History
 - Digital Design
 - Illustration
 - Painting and Drawing
 - Photography
 - Studio Art
 - Transmedia Sculpture

Graduate Programs

- Master of Science in Recording Arts with Emphasis in Media Forensics

Please see the **Graduate Catalog** or contact CAM@ucdenver.edu for information about CAM graduate programs in recording arts and media forensics.

Undergraduate Admissions

Students wishing to pursue a CAM degree must be admitted to the University of Colorado Denver. See the Office of Admissions website for application requirements and deadlines. In addition, all audition track emphases in Music & Entertainment Industry Studies, and the Film & Television program require additional application components. Students typically submit these additional components at the same time as university applications. Certain Visual Arts require portfolio-reviews after students have completed initial course work at CU Denver. Find more details about CAM program application requirements and deadlines in this catalog by selecting the above program links. Music and Film & Television application guidelines and deadlines may also be found on the CAM Admissions website.

Facilities

CAM is committed to both traditional and new technologies and celebrates the dynamic synergy between the two. CAM students can take advantage of superb studios, laboratories, editing facilities, equipment, screening rooms, galleries and performance

spaces on campus. Students across all three CAM departments create work in computer labs where equipment and software are upgraded regularly. Most CAM studios are open for use by enrolled CAM students when classes are not scheduled. However, policy mandates that all equipment can only be used for class related projects. CAM is constantly working to enhance and add to its facilities; see below for just some of the resources.

Music & Entertainment Industry Studies Facilities

- Five recording studios
 - Three studios include surround sound capabilities
 - All studios are ProTools equipped
- Large inventory of microphones and outboard equipment available
- Vintage keys collection, including DX-7, ARP Odyssey, ARP 2600, MiniMoog, PolyMoog, D-10, Hammond B3 and Rhodes
- MIDI lab featuring ProTools, Logic and Ableton Live; supplemental access to three CAM computer labs
- Consoles, including SSL AWS 924, Yamaha DM2000, AVID S6 and Mackie 32x8 Bus, as well as an Avid Artist Control Surface
- 16-station piano lab featuring Apple Macintosh iMac computers with a wide selection of musical and songwriting/composition software applications
- Eight performance teaching studios
- 12 practice suites
- Private teaching studios for voice, piano, guitar, bass, drum kit and percussion
- Audio/video forensics labs at the National Center for Media Forensics
 - Computer lab featuring multimedia analysis and processing software such as Cognitech, Ocean Systems, DAC, Agnitio, iZotope Rx Advanced, Adobe Creative Cloud, MATLAB, EnCase, Cellebrite and CEDAR Cambridge hardware/software systems
 - Security DVR and camera lab
 - Graduate student workstations accessible from anywhere in the world via Remote Desktop Connection
 - ENF (Electric Network Frequency) databases around the US

Visual Arts Facilities

- Photography labs with black-and-white, non-silver, digital imaging and color capabilities, and large-format digital, color, and black and white printing (four large wet labs, individual color darkrooms, an RA4 color processor, an alternative process darkroom and a fully-outfitted digital lab with large-format Epson printers).
- Transmedia sculpture lab with wood shop, metal shops and a foundry, as well as digital facilities (metal and wood fabrication, mold casting/design, digital modeling, electronic art, foundry casting, and teaching gallery).

- Drawing and painting studios with flexible open space and excellent natural and studio lighting (studio classrooms with roll-out computers, projectors and small monotype presses, screen printing facilities, digital lab access and large format printing).
- Digital design labs, computer labs, sound booths, editing suites, and video and digital cameras for student use
- Digital Animation Center computer labs and motion capture studio
- Illustration studios including state-of-the-art computer labs using Adobe software and open hands-on studio facilities (design, drawing, painting, printmaking, 3D sculpting equipment).
- Auraria Visual Resources Center digital collection of contemporary and historical images, music and video
- Emmanuel Gallery and Next Stage Gallery, public arts spaces for student and faculty exhibitions and special exhibition events
- Community partnerships with the Museum of Contemporary Art Denver, Redline Gallery, the Denver Performing Arts Center and more.

Film & Television Facilities

- Two Apple computer labs utilizing the Adobe Creative Suite as well as other industry-level software applications
- Equipment cage stocked with state-of-the-art tools for video production, including 4K cameras, lighting, sound and grip equipment
- Three “black box” production studios
- Scenic shops: wood, metal and paint
- Three full-size green screens
- Auraria Media Center, with two 3-camera TV studios with full control rooms, isolation booth and lighting control
- 120-seat movie theatre/classroom with a 2K projector and surround sound

Kenneth King Academic and Performing Arts Center

- 520-seat Concert Hall
- 268-seat Eugenia Rawls Courtyard Theatre - proscenium theater with optional thrust stage
- 200-seat Recital Hall
- Fully wheelchair accessible production facilities, including catwalks
- Assisted Listening System available in all venues
- Wireless access

MUSIC & ENTERTAINMENT INDUSTRY STUDIES

Contact Information

Chair: Richard Strasser
Office: Arts Building, Suite 288
Telephone: 303-315-7450
Fax: 303-315-7489

Faculty

Professors:

Stan Soocher, JD, New York Law School
Gregory Walker, DMA, University of Colorado

Associate Professors:

David Bondelevitch, MFA, University of Southern California
Lorne Bregitzer, MS, University of Colorado Denver
Storm Gloor, MBA, West Texas A&M University
Catalin Grigoras, PhD, University Politehnica Bucharest
Erin Hackel, DMA, University of Colorado
Sean McGowan, DMA, University of Southern California
Sam McGuire, MS, University of Colorado Denver
Paul Musso, MM, University of Denver
Richard Strasser, DMA, Manhattan School of Music

Assistant Professors:

Cecilia Wu, PhD, University of California Santa Barbara

Assistant Professors Clinical Teaching Track:

Benom Plumb, MM, University of Miami

Senior Instructor:

Peter Ellingson, DMA, University of Colorado
Owen Kortz, MM, University of Southern California
Todd Reid, MM, University of Cincinnati - Conservatory of Music

Instructors:

Gregory Garrison, DMA, University of Colorado Boulder
Andrew Guerrero, BS, University of Colorado Denver
Jeffrey Merkel, MS, University of Colorado Denver

Andrew Morell

Leslie Soich, MM, University of Colorado Boulder

Evan Shelton, MM, University of Denver

Bachelor of Science in Music

The music program prepares students for professional careers related to commercial performance, recording, music business and the entertainment and creative industries, as well as for graduate studies at leading conservatories. More specifically, the Department of Music & Entertainment Industry Studies (MEIS) offers a Bachelor of Science (BS) in Music. Students apply to an intended emphasis and track:

Performance Emphasis

Singer/Songwriter Emphasis

Music Business Emphasis, on one of two tracks:

- Audition Track
- Non-Audition Track

Recording Arts Emphasis, on one of two tracks:

- Audition Track
- Non-Audition Track

Acceptance into MEIS is on a competitive basis with specific entrance evaluation requirements for both first year and transfer students. All applicants are placed in an enrollment pool and admission decisions are based on several factors, which include an indexed composite score of GPA and an audition (if applicable). Application materials must be received by the deadline.

Prospective students should refer to the MEIS website for current entrance requirements, deadlines and procedures.

All students in MEIS are required to abide by the policies and procedures outlined in the MEIS *Student Handbook* (available by contacting meis.dept@ucdenver.edu) as well as all university policies and codes of conduct.

Performance Emphasis

The performance emphasis includes specialized courses in small performance ensembles, applied private study, contemporary improvisation, and analysis and history. Students gain a diverse set of performance skills in commercial, jazz, classical and experimental music styles. The curriculum includes the presentation of junior and senior recitals.

Students are required to pass a Sophomore Proficiency at the end of the sophomore year in order to progress into advanced performance and musicianship courses.

Students must pass an entrance audition to pursue the performance emphasis.

Singer/Songwriter Emphasis

Students in the singer/songwriter emphasis complete specialized courses in the songwriting and arranging repertoire while developing their performance skills through small performance ensembles and applied private study of voice, accompanying instrument and songwriting. The curriculum includes the presentation of junior and senior recitals. Students are required to pass a Sophomore Proficiency at the end of the sophomore year in order to progress into advanced performance and musicianship courses.

Students must pass a singer/songwriter entrance audition to pursue the singer/songwriter emphasis.

Music Business Emphasis (Audition Track or Non-Audition Track***)**

The music business emphasis prepares undergraduates for careers in fields such as artist management, music publishing, concert promotion, record production, venue management, label promotion, distribution and entertainment law.

Recording Arts Emphasis (Audition Track or Non-Audition Track***)**

The recording arts emphasis focuses on contemporary analog and digital technology as it is used in music recording, sound reinforcement and media applications (Internet, video games, interactive art installations, etc.). While mastering technology skills and formats, students also study the artistic and aesthetic applications of technology to recording, reinforcement, composition and performance.

****Audition Track (for students pursuing the music business or recording arts emphasis)**

The audition track provides an in-depth study of musicianship/performance through lectures and hands-on learning, while allowing students to specialize in their area of interest. As part of the admissions process, students must pass an entrance audition on a musical instrument or voice.

Students on the audition track must complete three semesters of music theory and ear training & sight singing courses, followed by a semester of jazz theory. In addition, students complete four semesters of class piano. All students in MEIS complete two music history courses.

Audition track students take four semesters of private lessons, culminating each semester in a performance for a jury of faculty. They also take four semesters of general recital, which culminates each semester in a performance for an audience of their peers.

*****Non-Audition Track (for students pursuing the music business or recording arts emphasis)**

The non-audition track provides a broad overview of various musicianship/performance topics through lectures and hands-on learning. This track does not require an entrance audition.

Students on the Music Business (MB) or Recording Arts (RA) non-audition tracks complete one semester of music theory, and either two semesters of ear training & sight singing for RA, and one semester of ear training & sight singing for MB, one class piano or class guitar. Students may opt to complete up to two semesters of class piano or can switch to voice class or guitar class. Non-audition track students are required to take additional musicianship course work, including Music in Culture and a music history elective.

*****Non-Audition Track (for students pursuing the recording arts emphasis)**

The non-audition track recording arts emphasis provides an in-depth review of recording arts topics through lectures and hands-on learning. This track does not require an entrance audition.

Students on the non-audition track complete one semester of music theory, two semesters ear training & sight singing, and class piano, guitar class, or voice class. All students in MEIS complete two music history courses.

Students are encouraged to contact the College of Arts & Media at CAM@ucdenver.edu to talk about the differences in curriculum and to determine which track is best suited to them.

See the **Graduate Catalog** or contact CAM@ucdenver.edu for information about the graduate programs in media forensics.

FILM & TELEVISION

Contact Information

Chair: David Liban

Office: King Center, 506

Telephone: 303-315-7414

Faculty

Associate Professors:

Laura Cuetara, MFA, Boston University

Kent Homchick, MFA, Carnegie Mellon University

Daniel Koetting, MFA, Yale University

David Liban, MFA, Brooklyn College

Hans Rosenwinkel, MFA, American Film Institute

Nate Thompson, MFA, North Carolina School of Arts

Craig Volk, MFA, Yale University

Assistant Professors:

Eric Jewett, BA Harvard University

Assistant Professors Clinical Teaching Track:

Howie Movshovitz, PhD, University of Colorado Boulder
Jessica McGaugh, MFA, Syracuse University

Instructors:

Roma Sur, MA, University of Denver
Andrew Bateman, MFA, Temple University
James Phelan

Department Overview

The Department of Film & Television offers a Bachelor of Fine Arts (BFA) in Film and Television, as well as minors in film and television production, film and television writing, film and television performance, and theatre, film and television. The department offers courses in these disciplines through an innovative curriculum in the context of a strategically designed liberal arts education.

Students have the opportunity to work directly with faculty, guest artists and fellow students through participation in the department's production program of films, television shows and web-based media projects, as well as a variety of student-produced projects. Denver-area film and theatre productions, film screenings, lectures, concerts, exhibits and other cultural resources are regularly utilized throughout each student's course of study.

Bachelor of Fine Arts (BFA) in Film and Television Emphasis:

- Film and Television

Film and Television Minors:

- Film and Television Production
- Film and Television Writing
- Film and Television Performance
- Theatre, Film and Television

VISUALARTS

Contact Information

Chair: Michelle Carpenter

Office: CU Denver Building, 815N

Visual Arts Office: CU Building, Suite 800

Telephone: 303-315-1500

Faculty

Full Professors:

Joann Brennan, MFA, Massachusetts College of Art
Carol Golemboski, MFA, Virginia Commonwealth University
Rian Kerrane, MFA, University of New Orleans

Associate Professors:

Maria Elena Buszek, PhD, University of Kansas
Michelle Carpenter, MFA, University of Colorado Boulder
Brian DeLevie, MFA, University of Houston
Melissa Furness, MFA, University of Iowa
Quintin Gonzalez, MFA, Yale University
Bryan Leister, MFA, George Mason University
Jeffrey Schrader, PhD, New York University, MA, Oberlin College
Travis Vermilye, MFA, University of Michigan

Assistant Professor:

Yang Wang, PhD, The Ohio State University

Assistant Professor Clinical Teaching Track:

Howard Cook, MFA DC, National University

Senior Instructors:

Michael Brohman, MA, University of Colorado Denver
Vivian George, MFA, Yale University

Instructors:

William Adams, MA and MFA, University of New Mexico
Stephen Baker, MFA, National University California
Jeremy Brown, BA, Hampshire College
Paul Conner, BA, Art Institute of Colorado
Rebecca Heavner, MLA, University of Colorado Denver
Elizabeth Pugliano, PhD, Boston University
Stephen Schaf, MFA, Academy of Art University, San Francisco

Department Overview

The Department of Visual Arts offers professional instruction in six interrelated areas: art history, art practices, 3D animation, digital design, illustration, and photography.

Visual Arts provides a vital educational environment where future artists, designers and art historians explore the horizons of their own talents in an atmosphere of critical dialogue and professional art and design practice. Students learn and experience various media of animation, digital design, drawing, illustration, painting, photography and transmedia sculpture, all within the rich context of a research university. Learning is predicated on both an understanding of art and media theory, and on the practical knowledge of methods and materials used in making art and design today. Art history studies focus on historical knowledge integrated with critical writing and analysis.

The department prides itself on fostering an appreciation for diverse approaches to visual culture and to reaching out to the larger art history, arts and design communities. Internships are available.

Graduating seniors receiving the Bachelor of Fine Arts (BFA) degree are required to participate in the BFA thesis exhibition during their last semester of study. This exhibition is scheduled for each spring term only.

Bachelor of Fine Arts (BFA) Emphases:

- 3D Graphics and Animation
- Art Practices
- Digital Design
- Illustration
- Photography

Bachelor of Arts (BA) Emphasis:

- Art History

Visual Arts Minors:

- Art History
- Digital Design
- Illustration
- Painting and Drawing
- Photography
- Studio Art
- Transmedia Sculpture

Many of the above options require FINE 2600 Art History Survey I and/or FINE 2610 Art History Survey II. Either course may also count toward Core Humanities (as part of the General Education requirements). Contact the College of Arts & Media at CAM@ucdenver.edu for details.

BUSINESS SCHOOL

Acting Dean: Gary Colbert

Associate Dean of Programs: Ronald Ramirez

Assistant Dean of Students: Linda J. Brooker

Assistant Dean of Finance and Human Resources: Connie Amen

Chief of Staff: Malena Brohm

Contacts

Dean's Office

Business School Building

1475 Lawrence Street
Denver, CO 80202
303-315-8000
Fax: 303-315-8040

Mailing Address

The Business School
Campus Box 165
P.O. Box 173364
Denver, CO 80217-3364

Website

<http://business.ucdenver.edu>

Admissions/Advising

303-315-8101/303-315-8110

Located in the heart of the Rocky Mountain business community, the Business School at the University of Colorado Denver prepares students with the knowledge and skills necessary to become effective, responsible business professionals. We're able to achieve a standard of excellence by bringing together nationally recognized faculty and highly motivated, mature students in an intellectually challenging academic environment. CU Denver's Business School is a research institution. Because our faculty are nationally recognized for scholarly research as well as for their teaching skills, our students have the opportunity to be on the leading edge of business management theory and practice. Our class schedules and curriculum offer flexibility to meet your needs whether you plan to attend full or part-time. Whether you're an experienced working professional seeking an advanced degree or preparing for a new career in the business world, you'll gain the knowledge and perspective necessary to succeed in today's challenging business environment.

Educational Goals

The Business School is committed to superb teaching, connecting theory to practice that focuses on:

- current and relevant knowledge and skills necessary for success in the highly competitive global business environment
- experience in cooperative and team-based work skills
- integrated professional and functional expertise
- sensitivity to cultural and ethnic diversity

Our undergraduate program, which serves both traditional and nontraditional students, leads to a baccalaureate degree in business with a substantial liberal arts component. The program is closely linked, through articulation agreements, to lower-division programs offered by Colorado's four-year and community colleges.

Key elements of our academic programs are the provision of top-quality career advising and placement services, as well as flexible schedules and programs to meet a wide range of student needs. We are committed to supporting our students' efforts to pursue rewarding careers.

Faculty

Our nationally recognized faculty members are vigorous and enthusiastic about teaching and research. Faculty members hold degrees from the nation's leading business schools, including Berkeley, Harvard, Stanford, University of Chicago, University of Pennsylvania, UCLA and Yale. Many of them also bring years of valuable experience in private industry. Their interdisciplinary expertise, academic achievements, scholarly research and business experience provide students with a dynamic learning environment.

Scholarships and Financial Aid

Many programs for financial aid are administered by the Office of Financial Aid. Call 303-315-1850 for detailed information.

Thanks to the generous support of the Colorado business community and others, the Business School has a significant number of scholarships to offer its students. Scholarships are awarded on the basis of merit and/or financial need. The amount of the award and the number of awards available vary.

Over 30 different scholarships are available to eligible Business School students, with multiple awards from most scholarships.

Further information about these scholarships, including eligibility criteria and application forms, may be obtained by visiting the Financial Aid & Scholarships website, by calling 303-315-1850, or by viewing scholarship information on the Business School website.

Institute for International Business

CU Denver's Institute for International Business (IIB) was created in 1988 by the Board of Regents of the University of Colorado to serve as a center for the advanced study and teaching of international business (IB). The US Department of Education designated the IIB as a Center for International Business Education and Research, a prestigious center of excellence award that it has competitively held since 1993. CU Denver is one of only 15 CIBERs in the United States and the only one in Colorado. Among others, the IIB/CIBER promotes interdisciplinary and multi-campus collaboration at the University of Colorado; hosts monthly International Executive Roundtable lectures on global competitiveness; and sponsors IB development programs, conferences and workshops for faculty and the business community in Colorado, the Rocky Mountain region and the United States. The IIB/CIBER works closely with CU Denver's Business in advancing its international business programs and research, as well as other colleges, schools, and departments at CU to promote various internationalization initiatives. Call 303-315-8884 or visit the IIB website at www.ucdenver.edu/institutes/international-business for more information.

Academic Programs

A carefully designed curriculum to prepare students for success in business administration is available for the student seeking an undergraduate degree. The school offers courses leading to the bachelor of science in business administration (BSBA).

Undergraduate Degree Programs

Associate Dean: Ronald Ramirez

Assistant Dean: Linda J. Brooker

The undergraduate curriculum leading to the bachelor of science (business administration) degree is intended to help the student achieve the following general objectives:

- an understanding of the activities that constitute a business enterprise and the principles underlying administration of those activities
- the ability to think logically and analytically about the kind of complex problems encountered by management
- facility in the arts of communication
- a comprehension of human relationships involved in an organization
- awareness of the social and ethical responsibilities of those in administrative positions
- skills in the art of learning that will help the student continue self-education after leaving the campus

Double Major Programs

Numerous career opportunities exist for persons trained in both a specialized field and management. For this reason, students may be interested in combined programs of study in two different majors leading to completion of degree requirements concurrently in two areas. If you have questions on our programs, email the undergraduate business advisors at undergrad.advising@ucdenver.edu or call 303-315-8110 to make an appointment with a business advisor.

Undergraduate Advising and Academic Planning

Upon admission to the school, students are encouraged to meet with an advisor who will guide you through the steps needed to have a successful career as a student in the Business School and help you complete the requirements for the BSBA (bachelor of science business administration) degree. If you seek advising, or have questions on course selection and other matters, you may email the advisors at: undergrad.advising@ucdenver.edu or call 303-315-8110 to make an appointment.

Undergraduate Majors

Business students must choose a major and complete the requirements for the major. The major provides specialization beyond the general background of the undergraduate core and the business core. Business students are strongly encouraged to declare a major by the time they have accumulated 60-75 semester hours. The courses in the major are typically completed in the junior and senior years. Majors within the BS in business administration program include:

- Accounting Major - BS in Business Administration
- Accounting Major - BS in Business Administration with specialization in Information Systems
- Entrepreneurship Major - BS in Business Administration
- Finance Major - BS in Business Administration
- Financial Management Major - BS in Business Administration
- Financial Management Major - BS in Business Administration with Specialization in Information Systems
- Human Resources Management Major - BS in Business Administration
- Information Systems Major - BS in Business Administration (specializations available in Accounting, Finance, Human Resource Management, Management and Marketing)
- International Business Major - BS in Business Administration
- Management Major - BS in Business Administration
- Management Major - BS in Business Administration with specialization in Information Systems
- Marketing Major - BS in Business Administration
- Marketing Major - BS in Business Administration with specialization in Information Systems
- Risk Management and Insurance Major - BS in Business Administration
- Sports Business Major - BS in Business Administration

Extend your education

Whether you are looking to advance in your current field or prepare for an entirely new career, the Business School offers opportunities to suit your goals.

A variety of classes and programs are available to community members and alumni. Classes are taught by expert faculty or influential members of the Denver business community, imparting knowledge that is readily applicable in the field.

Entrepreneurship

The Jake Jobs Center for Entrepreneurship offers programs for those looking to start a new venture or enhance their entrepreneurial skills.

Certificate Specialization Programs

Modern career paths are flexible, which makes it beneficial to have a flexible degree. If you already have a graduate business degree from an AACSB accredited school, the

CU Denver Business School allows you to add a specialization through our post-graduate certificates.

Business School Courses

Click here to see a complete list of undergraduate courses.

Business School Programs

(For Graduate Programs please refer to the Graduate catalog.)

Business School

Programs

Bachelor of Science in Business Administration

- Accounting Major - BS in Business Administration
- Accounting Major - BS in Business Administration with specialization in Information Systems
- Entrepreneurship Major - BS in Business Administration
- Finance Major - BS in Business Administration
- Financial Management Major - BS in Business Administration
- Financial Management Major - BS in Business Administration with Specialization in Information Systems
- Human Resources Management Major - BS in Business Administration
- Information Systems Major - BS in Business Administration (specializations available in Accounting, Finance, Human Resource Management, Management and Marketing)
- International Business Major - BS in Business Administration
- Management Major - BS in Business Administration
- Management Major - BS in Business Administration with specialization in Information Systems
- Marketing Major - BS in Business Administration
- Marketing Major - BS in Business Administration with specialization in Information Systems
- Risk Management and Insurance Major - BS in Business Administration
- Sports Business Major - BS in Business Administration

Certificate

- Commodities Certificate
- Entrepreneurship Certificate
- Fundamentals of Business Alumni Certificate
- Risk Management and Insurance Certificate

Minors

- Business Minor
- Entrepreneurship Minor
- Finance Minor
- Fundamentals of Business Minor
- Risk Management and Insurance Minor

SCHOOL OF EDUCATION & HUMAN DEVELOPMENT

Dean

Rebecca Kantor, Professor and Dean

Associate Deans

Barbara Seidl, Teacher Education & Undergraduate Experiences
Dorothy Garrison-Wade, Faculty Affairs
Scott Bauer, Advanced Education and Doctoral Programs

Assistant Deans

Patricia Ball, Finance and HR
Brad Hinson, Information and Academic Technology
Sandy Mondragon, Student Success and Enrollment Management

Contact

Admissions

Office of Admissions & Outreach
1380 Lawrence Street Center, Suite 701
303-315-6300 voice
Email: education@ucdenver.edu
Website: <https://education.ucdenver.edu/academics/undergraduate>

Mailing Address

School of Education & Human Development
P.O. Box 173364, Campus Box 106
Denver, CO 80217-3364

Overview

The School of Education & Human Development is a vibrant community of practicing educators and counselors, educational leaders and researchers who have a strong service ethic locally, nationally and globally and a dedication to excellence.

Mission

Leadership for Educational Equity

Prepare and inspire education and mental health leaders to have a profound impact in fostering student opportunity, achievement and success in urban and diverse communities.

Vision

A leading school of education providing national expertise on educational issues and socially-just solutions for urban and diverse communities. Through innovative research and partnerships, we strive to be passionate agents of change, inspiring upcoming generations to learn from the past and shape the future.

Our Role in the Community

We are committed to developing forward-thinking educators and counselors who have a deep sense of inquiry, a concern for pressing social problems, a great desire to live their lives purposefully, a passion for giving back to the community and the cultural competence needed to serve urban and diverse populations.

Diversity and Inclusion

At the School of Education & Human Development (SEHD), we believe strongly that all students-diverse in race, ethnicity, economic resources, language, fluency, abilities, geography, first-generation status, age, gender and sexual identities-deserve the opportunity to learn. To advance our mission and meet the changing interests of our local and global communities, the Office of Diversity and Inclusion has been established to create positive momentum towards educational access, equity, and success.

Accreditation

The University of Colorado Denver is institutionally accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. The commission can be contacted at 230 South LaSalle Street, Suite 7-500^[SEP] Chicago, IL 60604^[SEP] **Telephone:** 1-800-621-7440

In addition, teacher education programs in the SEHD have been accredited by the Colorado State Board of Education.

Admissions

All students apply online. Instructions for undergraduate students are found at <http://www.ucdenver.edu/admissions/>.

Information about all degrees, programs and admission requirements can be found on the school's website at <https://education.ucdenver.edu/>

Undergraduate Program List for the School of Education and Human Development

Bachelor of Arts: Education and Human Development

- Education and Human Development, Early Childhood Education BA - Licensure Track
- Education and Human Development, Early Childhood Education BA - Non-Licensure Track
- Education and Human Development, Elementary Education BA with CLDE Added Endorsement
- Education and Human Development, Special Education BA (Elementary Education Endorsement)
- Education and Human Development BA with Middle School Mathematics License
- Education and Human Development BA with Secondary Mathematics License
- Education and Human Development BA with Secondary Social Studies License
- Education and Human Development BA with Secondary English Language Arts License
- Education and Human Development BA with Secondary Science License

T-PREP at Otero Junior College Partnership Pathways

- Education and Human Development, Elementary Education BA - Rural Partnership with Otero Junior College
- Education and Human Development BA with Middle School Math License - Rural Partnership with Otero Junior College
- Education and Human Development BA with Secondary Science License - Rural Partnership with Otero Junior College

T-PREP at Trinidad State Junior College Partnership Pathways

- Education and Human Development BA with Early Childhood Education License - Rural Partnership with Trinidad State Junior College
- Education and Human Development BA, with Elementary Education License - Rural Partnership with Trinidad State Junior College

CLAS Secondary Teacher Education Programs

- BA-English Literature Secondary English Licensure
- BS-Mathematics Secondary Mathematics Licensure
- BA-History Secondary Social Science Licensure
- BA-Political Science Secondary Social Science Licensure
- BA-Spanish Secondary Spanish Licensure
- BA-French Secondary French Licensure
- BS-Biology Secondary Science Licensure
- BS-Environmental Science Secondary Science Licensure

Bachelor of Science

- Human Development and Family Relations BS
- BS/MA 4+1 Program in Education and Human Development: HDFR Concentration
- Human Development and Family Relations BS Rural Partnership with Trinidad State Junior College

Licenses and Endorsements

- Undergraduate Teacher Licensure in following endorsement areas: Elementary, Early Childhood, Special Education, Middle School Math, Secondary Math, Secondary Science, Social Studies Education and Secondary Science Education
- Added Endorsement in Culturally and Linguistically Diverse Education in Elementary Track

Minors

- Digital Media Design for Learning Minor
- Human Development and Family Relations Minor
- Education Studies Minor
- Culturally and Linguistically Diverse Education Minor

COLLEGE OF ENGINEERING, DESIGN AND COMPUTING

Dean Martin Dunn

Senior Associate Dean of Computing Initiatives Douglas Sicker

Senior Associate Dean of Innovation and Engagement Kristin Wood

Associate Dean of Academic Initiatives Keith Jones

Associate Dean for Student Affairs Bruce Janson

Contact

Office

North Classroom 3034
1200 Larimer Street, 3rd Floor
Telephone: 303-315-7170
Fax: 303-315-7173
engineering@ucdenver.edu

Mailing Address

College of Engineering, Design and Computing
Campus Box 104
P.O. Box 173364
Denver, CO 80217-3364

Application Deadlines

Undergraduate

Fall: July 31

Spring: December 31

Summer: May 31

Overview

The College of Engineering, Design and Computing at the University of Colorado Denver meets the needs of the Denver metropolitan area by providing nationally accredited engineering education programs in a flexible format that suits both students and employers. Recognizing the importance for students to pursue professional studies and related employment simultaneously, the college offers undergraduate and graduate degree programs in bioengineering, civil engineering, mechanical engineering, electrical engineering and computer science through late afternoon and evening studies or through a more traditional schedule of day classes.

A listing of the fields in which engineers work would have hundreds of entries. The following list is a brief summary of the engineering fields available at CU Denver.

Bioengineering offers opportunities for interdisciplinary undergraduate training for a bachelor of science degree and graduate training for master of science and doctor of philosophy degrees. Our programs are uniquely integrated with the CU Anschutz Medical Campus. Students enjoy opportunities to learn from clinicians and engineers and to perform research or medical device design in world-class hospitals and clinical research labs. Bioengineering is one of the fastest growing job markets this decade, according to the Bureau of Labor Statistics. A degree in this area provides numerous opportunities to work in health care, biomedical industry, government regulatory agencies and academia.

Civil engineering offers an interesting and challenging career in the design and construction of buildings, bridges, dams, aqueducts and other structures; in transportation systems including highways, canals, pipelines, airports, rapid transit lines, railroads and harbor facilities; in the distribution of water and the regulation of rivers; in the development of water resources for urban use, industry and land reclamation; in the control of water quality through water purification and proper waste treatment; in the construction and contracting industry; and in the problems concerned with our physical environment and the growth of cities.

Computer science offers graduates the solid foundation needed for jobs in computing and enabling technology encompassing many areas across diverse fields such as healthcare, business, natural & applied sciences, mathematics and visual arts. Career paths in computer science involve designing and implementing software, devising new computer applications and developing effective ways to solve computing problems.

Electrical engineering offers careers that include research in development of new electrical or electronic devices, instruments or products; design of equipment or systems; production and quality control of electrical products; and sales or management for private industry or government. There are numerous specialties within electrical engineering. Among them are the design and application of computer systems and digital engineering; electromagnetic fields and microwave devices; control systems; communication theory and signal processing; electrical integrated circuits and electron devices; and energy and power systems.

Mechanical engineering offers a wide range of interesting and challenging career opportunities in research, design, development, manufacturing, testing and marketing for either private industry or government. Mechanical engineers help develop a wide range of products such as engines, transmissions, compressors, pumps, oil field drilling rigs, missiles, space satellites, earth-moving equipment, container-manufacturing machines, medical equipment and many other products encountered in daily life.

College of Engineering, Design and Computing Educational Goals

The College of Engineering, Design and Computing has established the following goals and objectives for undergraduate education:

- successful completion of the fundamental core courses, primarily lower division, in mathematics and the physical sciences
- successful completion of the required upper-division courses in engineering science, analysis and design
- successful completion of real-world engineering design projects that require integration of engineering, economic and social skills
- successful completion of a series of humanities and social science courses that introduce the student to societal problems and historical perspectives
- evidence, through close student/faculty contact, of development of professionalism, ethics and concern for the multifaceted human element of engineering
- evidence, from successful completion of a full engineering curriculum, of the ability to maintain professional competency through lifelong learning
- evidence, through successful completion of a series of communications oriented courses and project presentations, of an ability to communicate effectively with professionals and laypersons alike

Accreditation

Our undergraduate programs in bioengineering, civil engineering, electrical engineering and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, www.abet.org. The undergraduate program in computer science is accredited by the Computing Accreditation Commission of ABET, www.abet.org.

Freshman Year

Fundamentals taught in the freshman year are of critical importance in the more advanced classes. Special attention should be given to taking courses in the proper sequence. (Course requirements for freshmen are detailed within the typical curriculum given under each department.) All students are urged to consult their instructors whenever they are experiencing difficulties with course materials or for questions related to the class.

Internships

Internships are a way for students to gain professional experience while studying at CU Denver. Many internship positions lead to permanent employment opportunities upon graduation. Please contact the Experiential Learning Center at 303-315-7258 for information on the specific eligibility requirements.

Scholarships

The College of Engineering, Design and Computing awards various undergraduate scholarships to support the education of engineering students. These awards are provided through funds generously given by industry, alumni and other donors. Once admitted, students may view and apply for these scholarships through the student portal . Please note that the list of scholarships for which a particular student is eligible automatically populates. For additional information on other types of financial aid, consult the Tuition/Financial Aid FAQs section.

Comcast Media and Technology Center

Website: www.comcastmediatechcenter.org

Established to be the premier scholarly hub for design innovation research and practice, the Comcast Media and Technology Center uses an interdisciplinary methodology and combines academic theories with practical applications in a technologically advanced setting. This unique approach is then applied to relevant societal challenges to produce imaginative solutions in engineering and design.

Born from the powerful partnership that exists in Denver within the public and private sectors, and made possible by generous contributions from the Comcast Corporation, the Comcast Media and Technology Center is a state-of-the-art, 1,900 sqft innovation suite located within the Tivoli Student Union in the heart of CU Denver's Auraria Campus. It serves as a catalyst for innovation for the College of Engineering, Design and Computing and the College of Arts & Media, as an exciting example of the experiential learning that can happen for students in an encouraging interdisciplinary environment.

Projects overseen by center staff are assessed with-in a research-based theoretical framework in a forum where creative ideation is encouraged. Team members are chosen because of their diverse academic backgrounds to work in intentionally arranged interdisciplinary groups to complete assignments, where they are encouraged to utilize their unique skill sets, and scholarly experiences to problem solve and create solutions. Specific projects can vary from design work (digital or practical), research, ideation, production, fabrication, prototyping, testing, data collection, systems design, process modeling, focused research/analysis or application, simulation, 4D/3D printing, data visualization, industry/market studies, and reporting creating an opportunity to learn and grow new skillsets.

Programs of Study

(For graduate programs please refer to the Graduate Catalog.)

College of Engineering, Design and Computing

Bioengineering

Programs

Bachelor of Science

- Bioengineering BS

Civil Engineering

Programs

Bachelor of Science

- Civil Engineering BS
- Construction Engineering and Management BS
- Construction Management BS

Minors

- Construction Management Minor

Computer Science and Engineering

Programs

Bachelor of Arts

- Computer Science BA

Bachelor of Science

- Computer Science BS

Certificate

- Cybersecurity and Secure Computing Undergraduate Certificate

Minors

- Computer Science Minor

Electrical Engineering

Programs

Bachelor of Science

- Electrical Engineering BS

Minors

- Computer Engineering Minor
- Electrical Engineering Minor

Mechanical Engineering

Programs

Bachelor of Science

- Mechanical Engineering BS

BIOENGINEERING

Chair: Robin Shandas

Denver Office: North Classroom 2204

Anschutz Office: Bioscience 2, 12705 E. Montview Blvd., Aurora, CO 80022

Telephone: 303-315-7492

Fax: 303-724-5800

E-mail: bioengineering@ucdenver.edu

Faculty

Core Faculty

Robin Shandas, PhD

Professor

robin.shandas@cuanschutz.edu

Specialties: Novel methods for translational bioengineering

Richard Benninger, PhD

Associate Professor

richard.benninger@cuanschutz.edu

Specialties: Optical microscopy, pancreatic islet biology and biophysics, diabetes

Cathy Bodine, PhD

Associate Professor

cathy.bodine@cuanschutz.edu

Specialties: Assistive technology, rehabilitation engineering

Emily Gibson, PhD

Assistant Professor

emily.gibson@cuanschutz.edu

Specialties: Microfluidics technology, optical microscopy, and spectroscopy

Jeffrey Jacot, PhD

Associate Professor

jeffrey.jacot@cuanschutz.edu

Specialties: Stem cells and heart tissue engineering

Vitaly Kheifets, PhD

Assistant Research Professor

vitaly.kheifets@cuanschutz.edu

Specialties: Vascular/ventricular function, cellular metabolism in cardiovascular disease, and pulmonary hypertension

Cassandra Howard, MSC

Instructor

cassandra.howard@cuanschutz.edu

Specialties: Medical device innovation and biodesign

Kendall Hunter, PhD

Associate Professor

kendall.hunter@cuanschutz.edu

Specialties: Soft tissue mechanics, vascular and cardiac imaging diagnostics, translational biomechanics

Steven Lammers, PhD

Instructor

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Specialties: 3D printing & design, bioprintable materials, tissue engineering of 3D cellularized scaffolds

Craig Lanning, MS

Research Instructor

craig.lanning@cuanschutz.edu

Specialties: Digital manufacturing, reverse engineering, medical device and software design

Chelsea Magin, PhD

Assistant Professor

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Specialties: Bio-inspired materials for tissue engineering, R & D product development

Keith Neeves, PhD

Professor

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Specialties: Hematology and oncology

Daewon Park, PhD
Associate Professor
daewon.park@cuanschutz.edu
Specialties: Biomaterials, drug delivery, tissue engineering and regenerative medicine

Bradford Smith, PhD
Assistant Professor
bradford.smith@cuanschutz.edu
Specialties: Lung structure-function relationships, optimized mechanical ventilation, and high performance computing

Jennifer Wagner
Instructor
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Specialties: Medical imaging, 3D modeling, surgical guides/tools, tissue engineering, and material characterization

Richard Weir, PhD
Research Associate Professor
richard.weir@cuanschutz.edu
Specialties: Neural engineering, biomechatronic design, and rehabilitation engineering

Michael Yeager
Associate Clinical Professor
michael.yeager@cuanschutz.edu
Specialties: Cardiopulmonary disease, autoimmunity, in vivo cell lineage tracing & imaging

Bryan Yunker, PhD
Research Instructor
bryan.yunker@cuanschutz.edu
Specialties: Product design & development, product marketing, intellectual property, reconstructing physical anatomy in virtual reality

Affiliated Faculty

Students receive instruction from affiliate faculty in the University of Colorado system, including CU Boulder and the CU School of Medicine. Faculty research areas include Imaging and Biophotonics; Cardiovascular Biomechanics and Hemodynamics; Orthopedic Biomechanics; Surgery; Ophthalmology; and Neuroscience Engineering.

Mission Statement

The Department of Bioengineering bridges the fields of engineering and medicine with a core mission of applying engineering principles and analyses to improving human health. The department will fulfill this mission by providing opportunities for training,

research, and service in bioengineering to faculty, students, and residents of Colorado and the greater Rocky Mountain region.

Program Objectives

The Department of Bioengineering offers high-quality training in bioengineering that is both flexible and multidisciplinary. A design-based focus permeates every aspect of our training philosophy which can be summarized by the following question: what does the user want and how can I best utilize my bioengineering training to achieve this need? Our academic instruction focuses on developing core competencies in life sciences, quantitative methods, technology, and research methods.

Undergraduate Information

The program offers a bachelor of science (BS) degree in bioengineering. All undergraduate students begin the program on the CU Denver (Auraria) campus. In consultation with faculty advisors, each student chooses elective courses, training pathways, and research to fit talents, preparation, and career plans.

The BS in bioengineering degree will prepare students for careers in the biomedical industry, in hospital, government, or academic research labs, in regulatory agencies such as the FDA, and for further education in graduate school, medical school, or other advanced health sciences program.

The minimum of 128 semester hours is required to earn the BS degree, including 58 credits in bioengineering premajor coursework and 24 credits in general education core at the Denver campus. This training is complemented by 46 credits in the upper-level bioengineering major and track specialization courses at the CU Anschutz Medical Campus.

All students interested in bioengineering will commence their studies in the department as pre-majors. Admittance to the major will be granted to students who have successfully completed all pre-major courses and who meet the program's selection criteria.

BS/MS option

For full-time undergraduate CU Denver bioengineering students in the major, the bioengineering BS/MS option provides students the opportunity to begin graduate work while completing the undergraduate degree. Students are able to take six credits toward the master of science during the last year in the major as part of the bachelor of science track electives, accelerating the time to obtain a graduate degree. Visit our website or contact us at bioengineering@ucdenver.edu.

CIVIL ENGINEERING

Chair: Kevin L. Rens
Associate Chair: Bruce Janson
Office: North Classroom, 3037
Telephone: 303-315-7160
Fax: 303-315-7158
Website: ucdenver.edu/civil

Faculty

Professors:

Nien-Yin Chang, PhD, Ohio State University, Professional Engineer (PE)-Ohio and Colorado
James C.-Y. Guo, PhD, University of Illinois at Urbana-Champaign, PE-Colorado
Bruce N. Janson, PhD, University of Illinois at Urbana-Champaign
Yail Jimmy Kim, PhD, Queen's University, Professional Engineer (PEng)-Canada
Kevin L. Rens, PhD, Iowa State University, PE-Colorado
Jonathan T.H. Wu, PhD, Purdue University

Associate Professors:

Caroline Clevenger, PhD, Stanford University, PE, RA-Colorado
Arunprakash Karunanithi, PhD, University of Connecticut
Chengyu Li, PhD, Arizona State University; PE-Colorado, North Carolina, New Mexico, Washington; SE-Utah, Arizona, Washington
Wesley Marshall, PhD, University of Connecticut, PE-Connecticut
David C. Mays, PhD, University of California at Berkeley, PE-Colorado, California

Assistant Professors:

Moatassem Abdallah, PhD, University of Illinois at Urbana-Champaign
Heidi Brothers, PhD, University of Cincinnati
Allison Goodwell, PhD, University of Illinois at Urbana-Champaign
Frederick R. Rutz, PhD, University of Colorado, PE-Colorado

Professors Emeriti:

Paul E. Bartlett, MS, University of Colorado, PE-Colorado
David W. Hubly, PhD, Iowa State University, PE-Colorado
Lynn E. Johnson, PhD, Cornell University, PE-Connecticut
Oren G. Strom, PhD, University of Texas at Austin

Mission Statement

The mission of the Department of Civil Engineering:

- deliver high-quality comprehensive degree programs (BS, MS, MEng, PhD) to all of our students at both the undergraduate and graduate levels

- matriculate students who excel in professional practice and leadership and who possess compassion and respect for people of all cultural backgrounds
- teach our classes with excellence, whether in a traditional classroom setting or online
- offer our students state-of-the-art laboratories, equipment and classrooms with the latest technology needed for a complete learning experience
- develop ambitious and innovative research programs involving both faculty and students through funding from federal, state and local sources
- provide supportive mentoring and guidance to our students through teaching, research and advising
- produce students who can work as leading professionals in civil engineering and in many other fields for which civil engineering knowledge can be a foundation

Undergraduate Information

The CU Denver undergraduate civil engineering curriculum places balanced emphasis on five principal areas of civil engineering practice: structures, transportation, environmental, water resources and geotechnical engineering. In each of these areas, the student receives instruction in planning, design and analysis methods. Microcomputer skills are taught early in the program of study and used frequently in subsequent courses.

A minimum of 130 semester hours is required to earn a bachelor of science degree. The faculty provides advising to help students develop an efficient study plan. The student must satisfactorily complete all the course work in the curriculum, satisfy all university graduation requirements and maintain at least a 2.0 GPA in the civil engineering courses.

COMPUTER SCIENCE AND ENGINEERING

Chair: Gita Alaghband

Program Manager: Christina Ridd

Administrative Assistant: Megan Rogers

Office: Lawrence Street Center, 8th Floor

Telephone: 303-315-1408

Fax: 303-315-1410

Website: engineering.ucdenver.edu/cse

Faculty

Professors

Gita Alaghband, PhD, University of Colorado

Research areas: parallel and distributed systems, parallel algorithms, applications and languages, high-performance computing

Tom Altman, PhD, University of Pittsburgh
Research areas: algorithms, optimization, theory

Min-Hyung Choi, PhD, University of Iowa
Research areas: computer graphics, animation, virtual reality, human computer interface

Associate Professors

Ellen Gethner, PhD, University of British Columbia; PhD, Ohio State University
Research areas: graph theory, number theory, combinatorics, discrete geometry, computational geometry, visualization, algorithms

Ilkyeun Ra, PhD, Syracuse University
Research areas: computer networks, cloud computing, high-performance computing, distributed computing systems

Assistant Professors

Farnoush Banaei-Kashani, PhD, University of Southern California
Research areas: big data management, big data mining, data science, geospatial data analysis, data stores (NewSQL)

Ashis Biswas, PhD, University of Texas at Arlington
Research areas: machine learning, data mining, big data analysis, bioinformatics

Liang He, PhD, Nankai University
Research areas: cyber-physical systems, cognitive battery management, IoTs, mobile computing

Haadi Jafarian, PhD, University of North Carolina Charlotte
Research areas: proactive security for cyber threats, big data analytics for cyber threat intelligence, security for cyber-physical systems & critical infrastructures, security for IoTs, security analytics & automation, science of security

Assistant Professors (Clinical Teaching Track)

Madhuri Debnath, PhD, University of Texas at Arlington
Research areas: data mining, spatio-temporal data analysis, data science, machine learning

Salim Lakhani, PhD, Purdue University
Research areas: cloud computing and security, distributed computing & database systems

Senior Instructor (Clinical Teaching Track)

Diane Yoha, MS, University of Colorado Denver
Research areas: artificial intelligence, linguistic geometry, natural language processing

Professor Emeriti

Boris Stilman, PhD, National Research Institute for Electrical Engineering, Moscow, Russia

Mission Statement

With the advances in technology and the rapid and prevalent growth of the information-based economy, computer science has become an enabling science for nearly all disciplines that impact engineering, science, business, health and government. The future of the discipline promises even more innovative advances. The Department of Computer Science and Engineering at the University of Colorado Denver is committed to providing outstanding education and research training to our diverse undergraduate and graduate students for productive careers in industry, academia and government in the Denver metropolitan area, state and beyond. Our faculty strive for excellence in teaching, research and service by covering a broad spectrum of the discipline's core fundamentals, as well as applied aspects including those of interdisciplinary nature. We actively engage our students in classroom and out-of-classroom research and help them develop the skills needed to solve complex real-world technological problems of modern society.

Programs Offered

The Department of Computer Science and Engineering offers BS, MS and PhD degrees:

- The undergraduate BS degree is awarded in computer science (CS) and is ABET accredited. This curriculum is a rigorous study covering theoretical, software, systems and hardware interfaces providing students with a coherent and in-depth education of key components of the field.
- The Computer Science Scholars Program (dual BA/MS or BS/MS) provides high-performing and motivated undergraduate students the opportunity to begin course work at the graduate level while completing the undergraduate degree in CS. In the process, it allows students to receive dual credit for up to 12 hours of graduate-level CS courses for both the bachelor of science (BS)/bachelor of arts (BA) and the master of science (MS).
- The undergraduate BA degree is awarded in computer science (CS). It offers a flexible degree program designed with a modular approach that allows students to combine their computer science education with another academic field of their interest.
- The undergraduate certificate of Cyber Security & Secure Computing program is designed for students pursuing an undergraduate degree and will help prepare to be cyber defense professionals for careers in both the public and the private sector.
- The MS degree is awarded in computer science to those students who wish to pursue graduate studies to further develop their education. The MS in CS graduate program

covers the core knowledge of key concepts of computer science as well as offers flexibility to pursue specializing in various fields of interests.

- A track in **Data Science in Biomedicine** is offered as a MS thesis option. Students who choose this track will adopt biomedical applications of data science to learn data science methodologies and technologies.
- The **graduate certificate in software engineering** is designed for working professionals, or computer science students beginning their careers, who are in the field of software engineering and/or software development.
- The **graduate certificate in cybersecurity & defense** is designed for working professionals in the field of computer science, network and/or security operations. The certificate program in Cyber Security and Defense will prepare Computer Science professionals to identify, analyze, and mitigate technical cybersecurity-related vulnerabilities, exploits and attacks against network and critical cyber infrastructure.
- The **Computer Science and Information Systems (CSIS) PhD** Computer Science track is awarded by the College of Engineering and Applied Science. The CSIS PhD program is an interdisciplinary, joint program between the Department of Computer Science and Engineering and the Information Systems program in the Business School.
- The multidisciplinary **Engineering and Applied Science PhD** degree is available through the Department of Computer Science and Engineering.
- Any undergraduate student currently enrolled in a CU Denver degree program with a major other than computer science may earn a minor in computer science. This includes students from the College of Engineering, Design and Computing, the College of Liberal Arts and Sciences, the School of Public Affairs, the College of Arts & Media, and the School of Education & Human Development.

The most up-to-date information on all programs offered through the computer science and engineering department can be obtained from the department's website at engineering.ucdenver.edu/cse. Please also see our Graduate Catalog for more details regarding these programs.

Undergraduate Information

Computer Science Program

Computers as a combination of software and hardware have become significant to the whole of society. They affect the way in which business is conducted and the way people study and learn. Very important is the use of computers to develop new avenues of human communication, interaction and cooperation. Communication networks and the combination of text with audio and video are providing more people with fingertip access to a vast array of information and knowledge.

The computer scientist is a professional who must be prepared to apply his or her skills, knowledge and creativity in a rapidly changing field. The bachelor of science in computer science at CU Denver prepares students for such creative work. The emphasis is on fundamental concepts and basic principles with a long useful life. The program is

composed of five major study areas: mathematics, basic or engineering science, required computer science, technical electives and the CU Denver core curriculum.

The computer science program is accredited by the Computing Accreditation Commission (CAC) of ABET.

Computer Science Curriculum

The mathematics, basic science and computer science core requirements give the student a broad exposure to the concepts, methods and practice of computer science and engineering; the student learns the fundamentals of producing solutions to problems.

Technical electives are chosen to add depth to a student's knowledge in an area of special interest.

The CU Denver undergraduate core curriculum is designed to give the student an exposure to knowledge outside his or her major. For students in the College of Engineering, Design and Computing, courses in the humanities, social sciences and human communications are required.

To be awarded the bachelor of science in computer science, a student must satisfactorily complete all course work shown in the curriculum below, satisfy all university graduation requirements and maintain at least a 2.0 GPA in all computer science courses attempted (see "Policy on Academic Progress" in the introductory section of this chapter). Students must meet with an undergraduate advisor each semester to assure that they are on track within the degree program and are aware of the current requirements of the program. An additional source of information is the CS Undergraduate Advising Handbook available online on the department's website. Students must complete a 30-hour checkout before registering for the last 30 semester hours of their program. In addition, each student must complete an approved graduation plan within the academic year of their intended graduation date. For advising policies, see the BS-CS handbook on our website.

Note: Prerequisites must be taken before a course that requires them. Co-requisites are to be taken concurrently. Prerequisites will be strictly enforced.

Computer Science Scholars Program: Dual BS/MS

The Computer Science (CS) Scholars Program provides high-performing and motivated undergraduate students the opportunity to begin graduate work at the master's level while completing the undergraduate degree in CS. In the process, it allows students to receive dual credit for up to 12 hours of graduate-level computer science courses for both the Bachelor of Science (BS) and the Master of Science (MS) degree. This accelerates the time to obtain a graduate degree for the student, saving both time and expense.

Program Guidelines:

Students admitted into the CS Scholars Program will be allowed to take 5000-level courses in computer science while still completing their undergraduate degree in computer science. CS Scholars are allowed to apply up to 12 credit hours (4 courses) of 5000-level courses toward both their BS degree in computer science, as technical electives, and their MS degree in computer science.

The following guidelines are applied to students in the BS Scholars Program:

- Dual credit CSIS 5000-level courses must be taken at CU Denver and must be courses selected from category A or B as required by the MS degree in computer science (outlined in the CU Denver computer science Graduate Handbook).
- Students must score a B- or higher in their 5000-level computer science courses for the course to be applied toward the MS degree. A passing grade below a B- will contribute to the BS degree requirements, but not to the MS degree requirements.
- Students cannot apply more than 12 credit hours of graduate coursework to the MS degree taken prior to the completion of the BS degree.
- Students must apply for the CS Scholars Program before their final year of courses to receive dual credit for 5000-level courses. Students will be considered undergraduate students until all requirements for the BS degree in computer science are completed.
- The BS degree will be conferred the semester during which these requirements are completed. At that time, students will also be considered an MS student. Students then continue to fulfill the remaining requirements for their MS degree in computer science (thesis option or project option or course only option). CS Scholars are expected to finish their MS degree in 2 semesters upon completion of their BS degree (course only option), plus a summer session for students pursuing an MS project or thesis.

Admission Requirements:

- Must be a full-time undergraduate student in computer science at CU Denver in good standing, with a minimum of 60 credit hours completed toward the BS degree in computer science, and must have completed CSCI 3412: Algorithms, CSCI 3453: Operating Systems Concepts, and CSCI 3287: Database Systems.
- Must have a minimum cumulative GPA of 3.3 or a 3.5 GPA in CS major coursework.
- Must complete an application to the CS Scholars Program, including a dual degree course plan. The application must be approved by the student's CS academic advisor and submitted to the CS department.
- Must apply and be accepted into the CU Denver MS program in computer science for the semester during which they will enter the CS Scholars Program dual-credit program.

Bachelor of Arts Computer Science Curriculum

The mathematics, basic science, computer science core requirements and computer science technical electives give the students a solid foundation in computer science; the student learns the fundamentals of computational thinking.

Students are encouraged to focus their free electives towards their area of interest to earn a certificate, minor or double major. The bachelor of arts in computer science is modeled as CS+X where X is a component of the degree consisting of 38 credit hours that students can use to pursue their passion in a different field toward a minor, double major, or even additional CS education. The program shares the same computer science courses as the BS in CS with fewer math and CS requirements. Students can use the 38 credits of free electives in fields such as graphic design, mechanical engineering, marketing, biology, physics, architecture, entrepreneurship, business, communications and any other subject offered at CU Denver. The program is composed of five major study areas: mathematics, basic science, required computer science, technical electives, free electives and the CU Denver core curriculum.

The CU Denver undergraduate core curriculum is designed to give the student an exposure to knowledge outside his or her major. For students in the College of Engineering, Design and Computing, courses in the humanities, social sciences and human communications are required.

To be awarded the bachelor of arts in computer science, a student must satisfactorily complete all course work shown in the curriculum below, satisfy all university graduation requirements and maintain at least a 2.0 GPA in all computer science courses attempted (see “Policy on Academic Progress” in the introductory section of this chapter). Students must meet with an undergraduate advisor each semester to assure that they are on track within the degree program and are aware of the current requirements of the program. An additional source of information is the BA-CS Undergraduate Advising Handbook available online on the department’s website. Students must complete a 30-hour checkout before registering for the last 30 semester hours of their program. In addition, each student must complete an approved graduation plan within the academic year of their intended graduation date. For advising policies see BA-CS Handbook.

Note: Prerequisites must be taken before a course that requires them. Co-requisites are to be taken concurrently. Prerequisites will be strictly enforced.

Computer Science Scholars Program: Dual BA/MS

The Computer Science (CS) Scholars Program provides high-performing and motivated undergraduate students the opportunity to begin graduate work at the master’s level while completing the undergraduate degree in CS. In the process, it allows students to receive dual credit for up to 12 hours of graduate-level computer science courses for both the Bachelor of Arts (BA) and the Master of Science (MS) degree. This accelerates the time to obtain a graduate degree for the student, saving both time and expense.

The following guidelines are applied to students in the BA Scholars Program:

- If accepted, students remain in an Undergraduate status until receiving their BA degree, then move into a Graduate status with an intent of completing the MS in Computer Science within a year.
- Students can take up to four graduate courses while in an Undergraduate status.
- Complete the following courses while in undergraduate status including all prerequisites: CSCI 3453: Operating Systems, CSCI 4591: Computer Architecture, MATH 2411 and MATH 3195: Linear Algebra and Differential Equations.
- Students must meet with a CS Graduate advisor within a semester of acceptance into the Dual BA/MS Program.
- Students with a prior associates or bachelor degree completing the BACS may apply for the Dual BA/MS Program their last semester.

To apply for the Dual BA/MS Program, students must:

- Be a full-time undergraduate student in computer science at CU Denver in good standing, with a minimum of 60 credit hours completed toward the BACS degree.
- Complete the following courses: MATH 2411, CSCI: 3412: Algorithms, CSCI 3453: Operating Systems Concepts, and CSCI 3287: Database Systems.
- Commit to completing the following two courses while in undergraduate status: CSCI 4591: Computer Architecture and MATH 3195: Linear Algebra and Differential Equations.
- Have a minimum cumulative GPA of 3.3 or a 3.5 GPA in CS major coursework.

Undergraduate Certificate in Cybersecurity and Secure Computing

The goal of the undergraduate certificate of Cyber Security & Secure Computing program is to reduce vulnerability in the national information infrastructure by promoting higher education and research to help prepare cyber defense professionals for careers in both the public and the private sector. The curriculum of this certificate has been created to meet all criteria of NICE (National Initiative for Cybersecurity Education) undergraduate level of certification.

Certificate Objectives

This certificate program focuses on both the technical and analytical aspects of advanced cyber security and defense.

Program Objectives

- Master the fundamental concepts of cyber security principles and techniques.
- Learn about potentials for cyber security threats and attacks.
- Master cyber-defense tools, methods, and components to secure systems.
- Learn how to take appropriate measures should a system compromise occur.
- Learn principles and practices for secure computing

Learning Outcomes

- Be able to describe and apply the fundamental concepts of cyber security principles and techniques.
- Be able to analyze potential cyber threats and attacks.
- Be able to use cyber defense tools, methods, and components to properly secure systems.
- Be able to effectively and quickly evaluate and mitigate if systems are threatened or compromised.

Certificate Eligibility

Current students in good standing in an undergraduate computer science program (BA or BS), and those completing their minor in computer science are eligible. Applications from other CU Denver majors or non-degree students will be evaluated based on their current transcript. The student's application is subject to the approval of the computer science and engineering department chair.

Students planning to pursue a Cybersecurity & Secure Computing Certificate in Computer Science and Engineering should apply as early as possible to facilitate course planning, and no later than census date of the semester prior to graduation with their undergraduate degree.

Process to Attain Certificate Objectives

The following classes need to be taken with a grade of C- or better:

- CSCI 3761: Introduction to Computer Networks
- CSCI 3453: Operating Systems Concepts
- CSCI 4034: Theoretical Foundations of Computer Science
- CSCI 4741: Principles of Cybersecurity
- CSCI 4743: Cyber and Infrastructure Defense

Students must take and pass each course with a grade of C- or better. The Cybersecurity & Secure Computing Certificate requires a minimum cumulative GPA of 2.0.

ELECTRICAL ENGINEERING

Chair: Stephen D. Gedney

Program Manager: Annie Bennett

Administrative Assistant: Karla Flores

Office: North Classroom 2615

Telephone: 303-315-7520

Faculty

Professors

Hamid Fardi, PhD, University of Colorado Boulder

Stephen Gedney, PhD, University of Illinois at Urbana-Champaign
Mark Golkowski, PhD, Stanford University
Miloje Radenkovic, PhD, University of Belgrade, Yugoslavia

Associate Professors

Tim Chifong Lei, PhD, University of Michigan
Dan Connors, PhD, University of Illinois Urbana-Champaign
Fernando Mancilla-David, PhD, University of Wisconsin at Madison
Jaedo Park, PhD, The Pennsylvania State University

Assistant Professors

Satadru Dey, PhD, Clemson University
Vijay Harid, PhD, Stanford University
Chao Liu, PhD, Purdue University
Alireza Vahid, PhD, Cornell University

Electrical Engineering Programs

Modern electrical engineering is a very broad and diverse field. Never before has there been such a challenge and opportunity for electrical engineering to serve mankind. Today's electrical engineers are involved in the development of technology, materials and products to improve the quality of life. They are concerned with the generation and transmission of power, the control and utilization of natural and synthetic resources, the communication of data and information and the intelligent use of computers in consumer as well as industrial products and processes. Systems in electrical engineering range in size from microprocessors through megawatt energy conversion systems to global audio and video communication networks.

At CU Denver, the electrical engineering curriculum prepares students for careers in product design, manufacturing, research, development, operation and plant engineering, technical sales and application engineering. The goal is to educate and inspire students to achieve their maximum career potential.

Mission Statement

We provide graduate programs and an ABET-accredited undergraduate program that are accessible to a diverse group of students—students of different racial and cultural backgrounds, full-time students as well as those who have considerable work and family commitments outside their academic learning and students with a wide variety of work experiences.

Undergraduate Information

Entering students begin their program with a solid foundation in mathematics, physics, chemistry and computers. Social science, humanities and communication courses provide a diverse background. Intensive courses follow in the theory and laboratory

application of digital logic and electrical circuits, electromagnetic fields, electronics, computer engineering and digital hardware design, linear systems, controls, electrical machines and power systems and microprocessors. Throughout the entire course of study, students reinforce their understanding of theory through laboratory experience and extensive design projects. A strong background is provided in all of the major fields of electrical engineering: circuits and electronics, microcomputers, signal and image processing, communications, autonomous and robotic systems, power and energy conversion, and automatic control systems and instrumentation. Ethics is an integral part of the curriculum. During the senior year, advanced undergraduate-level courses in different specialty areas, design projects and professional electives allow the student to explore areas of special interest.

Students should supplement this information about the curriculum by consulting a copy of the *Department of Electrical Engineering Advisement Guide*, which may be obtained in the Department of Electrical Engineering office located in North Classroom 2615.

The *Department of Electrical Engineering Advisement Guide* contains the latest information concerning the curriculum as well as guidelines and procedures with which each student should be familiar. To be awarded the bachelor of science in electrical engineering, a student must satisfactorily complete 128 semester hours, satisfy all university graduation requirements and maintain at least a 2.0 GPA in all electrical engineering courses attempted. Appointments to see any of the departmental advisors may be made by calling 303-315-7520.

MECHANICAL ENGINEERING

Chair: Samuel W. J. Welch

Office: North Classroom 2024

Telephone: 303-315-7500

Fax: 303-315-7504

Faculty

Professors:

Peter E. Jenkins, PhD, Purdue, MBA, Pepperdine, Professional Engineer, PE-Texas

Associate Professors:

R. Dana Carpenter, PhD, Stanford University

Kannan N. Premnath, PhD, Purdue University

Ronald A. L. Rorrer, PhD, Virginia Polytechnic Institute and State University, PE-Colorado

Mohsen Tadi, PhD, Virginia Polytechnic Institute and State University

Samuel W. J. Welch, PhD, University of Colorado Boulder

Christopher M. Yakacki, PhD, University of Colorado Boulder

Assistant Professors:

Kai Yu, PhD, Georgia Tech University

Assistant Professor (Clinical Teaching Track):

Maryam Darbeheshti, PhD, University of Denver

Senior Instructor:

Joseph F. Cullen Jr., MS, University of Colorado

Professor Emeritus:

James Gerdeen, PhD, Stanford University

J. Kenneth Ortega, PhD, University of Colorado Boulder

Associate Professor Emeritus:

B. Thomas Arnberg, MS, University of Colorado

Mission Statement

The mission of the Department of Mechanical Engineering is to contribute to the economic development of the state of Colorado and the Denver metropolitan area by providing high-quality bachelor's, master's (MS and MEng) and PhD programs in mechanical engineering for a diverse group of working students.

Program Objectives

The program offered by the Department of Mechanical Engineering of the University of Colorado Denver can be completed in the afternoon and evening hours to accommodate both working and traditional students. The department seeks to graduate a diverse population of students with a bachelor's degrees who within a few years of graduation are able to:

1. be employed by a diverse group of industries, research laboratories and educational institutions
2. pursue careers in engineering, interdisciplinary areas, research and education
3. pursue post-graduate education and advanced degrees.

Undergraduate Information

The mechanical engineer is concerned with satisfying the needs of society using a combination of material, human and economic resources. Mechanical engineering covers a wide spectrum of activities in the engineering profession. These activities include the conversion and transmission of energy and associated power processes; the kinematic, dynamic, strength and wear considerations, as well as economic aspects of the development, design and use of materials, machines and processes; and the analysis, synthesis and control of entire engineering systems.

The mechanical engineering curriculum begins with a strong emphasis on mathematics, physics and chemistry. It continues with a concentration in engineering sciences, including solid and fluid mechanics; thermodynamics, heat and mass transport;

materials; and systems analysis and control. It concludes with laboratory and design courses that demonstrate the ways in which scientific knowledge is applied in the design and development of useful devices and manufacturing processes.

The mechanical engineering program may be roughly subdivided into two-year groupings. In the first two years, the program emphasizes the fundamentals of mathematics and basic science that are essential for an understanding of most branches of engineering. In the last two years of the program, the curriculum emphasizes engineering science and design and provides technical electives in the following areas:

- thermodynamics
- heat transfer
- fluid mechanics
- solid mechanics
- motorsports engineering
- power
- bioengineering
- dynamics and controls
- computer-aided design and manufacturing
- thermomechanical systems
- composite materials
- additive manufacturing

Concurrent Bachelor's/Master's Degrees

In addition to the bachelor of science in mechanical engineering, the department offers a concurrent bachelor's/master's degree. Students wishing to obtain a BS degree with a major in mechanical engineering and either the MS or the MEng degree in mechanical engineering may do so with up to 6 semester hours of 5000-level or above courses applying to both degrees. The 5000-level courses must meet the degree requirements for the graduate degree sought and must be suitable technical electives for the undergraduate degree. This option is open only for students seeking both degrees at CU Denver. Students must meet admission requirements to be accepted into the graduate program. Completion of two 5000-level courses does not guarantee admission into the graduate program. Please see an advisor for restrictions and guidelines.

COLLEGE OF LIBERAL ARTS AND SCIENCES

Dean

Pamela Jansma, Professor of Geography and Environmental Sciences

Associate Deans

Richard Allen, Associate Dean for Teaching, Learning and Curriculum; Professor of Psychology

Laura Argys, Associate Dean for Research and Creative Activities; Professor of Economics

David P. Tracer, Associate Dean for Student Success; Professor of Health & Behavioral Sciences

Marjorie Levine-Clark, Associate Dean for Diversity, Outreach and Initiatives; Professor of History

Kathleen, Bollard, Associate Dean for Faculty and Staff Affairs; Professor of Spanish

Contacts

CLAS Deans Office

North Classroom, Suite 5014

Phone: 303-315-7000

Fax: 303-315-7016

Mailing Address

College of Liberal Arts and Sciences

Campus Box 144

P.O. Box 173364

Denver, CO 80217-3364

Undergraduate Advising Office

North Classroom, 1030

Phone: 303-315-7100

The mission of the College of Liberal Arts and Sciences is to foster academic excellence, to create and impart knowledge critical to a modern society and a global economy, and to ensure the acquisition of skills essential for professional careers and graduate study. Our vision is to enact a new paradigm for a liberal arts education that retains the proven values of a broad education while imparting career-oriented skills throughout the curriculum.

Today's university graduates need to be critical thinkers who are able to apply knowledge and skills from multiple disciplines to unscripted, real-world problems. A College of Liberal Arts and Sciences (CLAS) education involves mastery of essential learning outcomes, such as creative problem solving, oral and written communication, quantitative literacy, intercultural competence, and ethical reasoning, which provide students with the tools to become lifelong learners who are adaptive and innovative. While establishing a broad foundational education, CLAS gives students the opportunity to dig deeply into disciplinary and interdisciplinary majors, which train them in scholarly fields, traditions, and methods of analysis. This combination of breadth and depth prepares students for our twenty-first century world, which requires flexibility and

mobility, as new jobs develop and careers change at an ever-faster pace. CLAS graduates enter a wide variety of occupations and pursue advanced degrees in academia and in professions like law and medicine.

The CLAS curriculum provides rigorous academic programs while offering a number of flexible learning opportunities, such as the Individually Structured Major, to meet our students' varied needs and objectives. The college draws on our downtown location and makes use of the city's many resources through student internships, experiential learning programs, and partnerships with Denver businesses and non-profit organizations. CLAS students have excellent opportunities to participate in first-class faculty research, and the college prides itself on its faculty-mentored undergraduate research programs and applied research in the community.

College of Liberal Arts and Sciences Educational Goals

The College of Liberal Arts and Sciences provides undergraduates at CU Denver with a broad and multilayered education consisting of:

1. **In-depth knowledge** of the major disciplines of the humanities, natural and physical sciences, and social and behavioral sciences that call the College of Liberal Arts and Sciences home.
2. **Intellectual and practical skills**, including inquiry and analysis, critical thinking, creative thinking, written communication, oral communication, university-level reading, quantitative literacy, information literacy, teamwork, and complex problem solving-practiced at progressively more challenging levels.
3. **Personal and social responsibility**, including civic knowledge and engagement (local and global), intercultural knowledge and competence, ethical reasoning and action, and foundation of skills for lifelong learning.
4. **Integrative and applied learning**, synthesizing knowledge and skills from multiple disciplines and experiences to address complex, real-world problems in our diverse local, national and global communities.

A CU Denver liberal education combines world-class knowledge in specific disciplines with the comprehensive skills and dispositions that students need for success and that our society needs its citizens to possess. In a world where content knowledge rapidly becomes obsolete and where graduates may have a dozen different jobs, these skills and dispositions are crucial. Employers increasingly look for employees who can think critically, communicate clearly, and solve complex problems. A liberal education may be the most vocational education that today's student can earn. A liberal arts and sciences education truly is "learning with purpose."

Academic Advice and Information

Students in the college are expected to assume responsibility for planning their academic programs in accordance with college policies and major requirements. To

assist undergraduate students, the college maintains the CLAS Academic Advising Office. Students meet with a CLAS staff advisor upon matriculation into the college through one of the established orientations for first-year freshmen or transfer students. Undergraduate students can find their assigned CLAS staff advisor in the “Advisor” box in their Student Center. The CLAS staff advisor advises undergraduate students about CU Denver and CLAS graduation requirements, and certifies that CU Denver core requirements and CLAS graduation requirements have been met.

As soon as students have determined a major, minor or certificate granting program they should meet with a faculty advisor as early in their career as possible. The faculty advisor will be responsible for the student’s major, minor or certificate advising and for certification of the completion of program requirements at graduation.

Students planning to ultimately earn a degree from one of the professional schools should also see an advisor in that school or college.

Departments and Programs

(For Graduate Programs and information please refer to the Graduate catalog.)

College of Liberal Arts and Sciences

Programs

Certificate

- Allied and Professional Health Sciences Post Baccalaureate Certificate
- Digital Studies Certificate
- Public, Non-Profit and Community Leadership Undergraduate Certificate

Dual Degree

- 4+1 International Studies to Masters in Humanities or Social Sciences
- 5 year BA/BS and Master in Public Health

Anthropology

Programs

Bachelor of Arts

- Anthropology BA

Non Degree

- Anthropology Minor

Chemistry

Programs

Bachelor of Science

- Biochemistry BS
- Chemistry BS
- Chemistry BS, ACS Certified

Certificate

- Biochemistry Certificate

Dual Degree

- Chemistry BS/MS

Non Degree

- Chemistry Minor

Communication Programs

Bachelor of Arts

- Communication BA

Certificate

- Health Communication Certificate
- Mediation Undergraduate Certificate
- Strategic Communication Undergraduate Certificate

Non Degree

- Communication Minor

Economics Programs

Bachelor of Arts

- Economics BA

Certificate

- Health and Development Economics Undergraduate Certificate

Dual Degree

- Economics BA/Mathematics BS Dual Degree

Non Degree

- Economics Minor

Other Programs

- Economics BA/MA

English Programs

Bachelor of Arts

- English Writing, Rhetoric, and Technology BA
- English, Creative Writing Option BA
- English, Film Studies Option BA
- English, Literature Option BA

Non Degree

- Creative Writing Minor
- English Writing, Rhetoric, and Technology Minor
- Film Studies Minor
- Literature Minor

Ethnic Studies Programs

Bachelor of Arts

- Ethnic Studies BA

Certificate

- American Indian Studies Certificate
- Cultural Diversity Studies Undergraduate Certificate

Non Degree

- Ethnic Studies Minor

Geography and Environmental Sciences Programs

Bachelor of Arts

- Geography - BA
- Geography - Environment, Society and Sustainability Option BA
- Geography - Environmental Science Education Option BA
- Geography - Environmental Science Option BA
- Geography - Urban Studies and Planning BA

Certificate

- Geographic Information Science Undergraduate Certificate
- Sustainable Urban Agriculture Undergraduate Certificate

Non Degree

- Environmental Sciences Minor
- Geography Minor

- Urban and Regional Planning Minor

Health and Behavioral Sciences Programs

Bachelor of Arts

- Public Health BA

Bachelor of Science

- Public Health BS

Non Degree

- Public Health Demography Minor
- Public Health Minor

Health Humanities Programs

Non Degree

- Health Humanities Minor

History Programs

Bachelor of Arts

- History BA

Certificate

- Immigration Studies

Non Degree

- History Minor

Humanities Programs

Minors

- Humanities Minor

Individually Structured Major Programs

Bachelor of Arts

- Individually Structured Major - Integrated Studies BA

- Individually Structured Major - Intercampus Interdisciplinary Option BA
- Individually Structured Major - Interdisciplinary Studies BA
- Individually Structured Major- Integrated Health Sciences Option BA

Integrative Biology Programs

Bachelor of Science

- Biology BS

Certificate

- Biotechnology Certificate
- Environmental Stewardship of Indigenous Lands Undergraduate Certificate

Non Degree

- Biology Minor

Interdisciplinary Programs

International Studies Programs

Bachelor of Arts

- International Studies BA

Dual Degree

- 4+1 International Studies BA to Political Science MA

Other Programs

- International Studies Minor

Law Studies Programs

Non Degree

- Law Studies Minor

Mathematical and Statistical Sciences Programs

Bachelor of Science

- Mathematics - Applied Option BS
- Mathematics - Data Science Option BS
- Mathematics - Probability and Statistics Option BS

- Mathematics BS

Certificate

- Applied Statistics Undergraduate Certificate
- Data Science Undergraduate Certificate

Dual Degree

- 5 Year Mathematics BS/Applied Mathematics MS
- 5 Year Mathematics BS/Statistics MS

Minors

- Data Sciences Minor

Non Degree

- Mathematics Minor

Modern Languages Programs

Bachelor of Arts

- French BA
- Spanish Language, Literature and Culture BA
- Spanish, International Language and Culture for the Professions Option BA

Certificate

- Spanish for International Business Certificate

Minors

- Linguistics Minor

Non Degree

- Chinese Studies Minor
- French Minor
- Spanish Minor

Philosophy Programs

Bachelor of Arts

- Philosophy BA

Dual Degree

- 4+1 Philosophy to Master of Humanities

Minors

- Philosophy of Science Minor

Non Degree

- Ethics Minor
- Philosophy Minor

Physics Programs

Bachelor of Science

- Physics - Pure and Applied Physics Option BS

Certificate

- Scientific Foundations of Technical Innovation Certificate

Non Degree

- Astrophysics Minor
- Physics Minor

Other Programs

- Biophysics Minor

Political Science Programs

Bachelor of Arts

- Political Science - Public Policy Option, BA
- Political Science BA

Certificate

- Labor Leadership Undergraduate Certificate
- Middle Eastern Politics Undergraduate Certificate

Dual Degree

- 4+1 Political Science BA to MA

Non Degree

- Political Science Minor

Psychology Programs

Bachelor of Arts

- Psychology BA

Bachelor of Science

- Psychology BS

Non Degree

- Psychology Minor

Other Programs

- Behavioral Cognitive Neuroscience Minor

Religious Studies Programs

Non Degree

- Religious Studies Minor

Social Justice Programs

Non Degree

- Social Justice Minor

Sociology Programs

Bachelor of Arts

- Sociology BA
- Sociology BA - Gender and Society Concentration

Certificate

- Criminology Certificate
- Families and Social Welfare Certificate
- Sociology of Health and Medicine Certificate

Dual Degree

- 4+1 Sociology BA to MA

Non Degree

- Sociology Minor

Sustainability Programs

Non Degree

- Sustainability Minor

Women's and Gender Studies Programs

Non Degree

- Women's and Gender Studies Minor

ANTHROPOLOGY

Chair: Tammy Stone

Program Assistant: Connie Turner

Office: North Classroom Building 4002

Graduate Advisor: Sarah Horton

Undergraduate Advisor: Tiffany Terneny

Telephone: 303-315-7328

Fax: 303-315-7336

Faculty

Professors:

Tammy Stone, PhD, Arizona State University

David Tracer, PhD, University of Michigan

Associate Professors:

Christopher Beekman, PhD, Vanderbilt University

Sarah Horton, PhD, University of New Mexico

Charles Musiba, PhD, University of Chicago

Marty Otanez, PhD, University of California-Irvine

Assistant Professors:

Jamie Hodgkins, PhD, Arizona State University

Anna Warrener, PhD, Washington University

Christine Sargent, PhD, University of Michigan

Emeritus:

John Brett, PhD, University of California, San Francisco and Berkley

Instructor:

Tiffany Terneny, PhD, University of Texas-Austin

Adjunct Faculty and Affiliated Faculty:

Sharon Devine, PhD, University of Colorado

Jean Scandlyn, PhD, Columbia University

Caley Orr, PhD, Arizona State University

Undergraduate Information

Anthropology Major

Anthropology is the study of human origins and evolution, the present conditions of human life and the prospects for the future. It considers human beings as biological and social entities and seeks to explain both diversities and commonalities of peoples and cultures. For undergraduates, anthropology provides a rich overview of human life. It also introduces them to a variety of skills and practical research methods anthropologists apply in laboratory and field studies of the ecological constraints on human existence, the cultural bases of individual and organizational behavior and the problems and circumstances relating to the maintenance of today's healthy, productive human action in general.

Anthropological training provides entry to a variety of careers in archaeology, museology, education, community service, public administration, public health, international affairs and business. The specific skills it provides are useful to students of environmental design, city planning, community development, the medical and nursing professions and allied health sciences, law, public affairs and secondary education.

[Click here](#) to see the requirements for the major.

Departmental Honors Requirements

Students wishing to graduate with departmental honors in anthropology must have a cumulative GPA of at least 3.5, with a 3.7 minimum GPA in anthropology for *cum laude* (3.8 for *magna cum laude* and 3.9 for *summa cum laude*), as well as prepare an honors thesis of high quality. They must also take ANTH 4810, Integrating Anthropology. Interested students should inquire in the department no later than two semesters before graduation.

Anthropology Minor

[Click here](#) to see the requirements for a minor.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

CHEMISTRY

Chair: Haobin Wang

Office: Science Building, 3071 E

Telephone: 303-315-7634

Fax: 303-315-7633

Website: clas.ucdenver.edu/chemistry/

Faculty

Professors:

Robert Damrauer, PhD, Massachusetts Institute of Technology

David Engelke, PhD, Washington University (St. Louis)
Doris Kimbrough, PhD, Cornell University
Hai Lin, PhD, University of Science and Technology of China

Scott Reed, PhD, University of Oregon

Haobin Wang, PhD, Wayne State University
Xiaotai Wang, PhD, University of Virginia

Associate Professors:

Jefferson Knight, PhD, Yale University

Yong Liu, PhD, University of Michigan

Xiaojun Ren, PhD, Jilin University

Marino Resendiz, PhD, University of California, Los Angeles

Liliya Vugmeyster, PhD, State University of New York at Stony Brook

Assistant Professors:

John D. (Nick) Fisk, PhD, University of Wisconsin

Emilie Guidez, PhD, Iowa State University

Jung-Jae Lee, PhD, University of Notre Dame

Clinical Associate Professor:

Margaret Bruehl, PhD, Northwestern University
Marta Maroń, PhD, University of Colorado Boulder

Senior Instructor:

Priscilla Burrow Crocker, PhD, University of Colorado Boulder

Instructors:

Vanessa Fishback, PhD, University of Northern Colorado
Kyoung Kim, PhD, University of Notre Dame

Undergraduate Information

Chemistry is the study of matter and its transformations, from the smallest scale - atoms and subatomic particles - to the macromolecules that provide structure and function to living organisms. Chemistry is often called the “central science” because it touches on other STEM disciplines including physics, biology, medicine, environmental science, geology, mathematics, materials science, technology, and many others. A degree in

Chemistry or Biochemistry can prepare you for a wide range of meaningful careers discovering and applying scientific knowledge. Modern chemistry combines computer modeling and experimental observation using procedures that are much safer and more environment-friendly than in past generations. Learning chemistry also teaches you important critical thinking skills that can be valuable in any career.

For more information regarding the Biochemistry Major or double major options, contact the Biochemistry Major Advisor: Dr. Vanessa Fishback vanessa.fishback@ucdenver.edu.

For more information regarding the Chemistry Major or double major options contact the Chemistry Major Advisor: Dr. Marta K. Maroń marta.maron@ucdenver.edu.

All Chemistry and Biochemistry Majors should contact their respective Major Advisor every semester.

[Click here to learn about the requirements for the Major in Chemistry.](#)

[Click here to learn about the requirements for the Major in Biochemistry.](#)

[Click here to learn about the requirements for the American Chemical Society Certified Major in Chemistry.](#)

Departmental Honors

Qualified students are encouraged to participate in the Chemistry Honors Program. Three levels of honors are awarded by the CU Denver Chemistry Department.

To earn *cum laude* honors in Chemistry or in Biochemistry, a student must satisfy one of the following criteria:

1. an overall GPA of 3.2 or better and a chemistry GPA of 3.5 or better; or
2. an overall GPA of 3.2, a chemistry GPA of 3.2 or better, and six hours of CHEM 4880 Directed Research, spread over a minimum of two semesters.

To earn *magna cum laude* or *summa cum laude* honors in Chemistry or Biochemistry, a student must satisfy each of the following criteria:

1. an overall GPA of 3.2 or better,
2. a chemistry GPA of 3.5 or better;
3. six hours of CHEM 4880 Directed Research, spread over a minimum of two semesters with a GPA of 3.2 or better;
4. Presentation and approval of a thesis based on the independent study research to a faculty advisory committee. If the thesis is approved, the faculty committee can recommend graduation at either the magna cum laude (high) or summa cum laude (highest) level.

Guidelines for Thesis

The advisory committee is to include three faculty from the University, including at least one faculty member from Chemistry and at least one faculty member from outside the department. If the PI is chemistry department faculty, then the PI is the chair of the committee. If the PI is faculty in another department, the student needs to recruit a Chemistry faculty member who has familiarity with the research topic to serve as

committee chair. The student should have the committee members in place during the first month of the semester in which the student plans to graduate.

The committee chairperson by agreeing to serve validates that the presented research has been performed by the student.

The thesis is written using the primary journal style of the research sub-specialty. The student gives committee members the finished thesis two weeks prior to the thesis presentation unless the student has been otherwise informed by the committee members. The student organizes the time and place of examination. The last date to schedule the oral examination of the thesis is the Friday before the last week of the regular semester. This gives the student two weeks to make corrections and changes specified by the committee. The last day to turn in a completed and signed off thesis is the Friday of finals week at 4 pm. The committee signs the Thesis Examination Form, gives a copy to departmental advisor along with a copy of the thesis.

Chemistry Minor

For more information contact the Chemistry Minor Advisor: Dr. Priscilla Burrow priscilla.burrow@ucdenver.edu. All Chemistry minors should contact the minor advisor the semester prior to the semester of planned graduation.

[Click here to learn about the requirements for a Minor in Chemistry.](#)

Certificate in Biochemistry

For more information contact the Biochemistry Major Advisor: Dr. Vanessa Fishback vanessa.fishback@ucdenver.edu. Students applying for the certificate should contact the major advisor during the semester prior to the semester of planned certificate award.

[Click here to learn about the Certificate in Biochemistry.](#)

Chemistry BS/MS Program

[Click here to learn about our BS/MS Program.](#) For more information contact the Graduate Advisor Dr. Scott Reed at scott.reed@ucdenver.edu.

Graduate Information

At the graduate level, an MS degree program is offered. Students with MS degrees have job opportunities in research and technical laboratory services. In addition, flexible programs can be designed to combine chemical knowledge and skills with other interests of the MS-level student (e.g., biology or environmental science). Please go to the Graduate catalog to read about our graduate programs.

COMMUNICATION

Chair: Lisa B. Keränen

Graduate Director: Hamilton Bean

Undergraduate Director: Stephen J. Hartnett

Program Assistant: Michelle A. Médal

Undergraduate Advisors: e. j. Yoder and Yvette Bueno Olson

Internship Director: Megan Hurson

Office: Student Commons Building, 1201 Larimer Street, 3rd Floor, Room 3014

Telephone: 303-315-1919

Faculty

Professors:

Sarah Fields, PhD, University of Iowa

Stephen J. Hartnett, PhD, University of California at San Diego

Associate Professors:

Hamilton Bean, PhD, University of Colorado at Boulder

Larry Erbert, PhD, University of Iowa

Amy Hasinoff, PhD, University of Illinois at Urbana-Champaign

Lisa B. Keränen, PhD, University of Pittsburgh

Associate Professors Clinical Track:

Patrick Shaou-Whea Dodge, PhD, University of Denver

Assistant Professors:

Soumia Bardhan, PhD, University of New Mexico

Catalina M. de Onis, PhD, Indiana University

Mia Fischer, PhD, University of Minnesota

Senior Instructors:

Kristy Frie, MA, Regis University

Yvette Bueno Olson, PhD, University of Miami

e. j. Yoder, PhD, University of Denver

Instructors:

Megan Hurson, PhD, University of Colorado Boulder

Xiyuan Liu, PhD, University of Illinois at Chicago

Diann Logan, MA, University of Colorado Denver

James McNeil, MA, University of Colorado Denver

Ali Nassiri, MA, University of Colorado Denver

Tamara Powell, PhD, University of California San Diego

Emeritus:

Brenda J. Allen, PhD, Howard University

Sonja K. Foss, PhD, Northwestern University

James F. Stratman, PhD, Carnegie-Mellon University

Barbara J. Walkosz, PhD, University of Arizona

The Department of Communication at the University of Colorado Denver enriches understanding of the roles of communication in everyday life, organizational settings and public affairs. While the roots of the study of communication trace back to the ancient arts of philosophy, rhetoric, and aesthetics, its contemporary practices speak to the opportunities and dilemmas of participating in a globalized, mediated and multicultural society. A major in communication develops knowledge and skills that are required for many different fields, including advertising, business, international relations, education, public service, government and politics, health care and public relations. Because college graduates are expected to change careers approximately seven times over the course of their lives, and because employers across a wide variety of fields seek applicants with strong oral and written communication skills, a degree in communication is a versatile and timely choice.

The department's classes are organized in five pathways, including community service and public affairs, global and intercultural communication, health communication, media and cultural studies, and strategic communication. In addition, we offer a number of Inquiry and Analysis classes that bridge these areas. Across these pathways, students are encouraged to merge theoretical studies with practical applications, including in-service learning courses, travel study, internships, social justice projects and other experiential modes of learning. The Department of Communication seeks to cultivate the knowledge and ability to use communication to create a more equitable and humane world.

Undergraduate Information

Communication Major

Click [here](#) to learn about the requirements for a major in Communication.

Academic Honors

Academic honors are conferred at graduation on students whose achievements are above those required for the bachelor's degree. Three levels of honors are available to students. *Cum laude* honors are automatically earned by communication majors with a cumulative GPA of 3.0 and a GPA of 3.5 in 39 hours of communication courses. *Magna cum laude* and *summa cum laude* honors require the completion of *COMM 4700-Thesis and Project Practicum*. Additional information about academic honors may be obtained from the undergraduate advisor in communication.

Undergraduate Internships

Internships are opportunities for students to work in communication-related positions in the community and to receive academic credit for that work. These internships provide a way for students to maximize their communication background and their understanding of concepts, theories, models and frameworks within the communication discipline.

Students typically receive 3 hours of academic credit for a one-semester internship in which they work between 15 and 30 hours a week.

For further information about internships, contact Megan Hurson at megan.hurson@ucdenver.edu .

Communication Minor

Click here to learn about the requirements for a minor in Communication.

Undergraduate Certificates

Click here to learn about the requirements for an Undergraduate Certificate in Strategic Communication.

Click here to learn about the requirements for an Undergraduate Certificate in Health Communication.

Click here to learn about the requirements for an Undergraduate Certificate in Mediation.

Click here to learn about the requirements for an Undergraduate Certificate in Digital Studies.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

ECONOMICS

Chair: Brian Duncan

Program Assistant: Christine Lukvec

Office: Lawrence Street Center, LW-470

Telephone: 303-315-2030

Faculty

Professors:

Laura M. Argys, PhD, University of Colorado Boulder

Brian J. Duncan, PhD, University of California at Santa Barbara

Daniel I. Rees, PhD, Cornell University

W. James Smith, PhD, University of Colorado Boulder

Buhong Zheng, PhD, West Virginia University

Associate Professors:

Andrew I. Friedson, PhD, Syracuse University

Hani Mansour, PhD, University of California at Santa Barbara

Assistant Professors:

Ryan Brown, PhD, Duke University
Chloe East, PhD, University of California Davis
Maulik Jagnani, PhD, Cornell University

Phillip Luck, PhD, University of California Davis
Andrea Velasquez, PhD, Duke University

Clinical Teaching Assistant Professors:

Enoch Cheng, PhD, University of California-Los Angeles
Ernest Boffy-Ramirez, University of California at Santa Barbara
Soojae Moon-Anderson, University of Colorado Boulder

Instructors:

Debbie Evercloud, PhD, University of Virginia
Nicholas Golding, MA, Ohio State University
Lawrence Hamelin, MA, University of Colorado Denver
Kyle J. Hurst, MA, Baylor University
Kyle Montanio, PhD, University of Rhode Island
George K. Quansah, MA, University of Colorado Denver
Yue Shen, PhD, Queen's University
Kawin Thamtanajit, PhD, University of Delaware
Chun-Chieh Hu, PhD, Syracuse University

Economics is the science of human behavior in market and non-market contexts. The rigorous and general scientific approach that characterizes economics lends itself to a remarkably wide field of practical application. Economists regularly apply their methods of analysis in fields such as government policy, international trade and finance, economic development, portfolio management and banking. But economics is increasingly seen as providing important insight into an enormous variety of social issues, including health care provision and health-related behaviors, law, criminal activity, environmental and natural resource problems, political activity, education, marketing and sports. The broad and rigorous training of economics majors accounts for the significant demand for their services in virtually every industry and government agency. Economics provides excellent preparation for advanced graduate study as well. Recent studies indicate that economics is a preferred undergraduate degree for those wishing to move on to prestigious business graduate programs and law schools.

Undergraduate Information

Economics Major

[Click here to learn about the requirements for an Economics Major.](#)
[Click here to learn about the requirements for an Economics BA and Mathematics BS dual degree.](#)

Economics Minor

[Click here to learn about the requirements for an Economics Minor.](#)

Economics Certificate

[Click here to learn about the requirements for an Health and Development Economics Undergraduate Certificate.](#)

Honors in Economics

Students wishing to earn departmental honors in economics should consult with their advisor no later than the beginning of their senior year.

Cum laude will be awarded to students who complete an economics major with a 3.5 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight such courses, and either two additional electives in economics beyond those required for the major, taken at the 4000 or higher level, or an acceptable honors thesis. The thesis must be approved by a three-member committee of department faculty and will include a presentation of the results to that committee. Students should register for the thesis, using ECON 4850 as the course number, as a 3-semester hour independent study, in addition to the regular requirements for the major.

Magna cum laude will be awarded to students who complete an economics major with a 3.7 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight courses, and who complete an honors thesis designated as “acceptable” by their thesis committee.

Summa cum laude will be awarded to students who complete an economics major with a 3.88 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight courses, and who complete an honors thesis designated as “outstanding” by their thesis committee.

In order to be recognized in the graduation program as “Honors Pending,” a draft of the thesis must be submitted to the chair of the committee four weeks prior to the end of the semester. The oral presentation and other requirements must be completed one week before graduation.

In order to be recognized in the graduation program with the specific honors degree being conferred, e.g., *summa*, *magna*, etc., students must turn in the completed final copy of the honors thesis four weeks prior to the end of the semester, along with meeting other requirements by the week before graduation. Otherwise, recognition will come with the diploma after graduation.

Students who do not have an advisor should contact the department for assignment to an advisor. Students should meet with their advisor at least twice a year.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

ETHNIC STUDIES

Chair: Faye Caronan

Program Assistant: Sothary Chea M.S

Office: Plaza Building, Ste. 102

Telephone: 303-315-7205

Fax: 303-315-7206

Faculty

Professor:

Donna Martinez, PhD, University of Washington

Associate Professor:

Faye Caronan, PhD, University of California

Paula Espinoza, PhD, University of Colorado

Rachel E. Harding, PhD, University of Colorado

Senior Instructors:

Dennis Green, ABD, University of New Mexico

Ethnic Studies programs are designed to help students majoring in the liberal arts and sciences develop a sophisticated and broad understanding of ethnicity and its role in contemporary American society. They provide students with the theories and concepts needed to comprehend and interpret relations between and among ethnic groups in the United States. Students are better prepared to live and work in a diverse society when educational institutions foster a positive learning environment in which differences contained within various U.S. communities can be studied not as a social problem, as is often the case, but for their history of struggles and contributions.

The interdisciplinary nature of the ethnic studies program curriculum provides students the opportunity, through academic investigation, to develop a greater understanding of the cultural diversity of the present-day United States and to acquire skills needed in professional and social service fields. This multidisciplinary, comparative approach to contemporary and historical research methodologies provides the basis for students to analyze the diverse social, economic, political and cultural facets of ethnic groups in the United States. Special emphasis is given to new perspectives that recover the history, creative expression of underrepresented groups.

Programs and courses reflect prevailing thought in ethnic studies, draw parallels between various groups in the United States and link the studies of their country of origin with current and historical research on race and ethnic relations in the United States. They reflect critical analysis of the dominant perspectives through which ethnic groups have been described and perceived. Also investigated are the intersections of ethnicity with structures of political, educational, gender, business and economic, social and cultural power, all of which are emphasized through the study of materials and works by and about previously excluded groups. The cultural processes through which ethnic groups have sustained or altered their cultural identities are emphasized, as well as the pressures faced by members of various ethnic groups to maintain traditional values and conform to mainstream U.S. society.

[Click here for information about the requirements for the Major in Ethnic Studies.](#)

[Click here for the requirements for the Minor in Ethnic Studies.](#)

[Click here for information about the Undergraduate Certificate in Cultural Diversity Studies.](#)

GEOGRAPHY AND ENVIRONMENTAL SCIENCES

Chair: Peter Anthamatten, PhD

Program Assistant: Sue Eddleman

Administrative Assistant: Meron Ayele

Office: North Classroom, 3016

Telephone: 303-315-7525

Fax: 303-315-7526

Faculty

Professors:

Anne Chin, PhD, Arizona State University

Pamela Jansma, PhD, Northwestern University (CLAS Dean)

Professors Emeritus:

Wesley E. LeMasurier, PhD, Stanford University

Martin Lockley, PhD, University of Birmingham, England

John W. Wyckoff, PhD, University of Utah

Associate Professors:

Peter Anthamatten, PhD, University of Minnesota

Frederick B. Chambers, PhD, Arizona State University
Rafael Moreno-Sanchez, PhD, Colorado State University
Brian Page, PhD, University of California, Berkeley
Gregory Simon, PhD, University of Washington
Bryan S. Wee, PhD, Purdue University

Associate Professors- Clinical Teaching Track:

Rudi Hartmann, PhD, Technical University of Munich

Assistant Professors-Clinical Teaching Track:

Matthew Cross, Ph.D, University of Colorado Denver

Assistant Professors:

Christy Briles, PhD, University of Oregon

Benjamin Crawford, PhD, University of British Columbia, Vancouver

Katharine Kelsey, PhD, University of Colorado Boulder

Senior Instructors:

Amanda Weaver, PhD, University of Denver

Thomas Duster, PhD, University of Notre Dame

Instructors:

Kirsten Christensen, MSS, MURP, University of Colorado Denver

Yi-Chia Chen, PhD, Louisiana State University

Lecturers:

Richard Ashmore

Tim Connors

Hope Dalton

Richard DeGrandchamp

James Fleming

Jeanne Mayne

David Murray

Xuantong Wang

Undergraduate Information

Geography is a science that focuses on the spatial analysis of human/physical patterns and processes. Geographers attempt to identify the factors affecting the distribution of people and their activities on the surface of the earth and to provide meaningful solutions to problems faced by societies. This discipline is an ideal major for the liberal arts student, providing exposure to the concepts and techniques utilized in investigating

the physical sciences, environmental and sustainability issues, socioeconomic problems and planning policies. The major offers 5 degree options: 1) General Geography, 2) Environmental Science, 3) Environment, Society & Sustainability, 4) Urban Studies & Planning, and 5) Environmental Science Education.

The program offers a distinctive curriculum that combines a broad and integrative scientific education with state-of-the-art training in geo-spatial analysis (e.g., computer mapping, GIS, remote sensing). The program is designed to provide the student interested in physical, social or environmental geography with the background necessary for obtaining a rewarding career in government (federal, state, local) or private industry, as well as preparing students for graduate study.

[Click here to see the requirements for a Geography Major.](#)

[Click here to see the requirements for a Geography Major-Environmental Science Option.](#)

[Click here to see the requirements for a Geography Major-Environment, Society and Sustainability Option.](#)

[Click here to see the requirements for a Geography Major-Urban Studies and Planning Option.](#)

[Click here to see the requirements for a Geography Major-Environmental Science Education Option.](#)

Minors

[Click here to see the requirements for an Environmental Sciences Minor.](#)

[Click here to see the requirements for a Geography Minor.](#)

[Click here to see the requirements for an Urban and Regional Planning Minor.](#)

Certificates

[Click here to see the requirements for a Geographic Information Science Certificate.](#)

[Click here to see the requirements for a Sustainable Urban Agriculture Certificate.](#)

Departmental Honors

Departmental honors is a privilege for students who demonstrate exceptional academic performance and promise at CU Denver. The minimum criteria for honors in GES are an overall GPA of 3.3 in all courses at CU Denver (minimum of 30 semester hours for transfer students) and a GPA of 3.75 for all courses taken in the Department of Geography and Environmental Sciences (regardless of the BA option that students are pursuing). A student who meets these criteria shall work with a GES faculty sponsor who agrees to guide an honors thesis. Students must successfully complete and defend an honors thesis that demonstrates independent research, written and presentation skills. Additionally, students are required to sign up for and successfully complete 3 honors thesis credits the semester that they are graduating with honors. Departmental honors will be awarded based on successful completion and defense of the honors thesis, subject to faculty sponsor and committee approval. For more information, please contact the GES undergraduate advisor and/or chair.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

HEALTH AND BEHAVIORAL SCIENCES

Department Chair: Sara Yeatman

Undergraduate Program Director: Meng Li

Program Assistant: Anne Marie Summers

Mailing Address: Program in Health and Behavioral Sciences, Campus Box 188, P.O. Box 173364, Denver, CO 80217-3364

Office Location: North Classroom 3018

Telephone: 303-556-4300

E-mail: meng.li@ucdenver.edu

Faculty

Professors:

Karen Spencer, PhD, Indiana University

David P. Tracer, PhD, University of Michigan

Associate Professors:

jimi adams, PhD, Ohio State University

Patrick Krueger, PhD, University of Colorado

Meng Li, PhD, Rutgers University

Ronica Rooks, PhD, University of Maryland College Park

Sara Yeatman, PhD, University of Texas Austin

Assistant Professors:

Jennifer Boylan, PhD, University of Wisconsin-Madison

Visiting Assistant Professors:

Hyeyoung Oh Nelson, PhD, University of California Los Angeles

Jorge Ivan Ramirez, PhD, Michigan State University

Professors Emerita:

Debbi Main, PhD, University of Colorado

Research and Clinical Faculty:

Sharon Devine, PhD, University of Colorado

Jean Scandlyn, PhD, Columbia University

The mission of the health and behavioral sciences (HBSC) program is to apply social science theory and innovative research methods to critically address emerging issues in health. The program trains students to confront issues affecting the health of communities and populations by focusing on social determinants of health and diseases. These determinants can be more influential on population health than the health care system.

The program's overarching framework integrates social, cultural and biomedical perspectives to understand the underpinnings of health and the conditions essential for its creation and maintenance. Students and faculty conduct interdisciplinary research on topics including emerging diseases, maternal/child health, substance abuse, health disparities and global health. Graduates are innovative researchers, effective educators and leaders directly engaged in the practice of public health.

Undergraduate Information

Public health is working to protect the environment, identifying sources of illness in population groups, controlling disease outbreaks, evaluating the economic impacts of changing demographics, developing interventions to promote healthy behavior, and producing health policy legislation. Public health draws from a broad array of disciplines, such as the social and behavioral sciences, medicine, nursing, pharmacy, physical therapy, business, economics, statistics, epidemiology, law and biology, and each provides unique insights for the diverse set of activities involved in public health practice.

In response to the tremendous career and research opportunities in public health, the Department of Health and Behavioral Sciences in the College of Liberal Arts and Sciences (CLAS), in collaboration with the Colorado School of Public Health (CSPH), created an undergraduate major in public health. Most core classes for the public health major are team taught with one faculty member from the downtown campus (CLAS) and the other from the Anschutz campus (CSPH).

This degree is designed to accommodate as many student interests as possible. At CU Denver, we are committed to helping students develop their own individualized educational path; we strive to serve the needs of both the student who wishes to specialize in communication strategies for effective public health education campaigns, as well as the student who wants to hasten the translation of the latest bench science technologies into public health practice. To this end, the major consists of both BA and BS tracks.

Two options are available for the undergraduate major in public health: Bachelor of Arts (BA) or Bachelor of Science (BS). After completion of the program, students will have a broad background to serve as the foundation for a variety of career paths, such as immediate entry into public health positions, background training for a professional school (including but not limited to medical, dental, nursing, pharmacy or law school), or the pursuit of an advanced degree such as a master's or Ph.D. in a range of social, behavioral or natural sciences.

Bachelor of Arts (BA)

Students in the BA program develop a specialty in the social sciences and public health.

[Click here for information about the requirements for the BA in Public Health.](#)

Bachelor of Science (BS)

The Bachelor of Science in Public Health is designed to fulfill all medical school prerequisites in a four-year course of study.

Students in the BS program develop a specialty in the natural sciences and public health.

[Click here for information about the requirements for the BS in Public Health.](#)

Public Health Demography Minor

The minor in demography gives students focused training in theories and methods of demography. It will help students develop important skills in critical thinking and quantitative reasoning, and will prepare them for graduate level training in demography or related fields and for jobs requiring an understanding of population dynamics. Demographers are frequently employed in occupations including academia, risk assessment, marketing, consulting, non-profits, and various local, state, and federal government agencies.

[Click here for information about the requirements for the Minor in Public Health Demography.](#)

Public Health Minor

The undergraduate minor in public health is designed to provide students with a basic understanding of the social, cultural and biological dimensions of health. The minor curriculum provides students with the intellectual and methodological tools needed to understand the joint bio-cultural determinants and contexts of health, health care and public health.

Graduates with a minor in public health will be prepared for pursuit of graduate degrees in a broad range of fields, including the natural, social and behavioral sciences; public health; law; medicine; dentistry; pharmacy; nursing; business administration; and health services research. The program is especially appropriate for students intending to pursue careers in public health, as well as primary care specialties in medicine, nursing or health policy and administration.

[Click here for information about the requirements for the Minor in Public Health.](#)

Five year BA/BS/MPH

This 5-year degree program combines the Bachelors of Art/Bachelor of Science (BA/BS) of Public Health (PBHL) and the Master of Public Health (MPH). These degrees are offered, respectively, at the University of Colorado Denver by the Department of Health and Behavioral Sciences in the College of Liberal Arts and

Sciences on the downtown campus, and the Colorado School of Public Health, a joint venture of the University of Colorado, Colorado State University and the University of Northern Colorado. The free-standing PBHL is composed of 120 credits of coursework (43 specific to the BA and 73 specific to the BS, with the remainder being part of the larger requirements for a Bachelor's degree). The free-standing MPH program is 42 credit hours and typically completed in 2 years.

[Click here](#) for information about the requirements for the five-year BA/BS/MPH.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

HEALTH HUMANITIES

Advisor: Marjorie Levine-Clark

Telephone: 303-315-7010

E-mail: Marjorie.Levine-Clark@ucdenver.edu

Location: Dept. of English, NC 4022-B

AMC Campus: Professor Tess Jones

Telephone: 303-724-3995

E-mail: therese.jones@ucdenver.edu

Location: Center for Bioethics and Humanities

Associated Faculty:

Peter Anthamatten, Geography and Environmental Sciences

Nancy Ciccone, English

Teresa Cooney, Sociology

Greg Cronin, Integrative Biology

Colleen Donnelly, English

Joseph Gall, School of Medicine

Charlie Ferguson, Integrative Biology, Advisor for Health Careers

Gabriel Finkelstein, History

Rachel Harding, Ethnic Studies

Marilynn Hitchens, History

Sarah Horton, Anthropology

Philip Joseph, English

Lisa Keranen, Communication

Karen Knaus, Chemistry

Marjorie Levine-Clark, History

Karen Lutfey, Public Health

Tess Jones, Center for Bioethics and Humanities

Tony Robinson, Political Science

David Tracer, Public Health and Health and Behavioral Sciences

Greg Whitesides, History

Margaret Woodhull, Humanities

Sara Yeatman, Health and Behavioral Sciences

Daniel Goldberg, Center for Bioethics and Humanities

Health Humanities is an undergraduate interdisciplinary minor that highlights humanities and related social science approaches to medicine and health. The health humanities offer insight into the human condition as it pertains to the arts and sciences of healing and deepens understanding of disease and wellness, pain and suffering, personhood, the nature of death and dying, embodied experience, and the limits of technological knowledge. Attention to literature, history, philosophy, rhetoric, and the arts reveals the ethical, cultural, and social contexts of health and medicine.

Who is this minor for?

- **EVERYONE!** Humanistic studies of health provide an excellent addition to science-based curricula and also a stand-alone program that addresses many current issues and interests.
- **Premed students:** Medical school admissions committees actively seek students with strong humanities and liberal arts backgrounds.

Key Learning Outcomes:

- Students will utilize humanistic perspectives to analyze approaches and practices related to health and medicine.
- Students will critically analyze historical and contemporary connections among health, medicine, and society.
- Students will demonstrate understanding of the historical, cultural, and political contexts of theories and practices related to health and medicine.

Click [here](#) for information about the Health Humanities Minor.

HISTORY

Chair: Christopher L. Agee

Program Assistant: Tabitha Fitzpatrick

Undergraduate Advisor: William Wagner

Graduate Advisor: Ryan Crewe

Office: Student Commons Building, 1201 Larimer St., Room 3102

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Faculty

Professors:

Marjorie Levine-Clark, PhD, University of Iowa

Associate Professors:

Christopher Agee, PhD, University of California, Berkeley
Ryan Crewe, PhD, Yale University
Gabriel Finkelstein, PhD, Princeton University
Peter Kopp, PhD, University of Nevada, Reno
Kariann A. Yokota, PhD, Yale University

Assistant Professors:

Xiaofei Gao, PhD, University of California, Santa Cruz
Rachel Gross, PhD, University of Wisconsin, Madison
Dale Stahl, PhD, Columbia University
William E. Wagner, PhD, University of California, Berkeley

Senior Instructors:

James E. Fell, PhD, University of Colorado Boulder
Richard D. Smith, PhD, University of Colorado Boulder

Instructors:

Brandon Mills PhD, University of Illinois at Urbana-Champaign
Christine Sundberg, MA, University of Colorado Denver

Associate Professors Clinical Teaching Track:

Cameron Blevins, PhD, Stanford University

Assistant Professors Clinical Teaching Track:

John G. Whitesides, PhD, University of California, Santa Barbara

Emeritus Professors:

Frederick S. Allen, PhD, Harvard University
Mary S. Conroy, PhD, Indiana University
Rebecca Hunt, PhD, University of Colorado Boulder
Pamela W. Laird, PhD, Boston University

Thomas J. Noel, PhD, University of Colorado Boulder
Carl E. Pletsch, PhD, University of Chicago
Myra L. Rich, PhD, Yale University
James B. Whiteside, PhD, University of Colorado
James B. Wolf, PhD, University of California, Los Angeles

The special responsibility of historical studies is understanding the past. History courses integrate many branches of knowledge, cutting across the lines of the social sciences and the humanities, and even the natural sciences. Identifying forces of stability and processes of change, history students develop their research, writing and analytical skills, which serve them well beyond their university years.

Undergraduate Information

Please click [here](#) for more information about the requirements for the Major in History.
Please click [here](#) for more information about the requirements for the Minor/Online Minor in History.
Please click [here](#) for more information about the requirements for the Immigration Studies Certificate.

Internships

Students may qualify for internships to earn credit and experience. Students may pursue internships in public policy, law, social work, community organizing, journalism, teaching, and a variety of other job fields. Students interested in pursuing an internship in their chosen job field should speak with the Undergraduate Advisor. Students interested in working in historical institutions can apply for positions with the Center for Colorado and the West, Colorado State Historical Society, Historic Denver, Denver Museum of Nature and Science, the Colorado Railroad Museum, and the National Park Service.

Honors Program

Students with a cumulative GPA of 3.5 or higher in their upper-division history classes are encouraged to submit their HIST 4839 (History Seminar) thesis papers to achieve a degree awarded with Latin honors: *cum laude*, *magna cum laude* or *summa cum laude*. Eligible students will submit their thesis papers to the Undergraduate Advisor for review by the Undergraduate Honors Committee.

Historical Studies Journal

Since 1983, CU Denver students in history have published this illustrated journal showcasing the most outstanding original research done each year by history students.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

HUMANITIES

Director: Margaret L. Woodhull, PhD

Program Assistant: Angela Beale

Office: Student Commons 3203

Telephone: 303-315-3565

Fax: 303-315-3569

E-mail: masterhs@ucdenver.edu

Website: clas.ucdenver.edu/ict/index.html

The Humanities Minor is an interdisciplinary studies program. Students take courses in a range of disciplines with a variety of faculty.

Undergraduate Information

The Humanities Minor is a 15-credit hour undergraduate interdisciplinary minor available through CU-Denver's College of Liberal Arts and Sciences (CLAS). The study of Humanities offers students ideas and concepts for being ethical, creative citizens equipped with tools for critical thinking in a global, multinational world. Taking an interdisciplinary approach, the Humanities Minor cultivates humanistic concepts through historically grounded texts and traditions. It teaches critical engagement with society's most pressing issues by developing a human-oriented perspective in which creativity and critical, theoretical thinking frame ethical being in the world. Comprising Humanities-based coursework, students gain important foundations in personal and community values by pursuing a concentration in one of three interdisciplinary pathways:

Story-telling and Meaning: comprised of Humanities electives focused on how humans make ethical decisions and meaning in life through literature, philosophy, history, and religion.

Picturing Humanity: comprising Humanities courses emphasizing the aesthetic role of art, history, film, and visual studies in the constitution of diverse cultural and social perspectives.

Theorizing Humanity: comprised of coursework focusing on the public role of social theory, philosophy, ethnic studies, and social justice in the formation of culture and society

Student Learning Goals

A Humanities Minor offers valuable skills demanded by today's competitive global market. Students who study Humanities have strong writing and communication skills that make them successful in a wide range of careers, like teaching, non-profits leadership, advertising, law, and medicine. Humanities Minor pathways tailor coursework within humanistic traditions and ideas that offer meaningful exploration of issues in contemporary life and society. Students learn analytic thinking and reasoning demanded by careers, like law, technology, marketing, and politics. Humanities study provides knowledge that transcends the limitations of individual disciplinary majors and minors. Pathways within the interdisciplinary Humanities Minor offer students the opportunity to bring together content and themes from diverse, but related disciplines within the framework of humanistic inquiry and critical analysis.

[Click here to learn about the requirements for the Humanities Minor.](#)

INDIVIDUALLY STRUCTURED MAJOR

Director: Associate Dean Marjorie Levine-Clark

Faculty advisor: Brandon Mills

The College of Liberal Arts and Sciences Interdisciplinary Studies Major (ISM) provides students with the opportunity to construct an individualized major that meets their unique needs and interests, and which results in a B.A.. This flexible program allows students to follow academic pursuits that transcend traditional department or college boundaries, combining coursework from two, three, or even more academic units to explore a particular theme. An ISM tends to be more focused than traditional majors and should not be considered a default major for students uncertain about their course of study.

Application for an ISM:

In order to declare an Interdisciplinary Studies Major, students are required to submit a program plan that includes a proposal and a course contract. Students should aim to complete a program plan before the end of the sophomore year. The proposal should be approved before students have taken one-third of the classes listed in their course contracts. Copies of your completed ISM proposal and course contract must be filed with the Associate Dean for Planning, Initiatives, and Diversity and with your CLAS Academic Advisor.

- The ISM proposal must include:
 - A description of your chosen theme (see below for sample themes).
 - An explanation of why the theme requires coursework that integrates multiple disciplines. You can choose a theme within interdisciplinary frameworks already established in CLAS but which do not offer BA degrees. These frameworks include Chinese Studies, Health Humanities, Law Studies, Religious Studies, Social Justice, Sustainability, and Women's and Gender Studies. You are also encouraged to create your own frameworks.
 - An outline of specific learning objectives for the ISM (see below for sample learning objectives).
 - Approval from the Associate Dean for Planning, Initiatives and Diversity.
-
- Your ISM course contract must include:
 - A list of the courses in your chosen disciplines and the optional "grab bag" of courses that you intend to apply to your ISM, as well as potential alternate courses. You should work closely with the Associate Dean for Planning, Initiatives, and Diversity and faculty advisors in your chosen disciplines to create your course contract.

- Signatures from your chosen Primary Faculty Advisor from one of your main disciplines and signatures from Faculty Advisors from your other main disciplines. You do not need a faculty advisor for grab bag courses.
- Signature from your Academic Advisor.
- Signature from the Associate Dean for Planning, Initiatives, and Diversity.

Roles and Responsibilities

Student

- creates the ISM proposal and course contract (in collaboration with faculty advisors)
- meets regularly with ISM Primary Advisor to assess progress through ISM
- fulfills requirements of ISM course contract

Associate Dean for Planning, Initiatives, and Diversity

- approves student proposals for ISM
- signs off on ISM course contracts
- maintains records of ISM applications
- certifies graduation

Primary Faculty Advisor

- approves ISM course contract
- meets with ISM advisees to monitor progress
- oversees advisees' capstone projects

Other Faculty Advisors

- approve course contract
- help with capstone projects when needed

CLAS Academic Advisor

- reviews overall course contract
- approves exempt core area

Individually Structured Major Options

Click [here](#) for more information about the requirements for the Individually Structured Major-Interdisciplinary Studies Option.

Click [here](#) for more information about the requirements for the Individually Structured Major-Integrated Studies Option.

Click [here](#) for more information about the requirements for the Individually Structured Major-Intercampus Interdisciplinary Option.

Click [here](#) for more information about the requirements for the Individually Structured Major-Integrated Health Sciences Option.

Honors

Liberal arts students interested in graduating with Latin honors in the individually structured major program should meet with the assistant/associate dean in the CLAS Advising Office to verify they meet eligibility requirements and to modify the program plan for the honors project. Students who successfully complete the ISM honors program will have the appropriate Latin honor designation placed on the University of Colorado diploma and transcript.

To participate in the ISM honors program, CLAS students must meet each of the following eligibility requirements:

- have a declared ISM major with an approved ISM contract
- possess a minimum 3.2 cumulative University of Colorado GPA
- possess a minimum 3.5 GPA on all completed University of Colorado course work in the ISM contract

Eligible ISM students must complete an undergraduate research project and present the results to a faculty honors committee. The level of Latin honors awarded is determined by the faculty honors committee. ISM students are to complete 3 to 6 semester hours of undergraduate independent study over a period of two semesters in one of the disciplines that constitute the ISM contract. The faculty sponsor from the project discipline will serve as the honors committee chair. The independent study research project is to produce a thesis-quality report to be presented orally to a three-member interdisciplinary faculty honors committee representing the disciplines in the ISM contract. Upon completion of the research report and oral presentation to the honors committee, the level of Latin honors will be determined by the following criteria:

cum laude-awarded upon completion of written report and oral presentation

magna cum laude-awarded by honors committee based on successful written report and oral presentation

summa cum laude-awarded by honors committee based on excellence in written report and oral presentation

INTEGRATIVE BIOLOGY

Chair: John G. Swallow

Associate Chair: Amanda Charlesworth

Program Assistants: Barbara Schmidt, Barbara McClure

Administrative Assistant: Jacki Craig

Undergraduate BS Program Director: Kimberly F. Regier

Graduate MS Program Director: Alan Vajda

Graduate PhD Program Director: Alan Vajda

Lab Coordinator: James Salmen, Munira Lantz, Sladjana Subotic, Enrique Karr

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Faculty

Professors:

Roderick Nairn, PhD, University of London
Bradley J. Stith, PhD, Washington State University
John G. Swallow PhD, University of Wisconsin Madison
Diana F. Tomback, PhD, University of California Santa Barbara

Associate Professors:

Alan Vajda, PhD, University of Colorado Boulder
Amanda Charlesworth, PhD, University College, London
Greg Cronin, PhD, University of North Carolina at Chapel Hill
Michael J. Greene, PhD, Oregon State University
Laurel Hartley, PhD, Colorado State University
Timberley M. Roane, PhD, University of Arizona
Michael Wunder, PhD, Colorado State University
Christopher J. Phiel, PhD, Thomas Jefferson University

Assistant Professors:

Gregory Ragland, PhD, University of North Carolina Chapel Hill
Christopher S. Miller, PhD, University of California Los Angeles
Annika Mosier, PhD, Stanford University
Brian Buma, PhD, University of Colorado Boulder
Carlos Infante, PhD, Harvard University

Senior Instructors:

Hannah Anchordoquy, PhD, University of Colorado Boulder
Laurel Beck, PhD, Michigan State University
Cheri A. Jones, PhD, University of Florida
David Knochel, PhD, University of Colorado Boulder
Kimberly F. Regier, EdD, University of Colorado Denver
Gene Brooks, DDS, University of Missouri
Lisa Johansen, PhD, University of Alabama
Molly Nepokroeff, PhD, University of Wisconsin Madison

Clinical Assistant Professor:

Tod Duncan, PhD, University College London

Emeritus Faculty:

Gerald Audesirk, PhD, California Institute of Technology
Teresa E. Audesirk, PhD, University of Southern California
Linda K. Dixon, PhD, University of Illinois
Leo P. Bruederle, PhD, Rutgers, the State University of New Jersey
John H. Freed PhD, Stanford University

Charles A. Ferguson, PhD, University of Colorado Boulder

Undergraduate Information

Integrative Biology is the study of living organisms at different levels of organization, from molecular biology to biosphere ecology. Our undergraduate curriculum is designed to offer a firm foundation for understanding life processes, and a variety of biology electives to accommodate individual interests. Our courses prepare students to enter a wide variety of biological careers including health care, ecology, and bioengineering. Our graduates have the tools needed to think critically and to make informed decisions as citizens sharing the responsibility to take care of society and of Earth.

[Click here](#) for more information about the requirements for a Major in Biology.

[Click here](#) for more information about the requirements for a Minor in Biology.

[Click here](#) for more information about the requirements for an Undergraduate Certificate in Biotechnology.

Additional Information for undergraduate students:

Transfer courses

Students with transfer credits in biology from other institutions should consult an undergraduate major advisor in the department for transfer credit and/or proper placement. Transfer credit from community college courses will not fulfill the requirements for upper-division semester hours or electives. Biology students seeking credit through AP (Advanced Placement), CLEP (College Level Examination Program) and/or IB (International Baccalaureate, Diploma Programme) should refer to the transfer tables (AP, CLEP, IB), as well as consult an undergraduate major advisor in the department for proper placement.

Departmental Honors

Departmental honors will be awarded to students based on their GPA in classes taken from Downtown Campus faculty. The following minimum GPA must be met both for all courses taken at CU Denver (overall GPA) and for biology courses alone (biology GPA): *cum laude*, 3.500; *magna cum laude*, 3.700; *summa cum laude*, 3.900.

Biology Research Scholars

The biology faculty encourages students to pursue research as part of their undergraduate education. Students who excel in both course work and research will be recognized as CU Denver Biology Research Scholars or Research Associates.

To qualify for the ***Research Scholars Program***, you must:

- achieve a minimum grade point average of 3.500 in all courses taken from CU Denver faculty, as well as in all CU Denver biology courses
- participate in a research project, consisting of a minimum of six credit hours of independent study (BIOL 2840, 3840, or 4840), taken over at least two semesters

- write a scientific paper describing the research
- present an oral or poster presentation summarizing your research

To qualify for the ***Research Associates Program***, you must:

- achieve a minimum grade point average of 2.500 in all courses taken from CU Denver faculty, as well as in all CU Denver biology courses
- participate in a research project, consisting of a minimum of three credit hours of independent study (BIOL 2840, 3840, 4840 or 4880), taken over at least two semesters
- write a scientific paper describing the research or present an oral or poster presentation summarizing your research

Students who wish to become involved in research should contact Dr. Christopher Phiel no later than their junior year, and preferably sooner.

Biotechnology Certificate

To serve the needs of students who wish to obtain recognition for the acquisition of specialized skills in biology and to prepare students for graduate school, health careers and jobs in industry, the Department of Integrative Biology offers a certificate program in biotechnology. Upon completion of the required courses (17-20 semester hours), including directed research and independent study or internship, the student will be awarded a certificate and receive the biotechnology certificate on their transcript. The certificate may be completed in addition to an undergraduate or as a stand-alone certificate. For complete information, see the Biotechnology Certificate description.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

INTERDISCIPLINARY PROGRAMS

Interdisciplinary programs encourage students to synthesize the theories, methods and analytical perspectives of diverse disciplines to bring new ways of understanding to particular themes or problems. Interdisciplinary studies foster research and teaching collaboration among faculty and students, who cross traditional academic specialties. Interdisciplinary programs also place a high value on reaching beyond the university into our local, national and global communities, providing students with real-world experiences through internships and experiential learning.

The college also has several established interdisciplinary programs leading to full undergraduate degrees, minors, certificates and graduate degrees. A brief description of each program follows, with a link to its respective program section.

Undergraduate Information

- The increasing prominence of China in world affairs has made knowledge of Chinese language and cultures an asset in numerous fields. The innovative MINOR IN CHINESE STUDIES offers a specialized study of China through coursework in the related disciplines of language, anthropology, history, geography, literature and political science.
- The K-12 TEACHER LICENSURE PROGRAMS, in collaboration with the School of Education & Human Development, enable students to add educational training to their liberal arts and sciences discipline studies.
- The MINOR IN ENVIRONMENTAL SCIENCES allows students to choose courses from the social sciences, physical sciences, engineering, humanities and statistics to create a unique program of study.
- The ETHNIC STUDIES BA and the MINOR IN ETHNIC STUDIES provide students the opportunity, through academic investigation, to develop a greater understanding of the cultural pluralism of the present day United States and to acquire skills needed in professional and social service fields.
- The INDIVIDUALLY STRUCTURED MAJOR (ISMA) gives students an opportunity to construct a major that meet their unique needs and interests. Students pursue studies that combine coursework from two, three, or even more academic units to explore a particular theme. The ISM challenges students to ask questions that require thinking beyond a single discipline.
- In a world where global commerce and politics have emerged as driving forces, the INTERNATIONAL STUDIES MAJOR provides students with innovative perspectives on changes that affect all of us. INTS is designed to provide students a thorough education in international issues while preparing them for global careers. The major offers students the opportunity to develop a deeper understanding of complex international issues and the forces that are shaping our world.
- The MINOR IN HEALTH HUMANITIES explores the ethical, cultural, social and political contexts of health and medicine, providing an excellent addition to science-based curricula serving as a stand-alone program that addresses many current issues of interest to the humanities and social sciences.
- The MINOR IN LAW STUDIES is intended to help students become intelligent and critical scholars of legal and political discourse. While the minor may be useful for students contemplating law school, it is also intended to appeal to a wider group of students interested in issues relating to law and society and careers in public policy related fields.
- The PUBLIC HEALTH MAJORS enable students to get either a BA or BS degree in public health, depending on their focus. They may choose from over 100 electives in 14 academic departments, in addition to specific public health core courses.
- Religion involves the worldview of a culture, its social norms, ethics, and politics. In the private realm, religious experiences are among the most profound an individual can have. The MINOR IN RELIGIOUS STUDIES fosters a nuanced understanding of religion, and cultivates critical skills evaluating religious phenomena.
- The MINOR IN SOCIAL JUSTICE encourages students to recognize how democracy, education, consumerism, media, race, class and gender intersect. The minor fosters the many ways that our students are already engaged as citizens, the desirable possibilities that remain unrealized and their power to effect that actualization.

- Holistic approaches to sustainability practices in our daily living require a workforce that understands the various perspectives that address a broad optimistic framework. Students who complete the MINOR IN SUSTAINABILITY will demonstrate a command of the language, structure and skills of multiple, relevant disciplines, and will be better prepared to take leadership in this complex, challenging field.
- The MINOR IN WOMEN'S AND GENDER STUDIES focuses students' attention on the centrality of gender and sexuality to understanding our past and present worlds. Students and faculty probe assumptions about men and women, and question structures of inequality as they play out in local and global contexts.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs

INTERNATIONAL STUDIES

Director: Hamilton Bean, Ph.D

Office: Student Commons 3010

Telephone: 303-315-1909

E-mail: Hamilton.Bean@ucdenver.edu

Faculty

The international studies program is an interdisciplinary major with faculty drawn from several independent academic departments.

Undergraduate Information

In a world where the forces of politics, commerce, culture, and technology are multifaceted and interconnected, the International Studies (INTS) major provides students with a much-needed global perspective. INTS is an interdisciplinary liberal arts degree that prepares students for international careers and graduate study. The INTS major offers students a deep understanding of complex international issues and the underlying drivers that are shaping our world. Employers seek the qualities of INTS graduates: historical knowledge, research ability, cross-cultural competence, teamwork and leadership experience, and the ability to analyze, model, and solve real-world problems. According to the National Association of Colleges and Employers (NACE), International Studies graduates earn higher starting salaries than any other social science major, except Economics. The INTS major provides students with the methodological tools necessary to analyze various regions of the world and global issues from different academic disciplines. Students take courses from departments including Anthropology, Business, Communication, Economics, Geography, History, Modern Languages, Political Science, and Religious Studies, among others. This combination of coursework, flexibility,

and customization provides INTS majors a distinctive and valuable degree for today's world.

[Click here](#) for information about the requirements for the Major in International Studies.
[Click here](#) for information about the requirements for the Minor in International Studies.

Joint BA/MA Programs

Highly-motivated students with strong GPAs in the INTS major may qualify for admission to a MA program, with the BA in International Studies and MA in either Humanities or Social Science. This condensed graduate degree program allows students to double-count 5 graduate-level courses toward the BA and MA simultaneously and to complete the MA degree with only one extra year of coursework. Interested students should contact advisors in both the INTS program and Masters in Humanities or Masters in Social Sciences program to learn more about specific course plans and requirements.

[Click here](#) for information about the requirements for the 4+1 BA in International Studies to MH or MSS.

LAW STUDIES

Coordinator: Omar Swartz (MHMSS), JD, Duke University; PhD, Purdue University

Telephone: 303-315-3567

E-mail: Omar.Swartz@ucdenver.edu

The law studies minor at CU Denver is an interdisciplinary course of studies intended to help students become intelligent and critical scholars of legal and political discourse. While the minor may be useful for students contemplating law school, it is also intended to appeal to a wider group interested in issues relating to law and society and careers in public policy-related fields. The minor is designed to achieve the following three interrelated goals:

- to introduce students to the major areas of law that affect life in the United States and important legal issues that influence current events;
- to enable students to become familiar and fluent with a legal vocabulary and legal reasoning; and
- to better prepare students with the analytical and conceptual tools to be critical citizens in our constitutional democracy.

In addition to these goals, students who complete the minor with the intention of attending law school may find themselves more prepared than they otherwise would be for the often mystifying and rigorous first year of law school. To help these students, the program contains an advising component which assists students who are contemplating law school to provide them with a realistic appraisal of law school and of the legal profession. The counselors will aid students with the law school application process.

[Click here](#) for more information about the Minor in Law Studies.

MATHEMATICAL AND STATISTICAL SCIENCES

Chair: Julien Langou

Associate Chair: Stephen Hartke

Program Assistant: Maria Rase

Administrative Assistant III: Susan Rivera

IT Senior Professional: Joseph Malingowski

Office: Student Commons Building, 4th Floor

Telephone: 303-315-1700 (department)

Fax: 303-315-1704

Department Email: MathStaff@ucdenver.edu

Faculty

Professors:

Michael S. Jacobson, PhD, Emory University

Julien Langou, PhD, INSA, Toulouse, France

Weldon A. Lodwick, PhD, Oregon State University

Jan Mandel, PhD (equivalent), Charles University, Czechoslovakia

Florian Pfender, PhD, Emory University

Stephanie A. Santorico, PhD, North Carolina State University

Associate Professors:

Stephen Billups, PhD, University of Wisconsin-Madison

Steffen Borgwardt, PhD, Technische Universität München

Troy Butler, PhD, Colorado State University

Joshua French, PhD, Colorado State University

Stephen Hartke, PhD, Rutgers University

Burton Simon, PhD, University of Michigan, Ann Arbor

Diana White, PhD, University of Nebraska

Assistant Professors:

Erin Austin, PhD, University of Minnesota

Audrey Hendricks, PhD, Boston University

Yaning Liu, PhD, Florida State University

Emily Speakman, PhD, University of Michigan

Associate Professors, Clinical Teaching Track:

RaKissa Manzanares, PhD, University of Northern Colorado
Adam Spiegler, PhD, University of Arizona

Senior Instructors:

Michael Kawai, MS, University of Colorado Denver
Gary Olson, MS, University of Colorado Denver
Robert Rostermundt, PhD, University of Colorado Denver

Instructors:

Joe Billello, MS, Long Island University
Daniel Klie, MS, University of Colorado Denver
Lance Lana, MS, University of Colorado Denver
Dmitriy Ostrovskiy, PhD, State University of New York at Stony Brook
Pamela Whitten, MA, University of Colorado Boulder

International College of Beijing Faculty:

Ba Nguyen, PhD, Wayne State University

Research Faculty:

Aime Fournier, PhD, Yale University

Emeritus Faculty:

William Briggs, PhD, Harvard University
William E. Cherowitzo, PhD, Columbia University
Kathryn L. Fraughnaugh, PhD, University of Houston
J. Richard Lundgren, PhD, Ohio State University
Andrew Knyazev, PhD, Russian Academy of Sciences
Stanley E. Payne, PhD, Florida State University

The Department of Mathematical and Statistical Sciences at the University of Colorado Denver offers degrees and certificates at the undergraduate and graduate levels in mathematics, applied mathematics, data science, and statistics through coursework, research and industrial collaboration. Traditional courses such as calculus, linear algebra, probability, statistics and discrete mathematics are offered regularly by the department. In addition, contemporary subjects such as high-performance computing; numerical analysis, optimization, statistical methods, and operations research are also well represented by course offerings and faculty interests. In all of its activities, the department embodies the outlook that mathematics, statistics, computing and data science are powerful tool that can be used to solve problems of immediate and practical importance.

Apart from the specialized mathematical and statistical skills acquired through course work, the degrees and certificates also provide general skills that are valued by many employers. These skills include problem solving, critical thinking, analysis, facility with data, the ability to process quantitative information, and perhaps most important of all, the ability to learn new skills and concepts quickly.

Center for Computational & Mathematical Biology

Director: Weldon Lodwick

Telephone: 303-315-1733

The Center for Computational Biology (CCMB) is a multidisciplinary center focused on computational and mathematical biology research and education.

Center for Computational Mathematics

Director: Jan Mandel

Telephone: 303-315-1703

Website: <http://ccm.ucdenver.edu/>

The Center for Computational Mathematics is composed of faculty members who have an interest in computational mathematics, the study of solving mathematical problems with computers. The center resides in the Department of Mathematical and Statistical Sciences and includes faculty members from various other departments. The primary goal of the center is to foster research in computational mathematics and to maintain a strong educational program at all levels. It has extensive ties with industry along the Front Range and with government laboratories throughout the nation. It offers students an excellent opportunity to receive training and experience in this exciting new field. The center operates several supercomputing clusters.

Math Clinic

Website: <https://clas.ucdenver.edu/mathematical-and-statistical-sciences/math-clinic>

Each semester, the mathematical and statistical sciences department conducts math clinics that are open to both undergraduate and graduate students. Each clinic is sponsored by a business, government agency or research organization. The clinic sponsor provides a specific project on which students work with the supervision of a faculty member and a sponsor representative. Every clinic results in a final report to the sponsor and provides participating students with an opportunity to apply mathematics to relevant problems. Recent math clinic sponsors include Raytheon, Lockheed Martin, Xenometrix, Budget Truck Rental and United Launch Alliance.

Statistical Consulting Service

The Department of Mathematical and Statistical Sciences regularly offers a graduate course in statistical consulting in which students work on problems provided by researchers and clients at CU Denver and in the Denver metropolitan area. Potential clients should contact the department at 303-315-1700.

Undergraduate Information

Co-Directors: Diana White and Adam Spiegler

Telephone: 303-315-1720

The Department of Mathematical and Statistical Sciences offers a BS program that provides broad training in mathematics with the option of specializing in one of four areas of special emphasis, or simply satisfying the requirements without specifying an area. The

four areas of emphasis are: applied mathematics, probability and statistics, data science, and economics.

To determine which math course a student should take first, see the Department of Mathematical and Statistical Sciences webpage (www.math.ucdenver.edu).

Students with potential transfer credit that was not automatically accepted upon admission should contact the Department of Mathematical and Statistical Sciences (MathStaff@ucdenver.edu or 303-315-1700).

Students must declare a major in the CLAS Advising Office. Once a major is declared, students should contact the Department of Mathematical and Statistical Sciences to meet with a math advisor, and continue to do so at least once per semester. All mathematics majors should visit the CLAS Advising Office to have graduation requirements checked at a minimum the semester prior to graduation.

[Click here to learn about the requirements for the Mathematics BS.](#)

[Click here to learn about the requirements for the Mathematics BS, Applied Mathematics Option.](#)

[Click here to learn about the requirements for the Mathematics BS, Probability and Statistics Option.](#)

[Click here to learn about the requirements for the Mathematics BS, Data Science Option.](#)

[Click here to learn about the requirements for the Mathematics Minor.](#)

[Click here to learn about the requirements for the Mathematics Data Science Minor.](#)

[Click here to learn about the requirements for the Mathematics Data Science Undergraduate Certificate.](#)

[Click here to learn about the requirements for the Dual Degree: Mathematics BS/Economics BA.](#)

[Click here to learn about the requirements for the 5 year BS in Mathematics/MS in Applied Statistics.](#)

Graduation With Honors

The mathematical and statistical sciences department recognizes students who complete the undergraduate program with distinction.

To be eligible for graduation with honors at the ***cum laude*** level a student must graduate with an overall GPA of 3.2 or better for the last 60 credit hours taken at University of Colorado Denver and either:

- Option 1: Have a GPA of 3.7 or better in upper-division math courses taken at CU Denver, OR
- Option 2: Have a GPA of 3.5 or better in upper-division math courses taken at CU Denver and must complete an honors project.

To be eligible for graduation with honors at the ***magna cum laude*** level a student must graduate with an overall GPA of 3.2 or better for the last 60 credit hours taken at University of Colorado Denver and either:

- Option 1: Have a GPA of 3.85 or better in upper-division math courses taken at CU Denver, OR

- Option 2: Have a GPA of 3.7 or better in upper-division math courses taken at CU Denver and must complete an honors project.

To be eligible for graduation with honors at the *summa cum laude* level a student must graduate with an overall GPA of 3.2 or better for the last 60 credit hours taken at University of Colorado Denver and satisfy ALL of the following:

- Have a GPA of 3.7 or better in upper-division math courses taken at CU Denver and must complete an honors project.
- When a recommendation for Honors at the Summa Cum Laude is brought to Department as a motion, a vote will be taken and such a motion must be passed by a two-thirds majority of those voting at the meeting.
- Considerations such as overall quality of the candidate's honors project, outreach, community, other extra-curricular activities relating to mathematics.

Undergraduate Applied Statistics Certificate

Director: Joshua French

Email: Joshua.French@ucdenver.edu

Telephone: 303-315-1709

There is a growing need for qualified statistical analysts of the ever-increasing amounts of data collected in business, industry, and government. The certificate in applied statistics program is designed to give students a strong background in statistical methodology and data analysis in preparation for opportunities in the workforce or for graduate studies. The Department of Mathematical and Statistical Sciences offers certificates in applied statistics at both the undergraduate and graduate levels.

[Click here to learn about the Undergraduate Applied Statistics Certificate.](#)

Undergraduate Certificate in Data Science Essentials

Director: Adam Spiegler

Email: math.advising@ucdenver.edu

Data scientists will have essential competencies in several areas related to analysis of data. In particular, a data scientist should: have strong programming ability in a language popular in data science (e.g., Python, R, Julia); be able to extract, manipulate, and visualize data; have an understanding of probability and statistics in order to quantify uncertainty; be able to build complex models for finding patterns and explaining data. This certificate should provide students with essential skills for introductory data science.

[Click here to learn about the Undergraduate Certificate in Data Science Essentials](#)

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

MODERN LANGUAGES

Chair: Devin Jenkins

Program Assistant: Niki Mott

Office: Plaza Building, Room 118

Mailing Address:

Campus Box 178

P.O. Box 173364

Denver, CO 80217-3364

Telephone: 303-315-7234

Fax: 303-315-7233

Arabic Faculty

Lecturer:

Tamara el-Masri, MLS, University of Denver

Chinese Faculty

Assistant Professor:

I-hao Victor Woo, PhD, Boston University

Lecturer:

Jing Li, BA, Nankai University

French Faculty

Associate Professor:

Diane Dansereau, PhD, University of Michigan

Associate Professor, Clinical Track:

Linda Alcott, PhD, University of Colorado

Senior Instructor:

Lori Willard, PhD, University of Colorado

Instructor:

Jocelyne Hunsinger, BA, University of Ottawa (Ontario, Canada)

French Advisor:

Diane Dansereau

German Faculty

Lecturer:

Maggie Rosenau, PhD, University of Colorado

Latin Faculty**Lecturer:**

Mary De Forest, PhD, University of Colorado

Alan Sumler, PhD, CUNY

Spanish Faculty**Associate Professors:**

Michael Abeyta, PhD, University of California-Davis

Kathleen Bollard, PhD, University of California-Berkeley

María Luisa Fernández Martínez, PhD, University of California, Irvine

Devin Jenkins, PhD, University of New Mexico

Andrés Lema-Hincapié, PhD, Cornell University and PhD, University of Ottawa

Assistant Professors:

Alyssa Martoccio, PhD, University of Illinois

Instructors:

Ileana Gross, MA, University of Georgia

Amanda Ritchie, MA, University of Akron

Gabriela de Robles, PhD, Georgetown University

Undergraduate Advisors (by student's last name):

A-F: Andrés Lema-Hincapié

G-O: Alyssa Martoccio

P-Z: María Luisa Fernández Martínez

Graduate Advisor:

Michael Abeyta

Study Abroad Advisor:

Devin Jenkins

Internship Director:

Andrés Lema-Hincapié

General Information

The Department of Modern Languages includes Arabic, Chinese, French, German, Latin and Spanish. Majors are available in French and Spanish, and minors are available in

Chinese, French, Linguistics and Spanish. Certification is available in Spanish for International Business. Students must declare a major prior to their final semester of coursework. The department recommends that majors and minors include some study abroad while they are fulfilling their degree requirements at CU Denver. Please see a departmental advisor about study abroad opportunities. Credit earned abroad will normally count toward satisfaction of the major and minor requirements at CU Denver, but to assure full transfer of credit, students must see an advisor in the department before enrolling in programs abroad. Courses taken abroad and designated as upper division in Chinese, French, German or Spanish are subject to the 48-hour maximum of semester hours from a single discipline in the College of Liberal Arts and Sciences.

Departmental Honors

Students who meet certain criteria and have been invited by the faculty of the appropriate language are encouraged to participate in the Department of Modern Languages honors program. Successful completion of this program by students majoring in French or Spanish leads to graduation with the distinction of *cum laude*, *magna cum laude* or *summa cum laude*. See French and Spanish sections for details.

Relevance to Other Programs

In addition to fulfilling major and minor requirements, courses in the Department of Modern Languages prepare students in the language, literature and civilization of the countries and peoples they are studying. Certain courses may apply to the fulfillment of core curriculum requirements in the College of Liberal Arts and Sciences.

Foreign Language Requirement

All students with majors in the College of Liberal Arts and Sciences must demonstrate proficiency in a foreign language at the second semester level. This is accomplished through course work, by examination or by completion of second-year high school credit. Students must receive a grade of C- (1.7) or higher in the final semester of the second-year course in high school or the second-semester college-level course in order to fulfill the foreign language requirement. The prerequisite for the second-semester college course is a grade of C- (1.7) or better in the first-semester course. There is no pass/fail option for any course taken for the foreign language requirement.

Students may show their level of proficiency by taking the placement/proficiency exam. The languages tested are French, German and Spanish. For other languages, consult the CLAS Advising Office. For information on the placement/proficiency exam, check the Modern Languages website or call the Department of Modern Languages, 303-315-7234. The number of times a student may take the exam is limited to once per semester.

For information on fulfilling part of the foreign language requirement through study abroad, see the Study Abroad section of the catalog or call 303-315-2232, or consult a Modern Languages advisor.

Department of Modern Languages Policy on Student Placement in Lower-Division Courses

A student may not enroll in a lower-division (1000/2000) language course that is below his/her level of language proficiency. Students wishing to enroll in a lower-division language course that does not directly follow their last completed course in the regular

sequence must consult with an appropriate faculty member of the Department of Modern Languages prior to enrollment. Students who have achieved some proficiency in a foreign language through other means than academic courses must also consult with an appropriate faculty member of the Department of Modern Languages prior to enrollment. Call 303-315-7234 for further information.

Departmental Advising

Upon declaring a major or minor in modern languages, each student will be assigned to a faculty advisor with whom the student should consult at least once per semester thereafter. It is especially important that modern language majors have their transcripts reviewed by a departmental advisor before enrolling in their final 30 semester hours at CU Denver. Failure to do so may result in delay of graduation. Students presenting four years of high school foreign language (Level IV) for admission must see a departmental advisor before enrolling in courses for the major or minor. Students with CLEP credits or advanced placement credits from high school should see a departmental advisor about course equivalencies.

Before enrolling in their final semester, seniors demonstrate advanced oral and written proficiency in the language that they are studying through an oral proficiency interview and a written outcomes assessment exam. Students must see a departmental advisor to schedule proficiency tests in their language.

Residency Requirement

A minimum of 18 semester hours of course work leading to a major in French or Spanish must be taken from modern languages faculty at CU Denver. For a minor in Chinese, French, Linguistics or Spanish, 9 semester hours must be taken from modern languages faculty at CU Denver. Courses taken at other institutions while a student is enrolled at CU Denver may be applied to the major or minor only with departmental approval before enrollment in those courses.

Undergraduate Information

Arabic

The Department of Modern Languages offers first- and second-year Arabic courses.

Chinese

[Click here](#) to learn about the requirements for the Chinese Studies Minor.

French

[Click here](#) to learn about the requirements for the French Major.
[Click here](#) to learn about the requirements for the French Minor.

German

The Department of Modern Languages offers first and other courses in German.

Linguistics

[Click here to learn about the requirements for the Linguistics Minor.](#)

Latin

The Department of Modern Languages offers first year and other courses in Latin.

Spanish

[Click here to learn about the requirements for the Spanish Major.](#)

[Click here to learn about the requirements for the Spanish, International Language and Culture for the Professions Major Option.](#)

[Click here to learn about the requirements for the Spanish Minor.](#)

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

PHILOSOPHY

Chair: David L. Hildebrand

Program Assistant: John Brogan

Office: Plaza Building, M108

Telephone: 303-315-7223

Faculty

Professors:

David L. Hildebrand, PhD, University of Texas, Austin

Robert Metcalf, PhD, Pennsylvania State University

Candice Shelby, PhD, Rice University

Mark Tanzer, PhD, Stony Brook University

Associate Professors:

Sarah Tyson, PhD, Vanderbilt University

Gabriel Zamosc-Regueros, PhD, University of Michigan

Assistant Professors:

Boram Jeong, PhD, Duquesne University

Clinical Teaching Track:

Jeffery Golub, PhD, The New School for Social Research

Senior Instructors:

Brian Lisle, PhD, Loyola University of Chicago

Daryl Mehring, PhD, University of Colorado

Samuel F. Walker, PhD, University of Colorado

The philosophy program offers a rigorous liberal arts education. It trains students to speak and write carefully, think and reason critically, and to seek out creative connections between ideas of all kinds. Philosophy is an excellent undergraduate preparation for almost any professional field. Philosophical inquiries can cover a wide range of subject matters including ethics and politics, art and literature, history and religion, technology and the sciences. The benefits of a philosophy degree last a lifetime, setting students on a path toward self-development, intellectual sophistication, and the enrichment that comes from living a more a reflective life.

Undergraduate Information

[Click here to learn about the requirements for the Major in Philosophy.](#)

[Click here to learn about the requirements for the Minor in Philosophy.](#)

[Click here to learn about the requirements for the Minor in Ethics.](#)

[Click here to learn about the requirements for the Minor in Philosophy of Science.](#)

[Click here to learn about the requirements for the 4+1 BA to MA program.](#)

HONORS PROGRAM

Requirements for honors are the following:

A. Course Performance

- | | | |
|---------------------------|--------------------------|-----------------|
| 1. <i>Cum laude</i> | 3.4 GPA within the major | 3.3 overall GPA |
| 2. <i>Magna cum laude</i> | 3.6 GPA within the major | 3.5 overall GPA |
| 3. <i>Summa cum laude</i> | 3.8 GPA within the major | 3.7 overall GPA |

B. Thesis

Majors desiring to graduate with honors in philosophy must enroll in PHIL 4950 for a minimum of 3 hours and a maximum of 6 hours (note that these hours are in addition to the 36 hours required for the philosophy major) and complete research that culminates in a thesis and oral examination. Majors must work with two faculty members during the project. Written proposals must be submitted and approved by the faculty committee prior to the beginning of the project. If the completed thesis and oral exam are deemed worthy

of honors, the student will be awarded the honors consistent with his or her GPA. However, to receive highest honors (*summa cum laude*), the faculty committee must designate the performance for both the written thesis and the oral defense as worthy of graduation with highest honors. If the faculty committee makes no such designation, students will graduate *magna cum laude*.

Graduate Information

Please go to the Graduate catalog to read about graduate program opportunities in philosophy through the CU Denver Masters of Humanities Program's Philosophy and Theory Track.

PHYSICS

Chair: Michael "Bodhi" Rogers

Program Assistant: Dawn Arge

Office Assistant: Nikki Martinez

Office: North Classroom, 3123

Telephone: 303-315-7390

Fax: 303-315-7366

Faculty

Professors:

Martin E. Huber, PhD, Stanford University

Michael "Bodhi" Rogers, PhD, RPA, Oregon State University

Alberto C. Sadun, PhD, Massachusetts Institute of Technology

Associate Professor:

Randall P. Tagg, PhD, Massachusetts Institute of Technology

Assistant Professors:

Amy L. Roberts, PhD, University of Notre Dame

Anthony N. Villano, PhD, Rensselaer Polytechnic Institute

Clinical Associate Professors:

Masoud Asadi-Zeydabadi, PhD, University of Colorado Boulder

Senior Instructors:

John Carlson, PhD, University of Michigan, Ann Arbor

Ramesh Dhungana, PhD, University of North Dakota, Grand Forks

Richard Geyer, PhD, Colorado School of Mines

Steve Maxson, JD, PhD, University of Texas at Austin

Senior Professional Research Assistants:

Bruce Hines, MS, University of Colorado Denver

Emeritus Professors:

Martin M. Maltempo, PhD, Columbia University

Clyde S. Zaidins, PhD, California Institute of Technology

Undergraduate Information

Physics, as the most fundamental of the sciences, is the foundation upon which many other disciplines are built. Therefore, other programs often require knowledge of the fundamentals of physics, and a physics degree is an outstanding platform for employment and advanced study in many technical disciplines. The department offers both a course of study fulfilling the bachelor of science degree and a wide range of service courses for students majoring in disciplines other than physics. Students intending to major in physics should have a high school background that includes trigonometry, advanced algebra, chemistry and physics, as well as a good preparation in the arts and humanities. Students have an option during their freshman year to overcome any deficiencies in these areas.

The Department of Physics offers a track in Pure and Applied Physics which is intended for students preparing for graduate school, teaching careers, or careers in industry or government labs. Students preparing for employment in an interdisciplinary area (such as environmental, geophysical or energy study) can choose to add an appropriate minor or arrange a specific major program on an individual basis.

Students majoring in other disciplines have the option of choosing a minor in physics, in astrophysics, or in biophysics. The department also offers an online certificate in the scientific foundations of technical innovation at both undergraduate and graduate levels. This 12-semester-hour program is intended to foster careers in the practical application of physics and the potential commercialization of new technologies.

To enhance the employment and postgraduate study options of physics majors, the department is committed to providing students with opportunities for experimental,

computational and theoretical research. On-campus opportunities are available through the faculty research programs. Questions regarding physics courses or the physics curriculum should be directed to a departmental advisor. Appointments should be made through the physics office.

[Click here to learn about the requirements for the Physics - Pure and Applied Physics BS.](#)

Departmental Honors

Qualified students are encouraged to participate in the physics honors program. For these students, a senior thesis is required. This work will be conducted under the supervision of a faculty advisor. The topic and scope of this work will be chosen by the student in consultation with the thesis advisor. The student has the option of registering for up to 3 semester hours of independent study for the thesis project; regardless of registered semester hours, the student should commit the effort equivalent to a 3-semester-hour laboratory course toward completion of the thesis. The levels of passing scores are satisfactory, meritorious, and excellent.

Within this framework, three levels of honors are awarded by CU Denver in conjunction with the physics major:

1. *Cum laude*: The student must have a cumulative GPA of 3.25 both in physics and overall at CU Denver. The student's senior thesis and presentation must be judged to be meritorious by the committee.
2. *Magna cum laude*: The student must have a cumulative GPA of 3.50 both in physics and overall at CU Denver. The student's senior thesis and presentation must be judged to be meritorious by the committee.
3. *Summa cum laude*: The student must have a cumulative GPA of 3.75 both in physics and overall at CU Denver. The student's senior thesis and presentation must be judged to be excellent by the committee.

Physics Minors

[Click here to learn about the requirements for the Minor in Physics.](#)

[Click here to learn about the requirements for the Minor in Astrophysics.](#)

[Click here to learn about the requirements for the Minor in Biophysics.](#)

Certificate

[Click here to learn about the Certificate in Scientific Foundations of Technical Innovation.](#)

POLITICAL SCIENCE

Chair: Tony Robinson

Program Assistant: Kelly Stritzinger

Undergraduate Advisor: Karen Breslin

Pre-law Advisor: Glenn Morris

Graduate Advisor: Michael Berry

Director, New Directions Program: Minsun Ji

Office: : Student Commons, Room 3212
Telephone: 303-315-1770
Fax: 303-315-1780

Faculty

Professors:

Christoph Stefes, PhD, Denver University

Associate Professors:

Glenn T. Morris, JD, Harvard University School of Law
Tony Robinson, PhD, University of California, Berkeley
Bassem Hassan, PhD, University of Denver
Stephen C. Thomas, PhD, Stanford University
Michael J. Berry, PhD, University of Colorado
Betsy Jose, PhD, University of Pittsburgh
James Walsh, PhD, Regis University
Thorsten Spehn, PhD, University of Denver

Assistant Professors:

Sasha Breger-Bush, PhD, University of Denver
Chad Shomura, PhD, Johns Hopkins University

Senior Instructors:

Harvey Bishop, MA, University of Colorado

Instructors:

Karen Breslin, JD, University of Denver

Adjunct Faculty:

Minsun Ji, PhD, University of Denver
Charles Norton, JD, University of Chicago

Political science is the study of people, power and the public good. Looking at a variety of societies, institutions and interpersonal situations, the discipline asks who has power, where this power comes from, how it is used, how it promotes or impairs the public good and how the public good is defined. Political science draws from other fields, such as psychology, philosophy, economics, sociology and world literature. Finally, it explores the relationship between idealism and realism, between theory and practice, between political thought and personal action.

Opportunities for students with a BA in political science include careers in business, teaching, journalism, community organizing and government service. A political science degree also serves as good preparation for professional training in law and public administration. Students' internship experiences increase their job opportunities. Students

with an MA in political science may find careers in such areas as business, government research and administration and teaching at the community college level.

Please visit the Political Science Department website for detailed information on programs, faculty, students, courses and syllabi, community involvement and service learning, internships and photographs.

Undergraduate Information

[Click here to learn about the requirements for the Major in Political Science.](#)

[Click here to learn about the requirements for the Major in Political Science-Public Policy Option.](#)

[Click here to learn about the requirements for the Minor in Political Science.](#)

[Click here to learn about the requirements for the Middle Eastern Politics Undergraduate Certificate.](#)

[Click here to learn about the requirements for the Labor Leadership Undergraduate Certificate.](#)

[Click here to learn about the Public, Non-Profit and Community Leadership Undergraduate Certificate.](#)

[Click here to learn about the 4+1 BA to MA program.](#)

Departmental Honors

Requirements for honors in political science are an overall GPA (in all courses, not just political science courses) of 3.65 or better and the preparation and defense of an honors paper. Honors graduates with an overall GPA of 3.75 to 3.84 may graduate with high honors, and those with GPAs of 3.85 and higher may graduate with highest honors. Level of honors granted depends upon both the GPA and the quality of the honors paper. Students interested in departmental honors must secure a full-time faculty sponsor for their honors paper early in the semester in which they intend to graduate. For details, please contact the department undergraduate advisor.

Fourth World Center for the Study of Indigenous Law and Politics

Executive Director: Glenn T. Morris

Telephone: 303-315-1762

This center provides a research clearinghouse to students and faculty at CU Denver on legal and political issues that affect indigenous peoples (the Fourth World). In addition to supporting a modest library of rare books and periodicals on indigenous issues, the center also stocks video and audio resources on subjects of indigenous politics and a substantial news file archive on current developments in the Fourth World. The center has produced curricular materials, including the *Fourth World Bulletin*, for use in international relations and area-studies courses.

Center for NEW DIRECTIONS in Politics and Public Policy

Director: Minsun Ji

This center provides academic programs, courses and research focused in the areas of politics and public policy with the purpose of developing the leadership capacities necessary to address changing public priorities for the 21st century within neighborhoods,

communities, governmental jurisdictions, labor organizations, and nonprofit entities. Students in the Center's academic programs include working professionals in public and non-profit sectors; elected officials; community activists; interest-group stakeholders; educators from a wide range of demographic, occupational, and personal backgrounds; and simply concerned citizens. The New Directions program offers professional internships with a wide variety of political jurisdictions, community-based groups, and labor organizations across Colorado, including several funded internships.

The center offers both undergraduate and graduate degrees in political science with emphases in public policy and administration.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

PSYCHOLOGY

Chair: Peter S. Kaplan

Program Assistant: Kimberly Hill

BA and Psychology Minor Undergraduate Advisor: Mitchell Handelsman

BS and Behavioral and Cognitive Neuroscience Minor Undergraduate Advisor: David Albeck

Director of Undergraduate Studies: David Albeck

Office: North Classroom, 5002

Telephone: 303-315-7050

Fax: 303-315-7072

Faculty

Professors:

Elizabeth Sandlin Allen, PhD, University of North Carolina at Chapel Hill

Richard Allen, PhD, University of North Carolina at Chapel Hill

James Grigsby, PhD, University of Colorado, Boulder

Mitchell M. Handelsman, PhD, University of Kansas

Peter S. Kaplan, PhD, Indiana University

Kevin S. Masters, PhD, Brigham Young University

Associate Professors:

David Albeck, PhD, University of Colorado, Boulder

Sondra Bland, PhD, University of Texas

Kristin Kilbourn, PhD, University of Miami

Erik Oleson, PhD, Wake Forest University

Krista W. Ranby, PhD, Arizona State University

Amy Wachholtz, PhD, Bowling Green University

Jason Watson, PhD, Washington University
Michael Zinser, PhD, University of Wisconsin, Madison

Assistant Professors:

Benjamin Greenwood, PhD, University of Colorado, Boulder
Carly Leonard, PhD, Johns Hopkins University
Jonathan Schaffer, PhD, St. John's University

Associate Professor, Clinical Teaching Track:

Joan Bihun, PhD, Wayne State University
Edward Dill, PhD, University of Kansas
Kevin Everhart, PhD, University of South Carolina
Lindsey Hamilton, PhD, Wake Forest University
Vivian Shyu, PhD, University of Denver

Senior Instructors:

Bethann Bierer, PhD, University of Denver

Emeritus Professors:

Rick M. Gardner, PhD, University of Nevada
Barbara Walker, PhD, The Ohio State University

Psychology is the scientific study of behavior, consisting largely of the following major areas of study: experimental psychology, biopsychology, animal behavior, clinical psychology, developmental psychology, social psychology, cognitive psychology, personality, industrial/organizational psychology and abnormal psychology. The requirements for the major are designed to introduce the student to the spectrum of Psychology, including an early exposure to research methods and statistics.

The Psychology major prepares students for employment and for graduate study in Psychology and related fields. The Psychology department also offers a PhD in Clinical Health Psychology.

Curriculum Goals and Essential Learning Outcomes

Goal 1: Knowledge Base of Psychology

Students will recognize, explain, and distinguish the major concepts, theoretical perspectives, empirical findings, and historical trends in Psychology.

Essential Learning Outcome: The development of *Knowledge of Human Cultures and the Physical and Natural World*

Goal 2: Research Methods in Psychology

Students will demonstrate the statistical, organizational, writing, and analytical skills necessary to interpret and conduct meaningful and valid research in Psychology.

Essential Learning Outcomes: The development of *Intellectual and Practical Skills*, including *Quantitative Literacy*, *Information Literacy*, and *Inquiry and Analysis* skills.

Goal 3: Critical Thinking Skills

Students will use skeptical inquiry and scientific thinking skills to interpret and solve problems related to behavior and mental processes.

Essential Learning Outcomes: The development of *Intellectual and Practical Skills*, including *Critical Thinking* skills.

Goal 4: Application of Psychology

Students will apply psychological principles to solve personal, social, and/or organizational problems.

Essential Learning Outcomes: The development of *Intellectual and Practical Skills*, including *Problem Solving* skills.

Goal 5: Values in Psychology

Students will evaluate evidence, tolerate ambiguity, act ethically, recognize and respect diversity, and/or reflect other values that are the underpinnings of Psychology as a discipline.

Essential Learning Outcome: The development of *Personal and Social Responsibility*, including *Ethical Reasoning* and *Intercultural Knowledge and Competence*.

Undergraduate Information

[Click here to learn about the requirements for the BA in Psychology.](#)

[Click here to learn about the requirements for the BS in Psychology.](#)

[Click here to learn about the requirements for the Minor in Psychology.](#)

[Click here to learn about the requirements for the Minor in Behavioral and Cognitive Neuroscience.](#)

Honors

There are two ways in which a student graduating with a Bachelor of Arts or Bachelor of Science degree in Psychology can graduate with honors. First, the College of Liberal Arts and Sciences (CLAS) awards the honor of graduating “with distinction” primarily based on the student having a high overall grade point average.

The second form of honors, “Latin honors,” is awarded by individual departments within CLAS, including psychology. The CU Denver Department of Psychology has approved a very rigorous set of requirements for Latin honors. Successful completion of an honors project is at least a year-long, multi-faceted process in which the student makes a contribution to our knowledge in psychology. A student who satisfies these requirements will have truly earned a noteworthy academic achievement of which they rightfully should be proud.

Students interested in research are encouraged to pursue opportunities as early in their academic career as possible. These early research experiences can be useful in helping formulate research ideas and hypotheses that can form the basis of an honors thesis project. Listed below are the policies and requirements for completing an honors project.

Am I eligible for the honors program?

To be eligible for the Psychology honors program, you must:

- Be a Psychology major
- Be at least a junior
- Have an overall GPA of 3.5 or higher at the start of the project
- Have a GPA of 3.5 or higher in psychology courses taken at UCD.
- Have a faculty mentor for your project

What types of projects are appropriate for an honors thesis?

An honors thesis can take one of the following forms:

- An original empirical study designed and carried out by the student. The experimental design must be substantially complex to warrant honors. Honors students may collect their own data for this project or may use archival data for the purposes of answering their own original question. A research question is considered to be substantially complex enough if the analyzed data would be of high enough quality to be presented at a regional research meeting.
- A substantive, integrative library review in an area approved by the honors committee, culminating in a high quality review article which includes proposed research directions designed by the student to gather knowledge lacking in the current scientific literature.
- A substantive, integrative critical analysis of a major theoretical issue in the field of psychology approved by the honors committee and culminating in a high quality theoretical paper.

What are the requirements for earning honors in Psychology?

In addition to formally proposing your project to your honors committee, completing the approved project, writing the thesis, and ultimately successfully defending your honors thesis, you must take three honors courses. They are:

- PSYC 4680 - Behavioral Sciences Research Seminar (1 cr. Fall 2 cr. Spring) - Two Semesters total, Fall & Spring
- PSYC 4780 - Behavioral Sciences Research: Ethics and Issues (3 cr.) - Any Semester

- PSYC 4880 - Directed Research Credit hours: (3 cr.) Any semester

You can take up to 6 credit hours of “PSYC 4880: Directed Research” if and when it is helpful to your project. You should discuss this with your faculty mentor.

What is an honors thesis committee?

You must arrange for three faculty members to serve on your thesis committee, only one of whom may be external to the Psychology Department. One of the faculty members must be designated as the chair of the committee. The chair must be a full time member of the CU Denver Psychology Department and be of tenure track rank, unless a waiver is granted by the Dean’s office. All members of the committee must be chosen during the semester in which the proposal is being written.

How are honors judged and awarded?

Enrolling in the Honors program and writing a thesis do not guarantee that you will receive Latin honors. Your faculty committee determines the worthiness of your project for Latin honors at the defense of your thesis.

For successfully defended projects, GPA determines the level of honors:

3.80-4.0: summa cum laude
3.60-3.79: magna cum laude
3.50-3.59: cum laude

How do I sign up for the honors program?

Students interested in research are encouraged to pursue opportunities as early in their academic career as possible. These early research experiences can be useful in helping formulate research ideas and hypotheses that can form the basis of an honors thesis project. Make an appointment to speak with your major advisor to determine if an honors thesis is right for you.

EXCEPTIONS

Exceptions to these rules may be granted via a student appeal supported by all of the committee members and submitted to the Psychology Department Chair. The appeal must be supported by all committee members and approved by the departmental chair.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

RELIGIOUS STUDIES

Director: Sharon L. Coggan

Office: Plaza Building, 113

Telephone: 303-315-7220

Faculty

Professors:

Robert Metcalf (Philosophy)

Associate Professors:

Nancy Ciccone (English)

Sharon Coggan, Clinical Teaching Track (Philosophy/Religious Studies)

Colleen Donnelly (English)

Sarah Hagelin (English)

Rachel Harding (Ethnic Studies)

Assistant Professors:

Dale Stahl (History)

Katherine Mohrman (Ethnic Studies)

Instructors:

Kari Alexander (Sociology)

Bassem Hassan (Political Science)

Daryl Mehring (Philosophy)

Richard Smith (History)

Lecturers:

Mary DeForest (Modern Languages)

AnnMarie Bridges (Religious Studies)

Albert McClure (Religious Studies)

Stephanie Yuhas (Religious Studies)

An undergraduate minor is offered in Religious Studies, a discipline that overlaps with many other fields of study: anthropology, literature, philosophy, psychology and others. Religion has played a vital role in history and continues to do so in contemporary life. The degree of interaction between a religious tradition and its host society is profound. Knowledge of its religion(s) is essential for a genuine understanding of each culture. Students will study the nature of the belief systems of the world's great religious traditions. Specific courses will offer the possibility of focusing one's studies in the areas of ancient myth and shamanic traditions, Judaic and Christian studies, Islam, Asian religions, psychology of religion, philosophy of religion, anthropology and sociology of religion, religion and literature and biblical studies.

[Click here to learn about the requirements for the Minor in Religious Studies.](#)

SOCIAL JUSTICE

Director: Ryan Crewe

Office: ACAD 3303

Telephone: 303-315-3566
E-mail: ryan.crewe@ucdenver.edu

Faculty

Christopher Agee
Jody Beck
Edelina Burciaga
Jana Everett
Mia Fischer
Rodney Herring
David Hildebrand
Cheryl Matias
Lucy McGuffey
Glenn Morris
Marty Otanez
Omar Swartz
Sarah Tyson
Sam Walker
James Walsh
Margaret Woodhull

Undergraduate Information

The Social Justice Program is home to the Social Justice Minor and organizes innovative community and campus events to address the pressing social and economic issues of the 21st century. The Social Justice Minor is designed for students who are passionate about being engaged citizens and effecting change locally and globally. To this end, students will be exposed to global perspectives on social movements, conflict resolution, environmental stewardship, critical theory, and grassroots organizing.

Student Learning Goals

Earning a Social Justice Minor will make students competitive for graduate school as well as for jobs in NGOs, public health, political office, community leadership, and in the ever-increasing number of modern corporations that seek employees who are committed to sustainable and ethical vocations. We create learning opportunities that emphasize an integrated understanding of the social, political, economic, and cultural dimensions of the major challenges facing humanity in the new millennium. By cultivating engaged and informed citizens, we seek to create future leaders who will have the skills and knowledge necessary to effect meaningful change.

[Click here to learn about the requirements for the Minor in Social Justice.](#)

SOCIOLOGY

Chair: Teresa M. Cooney
Program Assistant: Rachel M. Gallegos
Office: Lawrence Street Center, Suite 420
Telephone: 303-315-2148
Fax: 303-315-2149

Faculty

Professors:

Teresa M. Cooney, PhD, The Pennsylvania State University
Jennifer A. Reich, PhD, University of California, Davis

Associate Professors:

Candan Duran-Aydintug, PhD, Washington State University
Keith Guzik, PhD, University of Illinois at Urbana-Champaign

Assistant Professors:

Brenden Beck, PhD, City University of New York-Graduate Center
Edelina Burciaga, PhD, University of California-Irvine
Adam M. Lippert, PhD, The Pennsylvania State University
Esther Sullivan, PhD, University of Texas at Austin

Assistant Professor, Clinical Teaching Track:

Maren T. Scull, PhD, Indiana University

Senior Instructor:

Kari Alexander, PhD, University of Colorado Boulder
Jenny Vermilya, PhD, University of Colorado Boulder

Instructors:

Carlos Reali, MA, University of Colorado Denver

Professors Emeritus:

Sharon K. Araji, PhD, Washington State University
Karl H. Flaming, PhD, Syracuse University

Associate Professor Emeritus:

Richard H. Anderson, PhD, University of Oregon

Undergraduate Information

Sociology is the scientific study of groups, social processes, social institutions and behavior. The major in sociology is designed to familiarize students with these areas through an understanding of theory, methods and data analytic procedures employed within them. Three certificate options at the undergraduate level allow students interested

in gaining concentrated study in a sub-area of sociology to do so. They include: Criminology; Families and Social Welfare; and Sociology of Health and Medicine. All students majoring in sociology, regardless of whether they pursue a certificate (or multiple certificates), develop a strong foundation in the basics of the discipline, including the use of qualitative and quantitative research methodologies and theory.

The major prepares students for either graduate study or the pursuit of a career immediately upon completion of the BA degree. The required Senior Capstone course is a critical resource in preparing for either option. Graduates with a Sociology BA are employed in a variety of professional areas, including the criminal justice system, education, health and social services, and with state and local government agencies.

The department has developed the following rationale for courses offered:

1. Lower-division courses (for majors and non-majors)
 - a. 1000-level courses provide an introduction to the broad sociological perspective as it applies to social life, social systems and society.
 - b. 2000-level courses introduce students to somewhat more specific content areas: social psychology, deviant behavior and social inequalities, etc.
2. Upper-division courses (3000 and 4000)
 - a. 3000-level courses serve as advanced surveys of some specific area of concentration. They are designed to acquaint students with the issues, methods, concepts and theoretical frameworks employed in the content area. Such courses as medical sociology, criminology, sociology of family, and race and ethnicity are offered at this level. Many of these courses are open courses, in that students from other departments and colleges are encouraged to enroll in them.
 - b. 4000-level courses are devoted to a more detailed in-depth examination of specific issues, approaches and concepts within the previously identified content areas. These are advanced courses and are geared more directly to sociology and social science majors.
 - c. Sophomore standing is required for enrollment in all non-core 3000-level courses, and junior standing is required for enrollment in 4000-level courses.

The department requires that SOCY 1001 be completed prior to any of the major's core requirements (SOCY 2001, SOCY 3115, SOCY 3119, SOCY 3140 and SOCY 4830).

[Click here to learn about the requirements for the Major in Sociology.](#)

[Click here to learn about the requirements for the Minor in Sociology.](#)

[Click here to learn about the requirements for the Undergraduate Certificate in Criminology.](#)

[Click here to learn about the requirements for the Undergraduate Certificate in Families and Social Welfare.](#)

[Click here to learn about the requirements for the Undergraduate Certificate in Sociology of Health and Medicine.](#)

[Click here to learn about the 4+1 BA to MA program.](#)

Departmental Honors

Students wishing to graduate with departmental honors in sociology (*cum laude*, *magna cum laude*, or *summa cum laude*) must have a minimum cumulative GPA of 3.0 (while enrolled at the University of Colorado Denver) and a 3.2 or higher in all sociology courses. Additional requirements are available in the sociology office. Qualified students are encouraged to apply for the honors program no later than the beginning of their senior year.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

SUSTAINABILITY

Director: David Knochel
Office: North Classroom 3016 D
Telephone: 303-315-7534
Email: david.knochel@ucdenver.edu

Faculty

Professors:
Stephen Koester, Anthropology
Diana F. Tomback, Integrative Biology

Associate Professors:
Steven R. Beckman, Economics
John Brett, Anthropology
Greg Cronin, Integrative Biology
Larry Erbert, Communication
Randall P. Tagg, Physics
Deborah S. K. Thomas, Geography
John W. Wyckoff, Environmental Sciences

Assistant Professors:
Laurel Hartley, Integrative Biology
Rafael Moreno-Sanchez, Geography
Bryan S. Wee, Geography

Questions of sustainability are currently among the most important facing humankind and are receiving tremendous attention in the media. Because issues of sustainability do not arise from single causes, nor can solutions be developed from within narrow disciplinary frameworks, a multidisciplinary perspective is not only desirable but necessary to identify and understand problems, and create, evaluate and implement solutions.

Specializations in this critical area of study include: health and the environment,

sustainable ecology, environmental ethics, environmental policymaking and policy analysis, institutional behavior, community-based and participatory approaches to sustainable development and conservation, environmental justice, sustainable food production and critical consumerism. The sustainability minor offers a holistic approach to development and daily living, which demands scientific, economic, environmental and social perspectives to understand and implement actions that can inform the public, business, industry, government and service organizations on how their activities affect the environment.

[Click here to learn about the requirements for the Minor in Sustainability.](#)

WOMEN'S AND GENDER STUDIES

Director: Gillian Silverman (English)

Graduate Advisor: Margaret Woodhull (Humanities)

Office: 1050 9th Street, #102

Telephone: 303-556-5835

Associated Faculty

Joanne Addison (English)

Brenda J. Allen (Communication)

Elizabeth Allen (Psychology)

Laura Argys (Economics)

Pompa Banerjee (English)

Nicole Beer (English)

Michelle Comstock (English)

Candan Duran-Aydintug (Sociology)

Paula Espinoza (Ethnic Studies)

Jana Everett (Political Science)

Sarah Fields (Communication)

Sonja Foss (Communication)

Andrea Haar (Sociology)

Sarah Hagelin (English)

Rachel Harding (Ethnic Studies)

Amy Hasinoff (Communication)

Pamela Laird (History)

Marjorie Levine-Clark (History)

Donna Martinez (Ethnic Studies)

Candice Shelby (Philosophy)

Sarah Tyson (Philosophy)

Cate Wiley (English)

Women's and Gender Studies (WGST) is an interdisciplinary program that focuses on the centrality of gender and sexuality to understanding our past and present worlds. Students and faculty probe assumptions about men and women and question structures of inequality as they play out in local and global contexts. Through a study of gender and sexuality, we expand our thinking about other relations of power, such as race, class, ethnicity, nationality and physical ability. WGST fosters connections with the local community and promotes advocacy of human rights and social justice.

Undergraduate Information

Click [here](#) to learn about the requirements for the Minor in Women's and Gender Studies.

Individually Structured Major

Students interested in a major in Women's and Gender Studies may develop one through the Individually Structured Major (ISM). The ISM is an interdisciplinary major based on an individual contract rather than a preset list of courses. By choosing an ISM, students can pursue their interests in WGST across a variety of departments. For more information on an ISM in Women's and Gender Studies, contact Associate Dean Marjorie Levine-Clark and see the Individually Structured Major section of this catalog.

Graduate Information

Please go to the Graduate catalog to read about our graduate programs.

SCHOOL OF PUBLIC AFFAIRS

Dean: Paul Teske

Associate Dean: Tanya Heikkila

Associate Dean: Kelly Hupfeld

Assistant Dean, Denver: Kathy Kilpatrick

Contact

Office:

Lawrence Street Center, Fifth Floor

1380 Lawrence Street

Telephone: 303-315-2228

Fax: 303-315-2229

E-mail: spa@ucdenver.edu

Mailing Address

School of Public Affairs

Campus Box 142

P.O. Box 173364

Denver, CO 80217-3364

Current Student Inquiries

General Inquiries: 303-315-2228

Graduate Students Last Name A-L:

Dawn Savage, Student Services Coordinator
303-315-2743

Dawn.Savage@ucdenver.edu

Graduate Students Last Name M-Z:

Antoinette Sandoval, Student Services Coordinator
303-315-2487

Antoinette.Sandoval@ucdenver.edu

Undergraduate Students

Hansen Millison, Academic Advisor
303-315-5818

Hansen.Millison@ucdenver.edu

Nora Scanlon, BACJ Academic Advisor/Program Coordinator
303-315-0021

nora.scanlon@ucdenver.edu

Prospective Student Inquiries

Undergraduate and Graduate

Rebecca Gianarkis

303-315-2560

spa@ucdenver.edu

Application Deadlines

Undergraduate Deadlines

For fall semester - July 22

For spring semester - December 1

For summer semester - May 3

CU Denver School of Public Affairs

Lead. Solve. Change.

CU Denver School of Public Affairs prepares the next generation of leaders in public service and criminal justice professions to solve society's most pressing problems. Faculty at the School of Public Affairs are known for their rigorous scholarship and dedication to public affairs, regularly winning awards for their research and teaching.

Nationally ranked for excellence, the School of Public Affairs offers the following degree programs:

- Bachelor of Arts in Criminal Justice
- Bachelor of Arts in Public Service
- Master of Criminal Justice (MCJ)
- Master of Public Administration (MPA)
- Doctor of Philosophy in Public Affairs

The School of Public Affairs also offers undergraduate and graduate certificates programs in criminal justice and public affairs. Programs are offered in person, online or in a hybrid format, with all formats taught by the same award-winning faculty.

The school attracts a dynamic mix of students representing a diversity of ages and experience - from undergraduates just beginning their public service careers to well-seasoned professionals already immersed in public or nonprofit management and policy. Students have opportunities to become involved in community-centered research projects with faculty, learn from distinguished local practitioners in their classes, serve in internships in government and nonprofit offices, work in partnership with the school's applied research centers and participate in the numerous public affairs-related events held by the school each semester.

Working together, faculty, staff and students conduct research that improves the quality of life and informs policy making and management in the public and nonprofit sectors. Graduates of the School of Public Affairs are prepared to lead in their fields, solve pressing social issues and change communities for the better. Alumni include legislators, policy analysts and advocates, state agency directors, police chiefs, city and county managers, nonprofit leaders, and university faculty and administrators.

Highlights

The MPA program is accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA), the authoritative accrediting body in the field of public policy, affairs and administration.

US News & World Report 2019 Rankings in the Nation:

- #34 - Best Graduate Public Affairs Schools
- #12 - Environmental Policy and Management
- #19 - Online Master of Criminal Justice
- #23 - Public Finance and Budgeting
- #29 - Public Management and Leadership
- #29 - Public Policy Analysis

Course List for School of Public Affairs

[Click here for a complete course list for the School of Public Affairs.](#)

Departments and Programs

(For Graduate Programs please refer to the Graduate catalog.)

School of Public Affairs

Programs

Bachelor of Arts

- Criminal Justice BA
- Criminal Justice BA with Law Enforcement Concentration
- Criminal Justice BA with Victims and Victim Services Concentration
- Public Service, BA
- Public Service, BA with Emergency Management Concentration
- Public Service, BA with Environmental Policy and Management Concentration
- Public Service, BA with International Development Concentration
- Public Service, BA with Nonprofit Management Concentration

Certificate

- Law Enforcement Certificate
- Nonprofit Management Certificate
- Victims and Victim Services Certificate

Minors

- Criminal Justice Minor
- Law Enforcement Minor
- Nonprofit Management Minor
- Public Service Minor
- Victims and Victim Services Minor

Pathway's Degree

- CLAS/Public Administration, BA/MPA
- Criminal Justice, BA/MCJ
- Public Service/Public Administration, BA/MPA

GRADUATION AND UNDERGRADUATE CORE REQUIREMENTS

General Graduation Requirements

To receive a bachelor's degree from the University of Colorado Denver, students must satisfy all of the requirements below, in addition to completing a Major and fulfilling all of their School or College requirements.

Please note that the requirements below are basic university requirements. Consult your School/College and Major to determine whether they have put additional requirements in place that further restrict these categories.

- A minimum of 120 credit hours is required to graduate from CU Denver with a bachelor's level degree
- A minimum 2.000 cumulative GPA is required for all University of Colorado coursework
- Satisfactory completion of the CU Denver Core Curriculum (an 11 course, 34-38 semester hour curriculum of general education, outlined here)

Repeat Statement

Though students may take any course more than once, credit toward graduation is counted only once for a typical course, unless otherwise noted in the course description. Some types of courses (e.g. Internships, Independent Studies, etc.) may be repeatable for applicable credit within a certain range of total semester hours. See course descriptions for the max semester hours applicable from each course.

Residency Requirement

The Higher Learning Commission (HLC), which accredits this university, requires that at least 30 of the 120 credits earned for a baccalaureate degree be taken in residence at the University of Colorado Denver. Students are advised that individual schools/colleges may have higher residency requirements.

Philosophy of the Core Curriculum

The University of Colorado Denver subscribes to a liberal arts philosophy of education in order to develop a broad set of academic skills for the baccalaureate student and to establish a foundation for lifelong learning. Since 1990, the CU Denver Core curriculum of general education has been a campus-wide program for all undergraduate students, independent of the student's major.

The CU Denver faculty designed the Core curriculum to provide undergraduate students a high quality academic foundation while still allowing flexibility based on students' individual backgrounds and specific career goals. The Core curriculum develops multiple literacies, stimulates creative thinking, and utilizes technology. The Core engages students in developing sensitivity to diversity and developing their place in an urban environment, as well as in the rapidly changing global environment. The Core provides an understanding of ourselves, ours and other cultures, and our environment.

CU Denver Core Curriculum: Full Course Listing

Click the link below to expand/collapse a full listing of the course options for each CU Denver Core category.

[CU Denver Core Curriculum \(same page display\)](#)

Or, click here to view the CU Denver Core Curriculum full course listing in a separate page.

****Some Core requirements may overlap with other major and graduation requirements and others may not. Students should work with an advisor to understand degree requirements and determine their optimal degree plan.**

School/College Specific Graduation Requirements

Business School
College of Architecture and Planning
College of Arts & Media
College of Engineering, Design and Computing
College of Liberal Arts and Sciences
School of Education and Human Development
School of Public Affairs

BUSINESS SCHOOL GRADUATION REQUIREMENTS

In addition to the campus core, the following requirements must be met:

Required Courses

The following courses are required prerequisites for courses in the business core and may count toward the campus core as well. Please see an advisor for more details:

- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics

- MATH 1060 - Finite Mathematics (Check with your advisor to request a higher level math substitute)

The following courses are graduation requirements for all business students:

- COMM 2050 - Business and Professional Speaking

- ENGL 3170 - Business Writing
- Business General Credit–Experiential Learning - Business students must earn 3 semester hours of credit in an approved Experiential Learning course: study abroad, internship, or 1 of 3 project-based courses.

Business Core

Specific grades are required for the business core courses in order to meet prerequisites and qualify for graduation. Prerequisites are listed within the course description. Students should meet with their advisor for recommendations on which courses to take first.

The following courses require a C- or higher:

- BUSN 1200 - Career and Professional Development
- ISMG 2050 - Introduction to Business Problem Solving
- BANA 2010 - Business Statistics
- ACCT 2200 - Financial Accounting and Financial Statement Analysis
- ACCT 2220 - Managerial Accounting and Professional Issues
- BLAW 3050 - Business Law and Ethics

The following courses require a C or higher:

- BANA 3000 - Operations Management
- FNCE 3000 - Principles of Finance
- ISMG 3000 - Technology In Business

(Note: Students in the Accounting or Financial Management emphasis or Accounting or Financial Management with specializations in Information Systems are required to complete

ACCT 4054 - Accounting Information Systems_instead of ISMG 3000 - Technology in Business.)

- MGMT 3000 - Managing Individuals and Teams

- MKTG 3000 - Principles of Marketing
- MGMT 4500 - Business Policy and Strategic Management (This is a capstone course and must be completed in your last semester and only after the 33 credit hours of business core listed above are completed).

International Studies

Choose **one** of the following courses: (a specific course may be required for some majors)

- ACCT 4370 - International Accounting
- FNCE 4370 - International Financial Management Students in the Finance Major, Financial Management Major, and Financial Management with Information Systems Specialization Major require this course.
- MGMT 4400 - Environments of International Business
- MKTG 4200 - International Marketing
- RISK 4509 - Global Risk Management

Other courses in international business may be offered periodically that satisfy the international studies requirement.

Major

Business students must complete the prescribed courses in a major at CU Denver. Transfer courses are not permitted to apply in the major.

The majors include:

- *Accounting Major - BS in Business Administration
- Entrepreneurship Major - BS in Business Administration
- Finance Major - BS in Business Administration
- *Financial Management Major - BS in Business Administration
- Human Resources Management Major - BS in Business Administration
- Information Systems Major (specializations available in Accounting, Financial Management, Human Resources Management, Management, and Marketing) - BS in Business Administration
- International Business Major - BS in Business Administration
- *Management Major - BS in Business Administration
- *Marketing Major - BS in Business Administration
- Risk Management and Insurance Major - BS in Business Administration

- Sports Business Major - BS in Business Administration

The specific requirements of these majors are described in subsequent sections.

*Option to specialize in Information Systems

Experiential Learning

Business students must earn 3 semester hours of credit in an approved Experiential Learning course. This can be satisfied by completing: an Internship; MGMT/ISMG 4900; MGMT 4120; MGMT 4825; or completing an approved Study Abroad business course. Students completing the RISK program must take RISK 3949.

Experiential learning is a graduation requirement for students beginning their bachelor degree program at any institution in summer 2007 or later. Students beginning their bachelor degree program prior to summer 2007 are not required to meet the experiential learning requirement. Students may petition to waive the experiential learning requirement based on documented full time work experience of one year or more related to their chosen major.

Other Courses

Guidelines for Elective Credits. Elective credits should be selected carefully because not all classes are acceptable. Generally, to be acceptable, electives must be taught by regular University of Colorado faculty, must have a form of assessment, such as a term paper and/or examinations, and must be regular classroom-type classes. Course coverage must be college level, not repetitious of other work applied toward the degree, must be academic as opposed to vocational or technical and must be part of the regular university offerings.

Independent Study

Junior or senior business students desiring to work beyond regular course coverage may take variable credit courses (1-3 semester hours) as nonbusiness electives under the direction of an instructor who approves the project, but the student must have the appropriate approval before registering. A maximum of 6 semester hours may be applied toward degree requirements. An independent study request form must be signed by the student, the instructor, the program director and the Assistant Dean.

Internship

A maximum of 6 semester hours of approved independent study, internships, experimental studies, choir, band and/or music lessons, art lessons may be applied.

Pass/Fail

Students may select the pass/fail grading option for some courses. In addition to Downtown Campus policies covering the pass/fail grading option (see the Academic Policy section of this catalog), Business School students must adhere to the following pass/fail grading policies:

- Courses used to complete Business Core, a student's major, business minor, specializations, and/or certificate requirements may not be taken on a pass/fail basis.
- Courses required to demonstrate proficiency may not be taken on a pass/fail basis (includes the first two semesters of foreign language and regional expertise coursework.)
- Courses used to satisfy Business School graduation requirements may not be taken on a pass/fail basis. (COMM 2050, ECON2012, ECON 2022, ENGL 3170, and MGMT/ISMG 4900, MGMT 4120, and MGMT 4825. Exception: an internship must be taken on a pass/fail basis.) ECON2012 may be taken as pass/fail to satisfy the CU Denver core curriculum, however a letter grade is required in order for it to satisfy the Business School graduation requirements.

GPA Requirement

To graduate, a student must maintain a minimum cumulative GPA of 2.0 for all university courses as well as a minimum college GPA of 2.0 for all business courses taken at CU Denver. All graded attempts are calculated in the cumulative and Business GPAs.

Upper Division

All students receiving a BS degree in business must take at least 45 upper-division semester hours.

Residency Requirement

At least 30 semester hours of business courses (including the business major courses) must be completed as a CU Denver student. The 30 hours for residence must include MGMT 4500.

Business School Foreign Language Hours Proficiency

The Business School's foreign language requirement or regional expertise requires that students demonstrate a minimum level of proficiency in one foreign language or culture.

This requirement is met through the completion of one of the following:

- a second-year (Level II) high school course with a minimum grade of C-
- a second-semester-level college course (1020) with a minimum grade of C-
- satisfactory proficiency testing, including taking and passing a proficiency exam
- completion of three regional expertise courses

***High school courses will not apply toward degree credit; however, they will serve to satisfy the foreign language requirement. Students may need additional electives to make up this credit - check with an advisor.**

Students choosing the regional expertise requirement with one year of high school foreign language or one semester of college-level work can satisfy the requirement by completing a minimum of 6 semester hours of course work from an approved list that relates to the politics, arts, history, culture or economy of any region of the world other than North America.

Courses used in the expertise area must meet the Business School guidelines and can be chosen from the list specified by the Business School. Students should contact their business advisor if they have questions. The advisors can be reached by emailing undergrad.advising@ucdenver.edu or calling 303-315-8110 to schedule an appointment.

Major

Complete all requirements associated with your individual major.

COLLEGE OF ARCHITECTURE AND PLANNING GRADUATION REQUIREMENTS

Pass/Fail

Only internships, independent studies and non-architecture elective courses may be taken pass/fail. Required architecture courses may not be taken pass/fail. A maximum of 6 hours pass/fail credit may be applied toward the BS Architecture degree. Courses taken in excess of the maximum will not be applied toward degree credit. Pass/fail determination must be made within the posted deadlines (at census dates) and may not be rescinded (unless approved by the undergraduate committee).

Independent Study and Internships

Junior or senior architecture students desiring to work beyond regular course coverage may take variable credit courses (1-3 semester hours) as architecture electives under the direction of an instructor who approves the projects for independent study and/or the architecture department chair who approves an internship. The student, the instructor, and the undergraduate advisor must sign independent study request forms.

All internships must be registered through and approved by the Experiential Learning Center on the main Auraria campus and the architecture department chair. Independent study and internship credit hour restrictions do apply, as described below:

- Independent Study: A maximum of 6 semester hours of independent study credit may count toward Architecture electives. Requires department approval.
- Internship: A maximum of 6 semester hours of internship credit may count toward Architecture electives.
- The total combination of independent study and internship credit may not exceed 9 semester hours toward Architecture electives.
- Two independent studies or two internships will not be allowed in any one semester.

Graduate-Level Courses

With prior written approval of the architecture department chair or undergraduate advisor, students may take a maximum of 6 semester hours of graduate-level architecture elective credits. GPA and class standing review may be required. Graduate-level courses from other departments must be reviewed and approved by the architecture department chair or undergraduate advisor for applicability to degree requirements.

Foreign Language Proficiency

BS Architecture students are required to demonstrate a minimum level of proficiency in one foreign language. This requirement is met through the completion of one of the following:

- A second year (level II) high school course with minimum grade of C- or 1.7
- A second semester level college course (1020) with a minimum grade of C- or 1.7
- Satisfactory proficiency testing. Contact the CU Denver Department of Modern Languages at 303-315-7234 for details

Repeating Courses

A failed course (grade of F) may be repeated; however, the F will be included in the GPA and will appear on the transcript. Students must earn at least a C- grade in required

architecture and math courses, including design studios. Required architecture courses must be repeated if the student earns less than a C- grade.

Residency Requirement

Students must complete a minimum of 30 credit hours from CU Denver. Students must also satisfactorily complete Architecture Design Studios III, IV and V (ARCH 3120, 4110 and 4120) at CU Denver.

Undergraduate Upper-Division Requirement

Students must complete a minimum of 45 upper-division (3000-4000 level) credit hours.

Courses from Other Institutions

Grades of C- or better must be earned in courses from other institutions to receive undergraduate bachelor degree credit. Courses from other institutions will be transferred and applied based upon current transfer credit policies and limitations established by the College of Architecture and Planning and the University of Colorado Denver. Students should consult with the undergraduate academic advisor prior to taking courses from other institutions to determine applicability to BS Architecture degree requirements.

A maximum of nine credit hours may be transferred from other institutions as architecture electives, and transfer coursework may only be applied toward a maximum of two studio courses (ARCH 2110 Design Studio I and ARCH 3110 Design Studio II). Transfer credit for ARCH 2110 Design Studio I and ARCH 3110 Design Studio II are contingent upon a satisfactory portfolio review.

The maximum number of credit hours applied to individual architecture major requirements from transfer coursework must not exceed the number of credit hours given to its equivalent CU Denver course. Excess credit hours from architecture-related transfer coursework will not count toward the 120 credit hours needed for the BS Architecture degree.

Major

Complete all requirements associated with your individual major.

COLLEGE OF ARTS & MEDIA GRADUATION REQUIREMENTS

Important Note:

In addition to the requirements listed below, College of Arts & Media (CAM) students must complete requirements listed on the CU Denver Core Curriculum page and also General Graduation Requirements listed on the Graduation and Undergraduate Core Requirements page in this catalog.

Grade and GPA Requirements

- A cumulative GPA of 2.0 is required in all University of Colorado course work
- A minimum of C (2.0) is required for each course applied toward a CAM major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Upper Division

For BA and BFA degrees, a minimum of 45 semester hours of upper division (3000/4000-level) course work is required.

Residency Requirement

A minimum of 30 semester hours of resident credit is required.

CAM General Course Requirements

Non-Major Arts

All CAM undergraduates must complete at least one course in the arts outside of their major area. Specifically:

- **Music majors** must take three semester hours in theater, film and/or visual arts
- **Visual arts majors** must take three semester hours in film & television and/or music
- **Film and television majors** must take three semester hours in visual arts and/or music

Students may mix and match disciplines to reach 3 semester hours, or they may take a 3-semester hour course in one discipline.

Note: The course selected to fulfill Non-Major Arts cannot also fulfill a category of the CU Denver Core.

Foreign Language

For BA degree (Art History) students must complete the foreign language requirement using one of the options below:

- Completion of a 2nd year (Level II) high school course with a minimum grade of C- (1.7) in the final semester.

- Completion of a 2nd semester (Level II) college-level course with a minimum grade of C- (1.7). May not be taken pass/fail. A “conversation” course is not acceptable. This option may involve taking up to 10 semester hours.
- Demonstration of college-level second semester proficiency by exam. Contact the CU Denver Department of Modern Languages at 303-315-7234 for details.

For BFA degrees in Film and Television students must complete the foreign language requirement using one of the options below:

- Take a second course from the approved list for Core category: International Perspectives (recommended to be taken at the upper division (3000/4000) level)
- Take any level foreign language course

For BFA degrees in Fine Arts and the BS in Music, foreign language is not included as a requirement.

General Electives

CAM undergraduates may need to complete general elective courses to meet minimum credit requirements described in the General Graduation Requirements.

Majors

All CAM students must be admitted to a major and an emphasis within that major. Students must complete all major requirements to graduate. Links to information about specific majors and emphases, including any required reviews/assessments for admission, may be found on the Programs page in this catalog.

Minors

Departments in the college have developed a variety of minors. A maximum of six non-CU Denver semester hours can be used toward each CAM minor. In addition, students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Students are not required to have a minor to graduate. Students may choose to declare a minor in CAM or in another college/school in the university. Links to information about specific minors, including any required reviews/assessments for admission, may be found on the Programs page in this catalog.

More than 120 semester hours may be required to complete both a major and minor.

Certificates

Departments in the college are working to develop a variety of certificates. In general, all credits toward a CAM certificate must be completed at CU Denver.

Students are not required to have a certificate to graduate. Students may choose to declare a certificate in CAM or in another college/school in the university. Links to information about specific certificates, including any required reviews/assessments for admission, may be found on the Programs page in this catalog.

More than 120 semester hours may be required to complete both a major and a certificate.

Double Emphases

Students may graduate with more than one emphasis within the same CAM major by completing all requirements for each emphasis (e.g., BFA in Fine Arts with double emphases in digital design and photography). Completing these requirements will likely require more than 120 semester hours.

Double Majors

Students may graduate with more than one major in CAM by completing all requirements for each major within a single degree (e.g., a BFA with a major in fine arts, photography emphasis AND a second major in film & television). Completing these requirements will likely require more than 120 semester hours. Double majors apply to students completing two majors from different CAM departments.

Double Degrees

Students may earn two degrees in the College of Arts & Media (e.g., BFA in Film & Television and BA in Fine Arts) or from two different schools or colleges in the university (e.g., BS in Music and a BS in Physics) simultaneously by fulfilling all requirements for both degrees. Students must complete a minimum of 120 semester hours applied toward the two degrees, and likely more will be needed to fulfill all requirements.

Second Degrees

Students who have been awarded a bachelor's degree from CAM may be granted a second bachelor's degree provided that (a) all general requirements for the second degree have been met; (b) the degree plan for the second bachelor's degree is different from the first (for example, a student cannot twice complete a BFA in Fine Arts with an emphasis in photography); and (c) the college and major department residence requirements are satisfied. A second degree from CAM requires a minimum of 30 additional semester hours.

COLLEGE OF ENGINEERING, DESIGN AND COMPUTING GRADUATION REQUIREMENTS

Hours

A minimum of 130 semester hours is required for students seeking a civil engineering degree; a minimum of 128 semester hours for bioengineering, computer science, electrical engineering or mechanical engineering degrees.

Attendance

Successful work in the College of Engineering, Design and Computing is dependent upon regular attendance in all classes. Students who are absent should make arrangements with instructors to make up the work missed. Students who for illness or other good reason miss any examination must notify the instructor no later than the end of the day on which the examination is given. Failure to do so may result in an F in the course.

Non-degree Students

Non-degree students may apply 12 semester hours of course work (or up to 18 if taken in one semester) toward a bachelor's degree in engineering from CU Denver.

Grade Point Average (GPA)

A minimum cumulative GPA of 2.0 is required for all courses attempted, for all required courses and for all courses taken within the student's major department.

Hours in Residence

At least 30 semester hours of course work applicable to a bachelor of science degree in engineering must be taken at CU Denver while a declared student in good standing at the College of Engineering, Design and Computing. Students must be enrolled in the college for at least the final two semesters prior to graduation.

NOTE: The electrical engineering program requires at least 40 hours of course work applicable to a bachelor of science degree in engineering, which must be taken at CU Denver while a declared student in good standing at the College of Engineering, Design and Computing.

Mathematics and Physics Requirements

Each major in the College of Engineering, Design and Computing includes specific Math and Physics requirements, which can overlap with CU Denver Core Curriculum requirements in the categories of Mathematics or Biological and Physical Sciences. An overview of these requirements is laid out below:

Mathematics

MATH 1401 - Calculus I

MATH 2411 - Calculus II

MATH 2421 - Calculus III (not required for computer science students)

MATH 3195 - Linear Algebra and Differential Equations

Physics

PHYS 2311 - General Physics I: Calculus-Based

PHYS 2321 - General Physics Laboratory I

PHYS 2331 - General Physics II: Calculus-Based

PHYS 2341 - General Physics Laboratory II (*not required for civil or electrical engineering students*)

Note: Computer science students may take their science course track in biology, chemistry or physics. Please see the computer science curriculum for details.

Notes:

- Please see the individual major pages in the Programs area for a full picture of the specific major requirements
- Please see the Graduation Requirements for a full picture of the Core Curriculum

Faculty Recommendation

The recommendation of the faculty of the department offering the degree and the approval of the faculty of the College of Engineering, Design and Computing is required for graduation.

Major

Complete all requirements associated with your individual major. Please visit the College of Engineering, Design and Computing page to learn more about the college and its programs.

COLLEGE OF LIBERAL ARTS AND SCIENCES GRADUATION REQUIREMENTS

CLAS Residence Requirements

Students must earn a minimum of 30 semester hours with letter grades in residence. In residence is defined as credit hours taken from the College of Liberal Arts and Sciences subject codes, taught by CLAS faculty, while enrolled at CU Denver.

Additional Residence requirements for CLAS majors, minors and certificates may be enforced. Students should consult catalog entries for CLAS program to learn about program specific residence requirements.

College GPA

A minimum cumulative CU GPA of 2.0 is required for graduation from the College of Liberal Arts and Sciences.

The Major

The Bachelor of Arts and Bachelor of Science majors in CLAS require a minimum of 30 semester hours of coursework in the major discipline. Interdisciplinary and individually structured majors may have exceptions.

Minimum GPA and allowable grades: 2.0 minimum major GPA, with all courses earning C- or higher grades.

Upper-Division Requirements

A minimum of 45 semester hours of upper-division coursework must be completed. A minimum of 16 upper division semester hours are required in the major discipline. Interdisciplinary and individually structured majors may have exceptions to the 16 credit minimum in the major discipline.

Major Department

Bachelor of Arts and Bachelor of Science majors require a minimum of 30 semester hours and no more than 56* semester hours in the major subject code (major discipline). A minimum of 15-16 upper-division credits are required in the major subject code. Interdisciplinary and individually structured majors are exceptions.

*Note: Courses applying to CU Denver Core Intellectual Competency requirements (English Composition I & II and Mathematics) are not included in this calculation.

College Minimum Grade

Undergraduate students enrolled in CLAS major or minor programs must earn a minimum grade of C- or higher in all courses that count toward their major or minor (required and elective courses). If the major/minor program wishes to require a higher grade for certain types of courses, like discipline specific capstone experiences/ senior seminars, etc., those courses need to be taken in residence from CLAS faculty/enrolled at CU Denver. If the CLAS major/minor program requires students to take ancillary courses (courses that are not taught by the major/minor program), the program may not impose higher minimum course grades for those ancillary courses. Major/minor faculty advisors reserve the right to make substitutions to in residence requirements when appropriate.

The Minor

Minors require a minimum of 15 semester hours (may be interdisciplinary).

A minimum of 6 upper division semester hours are required (may be interdisciplinary).
Minors require a minimum of 9 semester hours in residence.

Minimum GPA and allowable grades: 2.0 minimum minor GPA, with all courses earning C- or higher grades.

The Certificate

Undergraduate certificates require a minimum of 12 semester hours (may be interdisciplinary). A minimum of 6 upper division semester hours are required.

Because a certificate is a CU certification of a student's specialized knowledge in an advanced subject matter, all courses in a certificate program are expected to be taken in residence at CU Denver. No transfer courses may be applied to CLAS certificate program requirements.

Minimum GPA and allowable grades: 2.0 minimum certificate GPA, with all courses earning C or higher grades.

Internships

A maximum of 12 semester hours of internship credit can apply toward the 120 semester hour graduation requirement.

Prerequisites apply. All students must apply and be approved for internships through the Experiential Learning Center.

Independent Study

A maximum of 12 semester hours of independent study coursework can apply toward the 120 semester hour graduation requirement. This includes Directed Research.

Physical Education

A maximum of 8 semester hours of Physical Education can apply toward the 120 semester hour graduation requirement.

Pass/Fail

Courses used to satisfy major, minor, certificate, CLAS Graduation requirements or courses that require a specific grade for prerequisite purposes cannot be taken on a pass/fail basis.

No more than 6 semester hours pass/fail are allowed in any one semester. A maximum of 16 semester hours taken as pass/fail can apply toward the 120 semester hour graduation requirement.

College Level Examination Program (CLEP)

The use of CLEP subject examinations toward major, minor or certificate requirements is subject to evaluation by the faculty advisor in the department or program, when an exact equivalency has not been determined, and is treated in a similar way as IB, AP or transfer credit. To receive academic credit from CLEP, students must present official test results to the Denver Campus Office of Admissions. A maximum of 30 hours of CLEP credit can apply toward the 120 semester hour graduation requirement.

Second Bachelor's Degree

Students who have been awarded a bachelor's degree (either from the University of Colorado Denver or elsewhere) may be granted a second bachelor's degree provided that (a) all university and college graduation requirements are met; (b) the major for the second bachelor's degree is distinctly different from the major for the first; and (c) the college and major department residence requirements are satisfied. A second degree from the College of Liberal Arts and Sciences will likely require 30 additional semester hours of credit. Students who declare a second degree while completing their first degree will have one academic year (3 semesters) from when they complete their first degree to finish their second degree. If a student does not take classes for more than 3 semesters they must reapply to the university. This rule applies to second degrees only. Students pursuing double majors must complete requirements for both majors at the time of graduation, in order to earn a double major. Exceptions to these guidelines and policies may be petitioned to the appropriate CLAS Associate Dean.

CLAS Graduation Requirements

A single course may fulfill up to two requirements in the following areas: CU Denver Core Curriculum, CLAS Graduation requirements, a major program, a minor program, or a certificate program, with the following exceptions:

1. The course cannot fulfill more than two requirement/elective areas in a student's degree.
2. The course cannot fulfill two CLAS Graduation requirements.
3. The course cannot fulfill CLAS Graduation requirements, if it is already fulfilling CU Denver Core Curriculum

Major and minor programs may impose restrictions around double counting courses. Students should consult catalog entries for CLAS programs to learn about program specific restrictions.

All CLAS students must fulfill the CU Denver General Education Core requirements, in addition to the following:

Communicative Skills (3 semester hours)

One course in communicative skills from the following list, with a minimum grade of C-:

- COMM 2050 - Business and Professional Speaking
 - COMM 1001 - Presentational Speaking
 - ENGL 3001 - Critical Writing
 - ENGL 3084 - Advanced Composition
 - ENGL 3154 - Technical Writing
 - ENGL 3170 - Business Writing
 - ENGL 4175 - Writing in the Sciences
 - ENGL 4190 - Topics in Rhetoric and Writing
 - HIST 2001 - The Uses and Misuses of History
-
- PHIL 2441 - Logic, Language and Scientific Reasoning

Foreign Language proficiency (0-10 semester hours)

Students can fulfill foreign language proficiency through one of the following ways:

- Completion of a second semester or higher college-level language course taught in the designated non-English language with a minimum grade of C- (1.7). American Sign Language is included.
- Satisfactory proficiency testing (i.e. CU Denver Modern Language Placement Testing, BYU FLATS (Foreign Language Achievement Testing Services), CLEP.)
- Completion of a second-year/level II high school non-English language course or higher with a minimum grade of C- (1.7) in the second semester of the second-year or later. No college credit is earned for high school coursework.
- Completion of one year* of AP non-English Language & Culture, AP non-English Literature & Culture, IB non-English Language B or IB Classical Language courses with a minimum of C- (1.7) or higher. No college credit is earned for AP or IB coursework, unless the student earns a sufficient score on the corresponding exam.

*Note: the one year of AP or IB courses must be in the same content area and non-English or Classical language.

- Student has temporary valid non-immigrant visa status, is from a non-English speaking country and meets the CU Denver English Language Proficiency requirements for admission.

- Students whose primary language is not English may provide official documentation and/or satisfactory proficiency testing results to demonstrate their primary language proficiency.

Students who are unsure should consult with their CLAS advisor to determine whether they have met the foreign language proficiency requirement, prior to completing coursework.

Humanities (3 semester hours)

In addition to the CU Denver Core Curriculum requirement in Humanities, students must take a second CLAS course from the CU Denver Core Curriculum Course listing for Humanities or a course from one of the following:

- A course with an ENGL, HIST, HEHM, HUMN, PHIL, or RLST subject code. Students may not use any lower-division level (1000-2000) introductory composition course to fulfill this requirement, i.e. ENGL 1010, ENGL 1020, ENGL 2030.
- A Chinese, French, German or Spanish culture or literature course(may be taught in English or in the associated language). Students may not use a language acquisition course to fulfill this requirement.

Behavioral Sciences (3 semester hours)

In addition to the CU Denver General Education Core Curriculum requirement in Behavioral Sciences, students must take a second CLAS course from the CU Denver General Education Core Curriculum Course listing for Behavioral Sciences or a course from one of the following subject codes: ANTH, COMM, or PSYC

Social Sciences (3 semester hours)

In addition to the CU Denver Core Curriculum requirement in Social Sciences, students must take a second CLAS course from the CU Denver Core Curriculum Course listing for Social Sciences or a course from one of the following subject codes: ECON, ETST, GEOG, PBHL, PSCI, or SOCY.

Biological and Physical Sciences, Mathematics (3-4 semester hours)

In addition to the CU Denver Core Curriculum requirement in Biological and Physical Sciences, students must take a second lab-based CLAS course from the CU Denver Core Curriculum Course listing for Biological and Physical Sciences with a lab or a course from one of the following subject codes (as long as two lab sciences are completed): BIOL, CHEM, GEOL, PHYS, or MATH.

Total Semester Hours of CLAS Graduation Requirements: 15-26

Major

Complete all requirements associated with your individual major.

Guidelines for Transfer Evaluation and Application

- Courses must be exact equivalencies for Communicative Skills, otherwise they may apply to the other categories identified.
 - Always seek evaluation of a transfer course for direct equivalency.
 - Any advisor or member of the Registrar's degree audit team is authorized to apply courses transferring from ENGL or COMM subject codes. ENGL courses must be 3000 or above. Any level COMM course may apply. Registrar looks for "writing", "rhetoric", "composition" or "speaking" and subject code for authorization. All other subject codes or ENGL courses from lower levels must seek a petition to the Associate Dean for exceptions.
 - Anything that does not meet the above criteria must seek a petition to the Associate Dean for exceptions. Petitions must include a full syllabus of the course.
- CLAS Humanities, excludes lower division level ENGL transfer courses that mention the following topics in the title: writing(unless course description details that the course is in criticism or theory), composition, rhetoric, theory(unless literary theory), research(unless related to literature or literary studies), editing, linguistics, grammar, rhetoric(unless course description details that the course is in criticism or theory), workshop. CU Denver English faculty will review and evaluate syllabi when necessary. The area also excludes language acquisition courses
- For other CLAS graduation requirement areas, transfer courses must come from one of the identified subject codes for each area. For any outliers, the course must be taken from a College of (Liberal) Arts and Sciences and must be reviewed by a CLAS Associate Dean.
 - Always seek evaluation of a transfer course for direct equivalency.
 - Any advisor is authorized to make exceptions to transfer courses using a subject code match.
 - Anything that does not meet the above criteria, but does come from a college of (liberal) arts and sciences must seek a petition to the Associate Dean for exceptions. Petitions must include a full syllabus of the course.

SCHOOL OF EDUCATION AND HUMAN DEVELOPMENT GRADUATION REQUIREMENTS

Minimum Grade Requirements

Students must earn a final grade of at least a C (2.0) in major courses and a B- (2.7) or above in designated major courses and Professional Year Residency courses within the major. These courses/requirements must be repeated if the student fails to earn the grade required.

Classroom-Based Field Experiences

Students must complete required classroom-based field experiences.

Other Requirements

Students must complete all program assessments and professional milestones as outlined in the Student Handbook. For teacher education licensure students, this includes passing the appropriate Praxis exam.

Major

Students must complete all requirements associated with their SEHD major.

SCHOOL OF PUBLIC AFFAIRS GRADUATION REQUIREMENTS

School of Public Affairs Residency Requirement

A minimum of 30 credits must be taken through CU Denver. At least 21 of the final 30 credits of the degree must be earned through CU Denver. Please refer to your major program page for any additional major-specific residency requirements.

School of Public Affairs Social Sciences Requirement

SPA requires students to select three courses from the Social Sciences area of the CU Denver Core Curriculum. Please see your advisor for guidance on which courses will be most beneficial for your individual major.

Upper-Division

Students must complete a minimum of **forty-five** upper-division credits.

Foreign Language Requirement

School of Public Affairs students must demonstrate proficiency in a foreign language at the second semester college level prior to graduation. This is accomplished through course work, by examination, or through documented evidence that the student has attained the equivalent proficiency in a language other than English.

Students using high school credit to satisfy the proficiency requirement at CU Denver must have received a grade of C- (1.7) or higher in the final semester of the second-year course. Students using college-level transfer credit or coursework at CU Denver to satisfy the proficiency requirement must receive a grade of C- (1.7) or better in the second-semester college-level course. There is no pass/fail option for any course taken for the foreign language requirement.

Student Placement in Lower-Division Language Courses

<i>High School Background:</i>	<i>Course Number/Level to Take:</i>
No language courses or background	1010
One year of high school	1020
Two years of high school	2110
Three years of high school	2120
Four years of high school	Upper-division courses

NOTE: High school programs vary substantially, and the above levels may not be appropriate for all students. Modern Languages departmental advisors will be happy to speak with any student who feels unsure about his or her placement (303-556-4893).

Prior College Courses

Students wishing to enroll in a lower-division course that does not directly follow their last completed college course in the regular sequence should consult with an appropriate faculty member of the Department of Modern Languages prior to enrollment, 303-556-4893.

Proficiency Testing

Students may also show their level of proficiency by taking a computerized placement/proficiency exam. Call the Department of Modern Languages, 303-556-4893, for scheduled exam times. The languages tested are French, German, and Spanish; students wishing to show proficiency in other languages should consult the Department of Modern Languages for documentation. Students may take an exam only once per semester.

Students who have achieved some proficiency in a foreign language through other means than academic courses should also consult with an appropriate faculty member of the Department of Modern Languages prior to enrollment. This is especially important for native and heritage speakers.

Major Requirement

Complete all requirements associated with your individual major. See the program page for detailed requirements.

The Internship Program

Undergraduate students without experience in the field must complete an internship course for credit under the direction of a faculty sponsor and the Experiential Learning Center. Internships are helpful for career exploration early in a student's academic career or for job experience after developing academic content in the major.

Undergraduate students must have a minimum 2.0 cumulative GPA and a minimum of 15 semester hours completed at CU Denver. BACJ students must have successfully completed CRJU 1000 and CRJU 2041 before registering for the internship, and BAPS students must have successfully completed PUAD 1001 and a 2000 level PUAD course before registering for the internship. Undergraduate students should contact the Experiential Learning Center for details on internship placements, paperwork and requirements. Please see your advisor to request an internship course waiver.

SPECIAL PROGRAMS

Undergraduate Experiences

Associate Vice Chancellor for Student Success: Margaret C. Wood, PhD

Phone: 303-315-2133

Email: margaret.c.wood@ucdenver.edu

Website: ucdenver.edu/ue

The Office of Undergraduate Experiences (UE) strives to enhance student learning by providing access to high quality and innovative programs for all CU Denver undergraduate students, regardless of school or college. Our office is committed to the education of the whole student through the integration of general education, major, co-curriculum, and community. As such, we support programs that enhance student learning, promote academic excellence, and link student and academic affairs units. Our major programs and initiatives include: High Impact Practices (especially First-Year Experiences, Learning Communities, Undergraduate Research and Creative Activities, Internships and Service Learning), Early Alert, and the Core Curriculum.

High Impact Practices (HIPs)

UE is leading the initiative to more fully integrate HIPs into the undergraduate curriculum. HIPs are specialized practices or programs of engaged teaching and active learning. Ten specific HIPs are recognized nationally: First-Year Seminars, Common Intellectual

Experiences, Learning Communities, Writing-Intensive Courses, Collaborative Assignments and Projects, Undergraduate Research, Diversity/Global Learning, Service Learning and Community-Based Learning, Internships, and Capstone Courses and Projects. National research shows that student participation in HIPs increases engagement, retention, and completion, especially in the case of underrepresented groups.

First-Year Experiences (FYE)

FYE Director: Emilie Waggoner

Email: emilie.waggoner@ucdenver.edu

Website: ucdenver.edu/fye

The First-Year Experience (FYE) is a comprehensive approach to ensure that first-year students at CU Denver make a successful transition to college. Our primary goals for FYE participation are active engagement with the CU Denver community, relationships with peers, faculty, and university staff, high levels of academic performance, and strong academic and professional skills. Our **First Year Seminar** program delivers faculty-designed special topics courses that apply toward Core Curriculum credit in the various knowledge areas. Along with rigorous academic content, first-year students participate in academic skill workshops and campus social events. The new **College Success** course (UNIV 1111) focuses more exclusively on academic skills, support, and transition to the university. Students receive hands-on support in developing their academic writing, critical thinking, library research, career preparation, professional communication skills, and personal strengths from faculty, staff, and campus resources across the university.

Why should incoming students participate in a First-Year Experience course?

- higher first semester grades
- student engagement with campus activities
- small class size
- faculty and peer mentoring
- knowledge of campus resources and student support services
- early exploration of career paths and a suitable major
- more likely to stay in college
- Core curriculum credit (for First-Year Seminars)
- active learning pedagogy designed to improve writing and critical thinking skills

Learning Communities (LC)

LC Coordinator: Christy Heaton

Email: christine.heaton@ucdenver.edu

Website: ucdenver.edu/fye

CU Denver Learning Communities (LCs) create intentional and inclusive communities formed around common themes or purposes where students learn together. These communities strive to cultivate critical inquiry and reflection, holistic student growth, and collaborative connections on campus. At CU Denver, learning communities typically include paired courses, or a single course, integrated by an

academic theme, collaborative learning, peer mentoring, and intentional co-curricular activities.

Undergraduate Research and Creative Activities (URCA)

URCA Director: Dr. Lindsey Hamilton

Phone: 303-315-7066

Email: lindsey.hamilton@ucdenver.edu

Undergraduate students can play a significant role in creating new knowledge. Undergraduate research and creative activities foster personalized student learning outside the classroom under the guidance of a faculty mentor. **Undergraduate Research Opportunity Program (UROP)** grants are designed to cover expenses, travel, and stipends for undergraduates who undertake scholarly research and creative activities in collaboration with a faculty member. Students participating in UROP gain experience presenting project results at the **Research and Creative Activities Symposium (RaCAS)** each spring. Students often present their findings in a variety of ways: through oral presentations, published articles, artistic projects, musical compositions, theatrical presentations, multimedia displays, models, and posters.

Internships

Director, Experiential Learning Center: Tony Smith

Phone: 303-315-7258

Email: tony.smith@ucdenver.edu

Website: ucdenver.edu/elc

Experiential learning includes a variety of activities with one common goal-to immerse students in hands-on learning outside the classroom where experience is at the heart of the learning process. The **Experiential Learning Center**, located within the UE division, is committed to working closely with students, faculty, employers, and community partners to provide quality experiential learning opportunities that enhance academic learning, integrate theory and practice, and promote professional development and active citizenship. The ELC offers resources for internships, undergraduate research, and professional development experiences.

Service Learning

Director of Student Life & Campus Community: Tierza Watts

Phone: 303-315-0775

Email: tierza.watts@ucdenver.edu

Students gain a better understanding of community issues, develop practical skills, and make a difference in the world around them when they engage in service activities. From the first-year experience course to senior capstone classes, faculty weave service projects into their courses, giving students a wider view of the world. These service learning experiences vary in length of time, but the impact is always transformational.

Core Curriculum

Core Curriculum Oversight Committee Chair: Antwan Jefferson, Ph.D

Phone: 303-315-2133

Email: ccoc@ucdenver.edu

The general-education Core delivers the knowledge, skills, and dispositions that all students need to be successful in multiple future careers and as informed and engaged citizens of a rapidly changing, diverse, global world. All undergraduates, regardless of major, take courses in each of the nine Core Areas: Composition, Mathematics, Arts, Behavioral Sciences, Biological & Physical Sciences, Humanities, Social Sciences, Cultural Diversity, and International Perspectives. The Core Curriculum is designed to provide each undergraduate student with a high-quality general education based on a liberal arts and sciences foundation, while allowing students flexibility based on their individual backgrounds and specific career goals.

A complete listing of Core courses can be found [here](#).

Early Alert (EA)

EA Contact: Erika Larsen

Phone: 303-315-2133

Email: studentsuccess@ucdenver.edu

CU Denver participates in a campus-wide Early Alert program to identify undergraduate students needing assistance from academic and student service offices. The Early Alert program is designed for faculty to identify students in the 5th-6th week of the semester who need assistance because of academic performance, class participation, and/or behavior issues. Assistance is provided to students identified by faculty through academic advising and through referrals to appropriate CU Denver student service offices.

University Honors and Leadership Program (UHL)

Director: Jennifer Reich, PhD

Program Coordinator: Elisabeth Hawksbee

Office: 1047 Ninth Street Park

Telephone: 303-315-7838

Fax: 303-315-7836

E-mail: UHL@ucdenver.edu

University Honors and Leadership (UHL) is a program of excellence designed for students who have demonstrated superior achievement in academic performance and/or outstanding leadership qualities. UHL is founded on the premise that the integration of rigorous programs of academic excellence and leadership education provides the ideal environment in which to develop the gifts of the next generation of leaders in academia, business, policy-making, and service to communities local, national, and global.

The four-year UHL program is unique in integrating academic honors and leadership education within a highly selective learning community of outstanding students and faculty. The UHL program allows students to complement their major field of study with a traditional honors experience in the academic honors track or with a program of leadership education in the leadership studies track. Students move through the UHL program in cohorts that simultaneously promote community, teamwork, and individual initiative. All UHL courses are multidisciplinary, reflecting the view that the ability to effectively analyze the challenges faced in all sectors of society can be enhanced by the integration of appropriate information drawn from a broad base of perspectives and problem-solving skills. The UHL program complements this philosophy with an emphasis on the development of exceptional oral and written communication skills, projects that steep students in sophisticated research methods, and the opportunity to work in teams to solve practical problems in the community.

The Academic Program

UHL is a multidisciplinary cohort program consisting of 27 semester hours of coursework to be completed over four years. The UHL courses substitute for most of the CU Denver core curriculum requirements.

UHL students have the opportunity to pursue an honors experience through the academic honors track or to focus on leadership education through the leadership studies track. UHL students have a shared first-year experience, taking a core of coursework common to both tracks. The second and third years of the UHL program offer programs designed specifically for the academic honors and leadership studies tracks. UHL students come together for a two-semester capstone research seminar in the fourth year.

Students pursuing the academic honors track have the opportunity to earn a minor in "Multidisciplinary Research Methods." Those completing the leadership studies track have the opportunity to earn a minor in "Leadership Studies."

UHL students who successfully satisfy the course and credit-hour requirements and maintain a GPA of 3.50 or higher in their UHL courses will graduate with "University Honors."

Health Professions Programs on the Denver Campus

College of Liberal Arts and Sciences

Health Careers

Health professions Advising Team

Director/Advisor: Trishia Vasquez

Telephone: 303-315-7541

Advisor: Dr. Gene Brooks

Telephone: 303-315-7538

Undergraduate Pipeline Program Coordinator/Advisor: Ken English

Telephone: 303-315-7542

Program Specialist: Greg White

Telephone: 303-315-7536

Health Career Advisors on the Denver Campus assist in planning a course of study designed to improve a student's chance of success in a health career of their choice by sharing information about career paths in the health professions, work role and environment, related careers and relevant professional development or graduate school programs. We can provide insight into career options, professional opportunities, and extracurricular opportunities to improve your chances of success in the health career of your choice, including: dentistry and dental hygiene, medicine, medical technology, nursing, optometry, osteopathy, pharmacy, physical therapy, physician assistant, podiatry or veterinary medicine. A comprehensive list of health career options and additional information to help you mold your academic experience to your specific goals is available on the health professions programs website at <https://clas.ucdenver.edu/health-professions-programs/>.

Undergraduate Pipeline Programs

BA/BS-MD Program

The BA/BS-MD degree program at the University of Colorado Denver and Anschutz Medical Campus aims to promote the diversity of medical professionals practicing medicine in Colorado and to better serve the health care needs of the State of Colorado by assembling up to 10 outstanding students each year from broadly diverse backgrounds. Applicants must be Colorado residents and have an interest in serving the health care needs of Colorado as primary care physicians. This program is a partnership between the University of Colorado Denver College of Liberal Arts and Sciences and the University of Colorado School of Medicine.

Being accepted to the program allows students to earn a reserved spot at the University of Colorado School of Medicine provided he or she meets specific academic, non-academic, and professional requirements annually.

Admission of individuals will be conducted through a holistic review in a manner which treats each applicant fairly, on the basis of experience, attributes, and metrics. For more information, visit <https://clas.ucdenver.edu/health-professions-programs/babs-md-program-information> or contact Mr. Ken English at kenneth.english@ucdenver.edu.

BA/BS-DDS Program

The BA/BS-DDS degree program at the University of Colorado Denver and CU School of Dental Medicine at Anschutz Medical Campus aims to promote the diversity of dental professionals practicing dentistry in Colorado and to better serve the health care needs of the State of Colorado by assembling and educating up to five students each year from broadly diverse backgrounds. Applicants must be Colorado residents who are interested in serving the health care needs of Colorado as dentists. Acceptance and participation in this program does not guarantee admission to the University of Colorado School of Dental Medicine or any other dental school.

Students who successfully meet all program requirements including a successful interview with the School of Dental Medicine (SDM) Admission Committee, will be eligible for a “reserved” spot in the CU SDM matriculating class.

Admission of individuals will be conducted through a holistic review in a manner which treats each applicant fairly, on the basis of experience, attributes, and metrics.

For more information, visit <https://clas.ucdenver.edu/health-professions-programs/babs-dds-program> or contact Mr. Ken English at kenneth.english@ucdenver.edu.

College of Engineering, Design and Computing

Contact: Engineering Student Services, 303-315-7510

or

Department of Bioengineering, 303-315-7576

Website: engineering.ucdenver.edu

The desirability of obtaining an engineering education prior to undertaking a study of medicine is increasing continually as medicine itself is evolving. A great deal of new equipment is being developed to assist the medical practitioner in the treatment of patients. Bioengineering, computer science, communication system design and analysis, big data analysis, mechanical engineering and probability are highly applicable to medical problems. Contact the Engineering Student Services Center or a specific department for more information.

Inworks

Inworks Founder: Dr. John Bennett

CU Denver Associate Director: Kate Goodman

CU Anschutz Associate Director: Monika Wittig

Program Manager / Contact: Kelsie Faulds / kelsie.faulds@ucdenver.edu

Address: CU Dravo Building 1250 14th street suite 1300

Phone: 303-315-0047

Inworks draws together faculty, staff and students from across the two campuses, as well as entrepreneurs and leaders from industry, government, education and the community, to address problems of importance to human society. Our mission is to impart skills and habits of mind that allow people to collaboratively create impactful solutions to human problems. Inworks seeks to create innovative solutions to some of the world’s most challenging problems, while in the process creating life-long innovators

Inworks offers a wide range of courses, an undergraduate certificate, a graduate certificate and a minor in Human-Centered Design and Innovation. We also offer broad opportunities for learning: speaker programs, workshops and other programs that bring together people from radically different backgrounds to consider issues of importance to

human society. Our modern facilities support collaborative innovation and provide extensive facilities for rapid prototyping. For more information, visit www.inworks.org.

Math Pathways

Offering students the highest quality education is a central goal for CU Denver. The choice of the right type and level of Math is crucial for student success. CU Denver highly recommends that all students take Math in their first or second semester. Students who wait longer find it much harder-with Math, you use it or lose it.

National statistics show that one of the primary reasons that students halt their degree is connected to completing their first college-level Math course with a grade lower than a C. Since we want CU Denver students to finish their degree, and to do so at the lowest cost in time and money, without having to re-take a Math course because of a low grade or withdrawal (D, F or W), we have tools to guide students with initial placement.

All undergraduate students must complete one Core Mathematics course in order to fulfill the university's graduation requirement. There are currently four different mathematics pathways which are available for students: the Quantitative Literacy Pathway, the Business Mathematics Pathway, the STEM Pathway and the Statistics Pathway. Students should consult with their advisor and major graduation requirements to select which math pathway is best for them.

Quantitative Literacy Pathway:

MATH 1010-Mathematics for Liberal Arts is the recommended entry-level math course for all degrees within the Arts and the Humanities, including but not limited to majors in Art History, English, Film & Television, History, Modern Languages, Music, Philosophy, and Visual Arts.

To support student success in this course, a co-requisite class, MATH 1011-Mathematics for the Liberal Arts Workshop, is available for students to take alongside MATH 1010. Students with a High School GPA less than 3.25 and an ACT score less than 19 (equivalent SAT less than 520) are required to register for this 1-credit hour workshop along with their MATH 1010 course.

Business Mathematics Pathway:

MATH 1060-Finite Mathematics is the recommended entry-level math course for students in different business tracks.

STEM Pathway:

MATH 1108 and MATH 1109-Stretch College Algebra; MATH 1110-College Algebra; MATH 1120-College Trigonometry; MATH 1130-Precalculus or MATH 1401-Calculus I are the recommended entry-level math courses for all degrees within the Applied, Natural and Physical Sciences, including but not limited to majors in Architecture, Biology,

Chemistry, Engineering, Mathematics and Physics. Many health careers also require these mathematics courses.

Since student success is one of our goals, students will most likely need to complete a math placement assessment from the “ALEKS Placement, Preparation and Learning” program prior to registering, to determine which level the student is best prepared to enter.

ALEKS PPL guides appropriate mathematics placement and registration, in addition to providing students an opportunity to review material and gain confidence in their math skills. Students may take the ALEKS PPL assessment up to five times, and the highest score is the one that will count as a prerequisite for registering for classes. Using ALEKS PPL, the learning modules that are provided in response to assessment results and advising resources, can lead students to success in the first semester of math and save valuable tuition dollars. Students in this pathway should use these tools to help them succeed.

- The assessment typically takes 60-90 minutes with approximately 30 questions.
- Students should complete ALEKS PPL assessment before orientation and/or registration so they are eligible to register for Math before they leave that day.
- It’s important to be honest while taking the placement assessment.

Students must complete the assessment with the score from the chart below for the corresponding course. The only course that is open to all students in this pathway that does not require assessment is MATH 1108 and MATH 1109-Stretch College Algebra

Course #	Course Name	ALEKS Score Range	Prior coursework requisite (alternative to assessment)
MATH 1108 & MATH 1009	Stretch College Algebra	No ALEKS assessment is required	Students must complete both MATH 1108 and MATH 1109 to earn Core mathematics credit and to fulfill the prerequisite for MATH 1120
MATH 1110	College Algebra	46 or higher	NA
MATH 1120	College Trigonometry	61 or higher	MATH 1109 or MATH 1110 with a C- or higher
MATH 1130	Pre-Calculus	61 or higher	NA
MATH 1401	Calculus I	76 or higher	MATH 1109 or MATH 1110 and MATH 1120 with a C- or higher or MATH 1130 with a C- or higher

If students already have math college credit from AP/IB/CLEP exam or a concurrent enrollment course, CU Denver will recognize that once we receive official test scores and/or transcripts. This previous coursework (AP/IB/CLEP/concurrent enrollment) may shift your eligibility to enroll in a higher level math course, but ALEKS will still help to give

you the most current reflection of your level of preparation and help inform and guide your math selection.

Statistics Pathway:

MATH 2830-Introductory Statistics, is the recommended entry-level math course for all degrees within the Social, Behavioral, Educational and Integrated Sciences, including but not limited to majors in Anthropology, Communication, Education, Ethnic Studies, Geography and Environmental Sciences, International Studies, Political Science, Psychology, Public Administration, Public Health and Sociology.

To support student success in this course, a co-requisite class, MATH 2831-Introductory Statistics Workshop is available for students to take alongside MATH 2830. Students with a High School GPA less than 3.25 and an ACT score less than 19 (equivalent SAT less than 520) are required to register for this 1-credit hour workshop along with their MATH 2830 course.

Questions? Contact MATH.Placement@ucdenver.edu or your academic advising unit.

Reserve Officers Training Corps (ROTC)

The Air Force, Navy/Marines, and Army offer college students the opportunity to receive a commission as an officer through the Reserve Officers Training Corps (ROTC) program. These military training programs occur in conjunction with a student's undergraduate coursework and lead to a commission upon graduation. All ROTC programs offer competitive scholarships, allow for elective academic credit depending on policies of the student's home school or college, and include a commitment to military active or reserve duty.

The University of Colorado Denver actively supports students desiring to participate in one of the ROTC programs and provides registration access to Army ROTC (sponsored by the Metropolitan State University of Denver) and to Navy/Marines or Air Force ROTC (sponsored by the University of Colorado Boulder).

Interested students should contact the specific ROTC program directly for military training, scholarship information, and registration details.

Air Force ROTC

AFROTC Detachment 105
University of CO Boulder
UCB 371
Boulder, CO 80309-0371
Phone: (303) 492-3128; (303) 492-8352

Navy/Marines ROTC

Naval ROTC
University of CO Boulder

UCB 374
Boulder, CO 80309-0374
Phone: (303) 492-2576

Army ROTC
Dept. of Military Science
633 Curtis Street
Modular Building MO-1
Denver, CO 80217
Phone: (303) 352-7419

Transfer students enrolled in Army, Air Force, or Navy/Marines ROTC programs should consult with their school or college regarding the application of ROTC course credit toward graduation requirements.

Programs

Click on any of the following programs for more information:

Undergraduate Areas of Study

3D GRAPHICS AND ANIMATION EMPHASIS, FINE ARTS BFA

Introduction

Please click here to see general Visual Arts information.

The 3D graphics and animation emphasis is a competitive and rigorous four-year curriculum focused on preparing students to work in a wide variety of fields that use animated digital computer graphics (CG), including entertainment, film and television, gaming, medicine, and science.

Program Delivery

- This is an on-campus program.
- The 3D graphics and animation emphasis courses (DACD 2810-4820 below) are billed at a different rate than the standard course tuition due to the state-of-the-art technology used in the classroom. For more information regarding this rate, contact the College of Arts & Media at CAM@ucdenver.edu.

Declaring This Major

- Click here to go to information about declaring a major.
- Students who are applying for entrance into the 3D graphics and animation emphasis must submit a portfolio, as described below. The 3D graphics and animation emphasis accepts applications only once per year. Students who meet the requirements and are accepted will be able to register for advanced 3D animation courses.

ELIGIBILITY

Students are eligible to apply to the 3D graphics and animation emphasis after completing the following courses with a grade of C (2.0) or better each and a minimum overall animation course GPA of 2.8:

- FINE 1810 - PREDAC: 3D Foundations
- FINE 1820 - PREDAC: Animation Foundations

Please note that FINE 1810 and FINE 1820 are billed at regular tuition rates.

PORTFOLIO APPLICATION REQUIREMENTS

The student's application must be submitted electronically no later than the **last Friday of May**. Detailed instructions are provided during the spring semester in either FINE 1810 or FINE 1820. Students can also contact the Director of the Digital Animation Center (Associate Professor Dane Webster at dane.webster@ucdenver.edu) if they have additional questions. Selection for entrance into the 3D graphics and animation emphasis is a competitive process (by faculty review) that requires:

- Submission by the candidate of a "Portfolio Demo Reel". The reel must include original works from FINE 1810 3D Foundations and FINE 1820 Animation Foundations as well as representative works created in other visual arts courses completed during the first year of the program. The Portfolio Demo Reel must be turned in as a .mov (Quicktime, H.264, 1280x720 minimum frame size, 16:9 aspect ratio). Still work should be a component of the reel and should be on screen for at least 3 seconds but no more than 10 seconds. Name and contact information should appear at the beginning and end of the reel. The reel should not be greater in length than 1.5 minutes.
- A "breakdown sheet": the run time at which the work occurs, and which describes what work is included on the submission reel, and, if collaborative in nature, what aspect of the work shown was created by the applicant. Turn in a PDF file only please.
- A one page double-spaced written statement regarding the applicant's aspirations as a productive and contributing member of the 3D graphics and animation cohort and the CG community as a whole. Turn in a PDF file only please.

Students should show only their best work and show the very best work first. Students should be selective since reels may only be 3.5 minutes long. Music is not recommended for professional reels, but if music is used, students should choose wisely.

For more portfolio information, please see the College of Arts & Media 3D graphics and animation website and the Digital Animation Center website, or contact the College of Arts & Media at CAM@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 27 semester hours of visual arts credits (at any level) must be taken at CU Denver.
4. At least 24 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Pre-Portfolio courses:

- FINE 1810 - PREDAC: 3D Foundations
- FINE 1820 - PREDAC: Animation Foundations

Take **all** of the following 3D Graphics and Animation Emphasis courses (available only to students accepted to emphasis via portfolio review):

- DACD 2810 - DAC: Surface Modeling
- DACD 2820 - DAC: Texturing and Shading
- DACD 2830 - DAC: Lighting and Rendering
- DACD 2850 - DAC: Character Creation
- DACD 3810 - DAC: Environment Production
- DACD 3820 - Character Rigging & Animation
- DACD 3846 - DAC: Preproduction for LookDev
- DACD 3850 - DAC: Dynamic Simulation

- **Either** DACD 3830 - Advanced Character Animation **or**

- DACD 3831 - Character FX
- DACD 4810 - DAC: Production I
- DACD 4820 - DAC: Production II

Take **all** of the following courses:

- ENGL 2250 - Introduction to Film or FINE 1002 - International Perspectives through Animation
- FINE 1100 - Drawing I
- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2155 - Introduction to Digital Photography
- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II
- FINE 4990 - Contemporary Art: 1960 to Present

Take three semester hours of Pre-20th Century Art History elective.

Take **twelve** semester hours of Visual Arts electives. These may include studio, lecture, internship or art history courses. At least **one** of these Visual Arts courses must be chosen from the following list:

- FINE 2822 - DAC: Digital Cinematography
- FINE 3814 - Digital 3D Methods: Motion Graphics for Animators
- FINE 3815 - Storyboarding for Cinema and Game Previsualization
- FINE 3845 - DAC: Preproduction for Story
- FINE 4825 - Architectural Visualization

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

ACCOUNTING MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

Accounting courses are offered in several fields of professional accountancy at the intermediate, advanced and graduate levels. They provide preparation for practice in one or more of the following fields:

- Public Accounting: auditing, consulting, and tax compliance and planning
- Accounting in Industry: all industries, including energy, financial, manufacturing, retail
- Accounting in Government and Nonprofits
- Academics: teaching and research in accounting areas of financial reporting, managerial accounting, auditing, accounting information systems, and taxation

In all of these fields a thorough knowledge of the social, legal, economic and political environment is needed. A high degree of analytical ability and communication skill is indispensable.

Courses in English composition, speech, ethics and logic are desirable. Courses in statistics and information systems, beyond the required business core courses, are highly recommended.

Program Delivery

- This is an on-campus program.
- Full online program also available starting Fall 2020.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. A grade of C or higher must be earned in all courses that are used as prerequisites. These are noted with an asterisk.

Take **all** of the following required courses:

- ACCT 3220 - Intermediate Financial Accounting I *
- ACCT 3230 - Intermediate Financial Accounting II
- ACCT 3320 - Intermediate Cost Accounting
- ACCT 4054 - Accounting Information Systems *
- (Replaces ISMG 3000 in Business Core)
- ACCT 4410 - Fundamentals of Federal Income Tax
- ACCT 4620 - Auditing Theory

Take **one** of the following courses:

- ACCT 4240 - Advanced Financial Accounting
- ACCT 4370 - International Accounting
- ACCT 4420 - Taxation of Business Entities
- ACCT 4520 - Oil and Gas Accounting
- ACCT 4800 - Accounting for Government and Nonprofit Organizations
- Or any other 4000-level ACCT course

Notes

- Students should note that all finance, risk and accounting courses are not offered every semester. Students should take the ACCT 2200 and ACCT 2220 courses as soon as possible to avoid future problems in their schedules, since these are prerequisites for all courses in the specialization.
- Students also have the option to complete an Accounting major with a specialization in Information Systems. [Click here to view this option.](#)
- Students also have the opportunity to continue their education with an MS in Accounting. The Accounting 4+1 program allows students to potentially complete the BS and MS degrees in as little as five years through substituting two graduate courses for two undergraduate courses. The graduate courses count towards both the BS and MS degrees.
- If you are considering this 4+1 program, contact your advisor immediately so that you can appropriately plan your coursework. Email: undergrad.advising@ucdenver.edu
- If you are considering pursuing a CPA, talk to the accounting department about the best courses to take. Email: accounting.cpa@ucdenver.edu

ACCOUNTING MAJOR - BS IN BUSINESS ADMINISTRATION WITH SPECIALIZATION IN INFORMATION SYSTEMS

Introduction

Please click [here](#) to see Business School information.

Accounting courses are offered in several fields of professional accountancy at the intermediate, advanced and graduate levels. They provide preparation for practice in one or more of the following fields:

- Public Accounting: auditing, consulting, and tax compliance and planning
- Accounting in Industry: all industries, including energy, financial, manufacturing, retail
- Accounting in Government and Nonprofits
- Academics: teaching and research in accounting areas of financial reporting, managerial accounting, auditing, accounting information systems, and taxation

In all of these fields a thorough knowledge of the social, legal, economic and political environment is needed. A high degree of analytical ability and communication skill is indispensable.

Courses in English composition, speech, ethics and logic are desirable. Courses in statistics and information systems, beyond the required business core courses, are highly recommended.

Within the Accounting curriculum, students can specialize in Information Systems to compliment their individual interest.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Requirements
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A grade of C must be earned in all accounting courses that are used as prerequisites. These are noted with an asterisk.

Take **all** of the following courses:

- ACCT 3220 - Intermediate Financial Accounting I *
- ACCT 3230 - Intermediate Financial Accounting II
- ACCT 3320 - Intermediate Cost Accounting
- ACCT 4054 - Accounting Information Systems

- (Replaces ISMG 3000 in Business Core)
- ACCT 4410 - Fundamentals of Federal Income Tax
- ACCT 4620 - Auditing Theory
- ISMG 4780 - Accounting and Information Systems Processes and Controls
- Choose **two** upper division ISMG electives

Notes

- Students should note that all finance, risk, and accounting courses are not offered every semester. Students should take the ACCT 2200 and ACCT 2220 courses as soon as possible to avoid future problems in their schedules, since these are prerequisites for all courses in the major or specialization.
- Students also have the opportunity to continue their education with an MS in Accounting. The Accounting 4+1 program allows students to potentially complete the BS and MS degrees in as little as five years through substituting two graduate courses for two undergraduate courses. The graduate courses count towards both the BS and MS degrees.
- If you are considering this 4+1 program, contact your advisor immediately so that you can appropriately plan your coursework. Email: undergrad.advising@ucdenver.edu

- If you are pursuing a CPA, talk to the accounting department about the best courses to take. Email: accounting.cpa@ucdenver.edu

ANTHROPOLOGY BA

Introduction

Please [click here](#) to see Anthropology department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 40 ANTH credit hours.
2. Students must complete a minimum of 24 upper division (3000-level and above) ANTH credit hours. Most upper division courses have lower division prerequisites.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded

attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

4. Students must complete a minimum of 21 ANTH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Anthropology majors are advised to take MATH 2830 for their CU Denver Core Curriculum Mathematics requirement.

Take **all** of the following required courses:

- ANTH 1302 - Introduction to Archaeology
- ANTH 1303 - Introduction to Biological Anthropology
- ANTH 2102 - Culture and the Human Experience

Take **three** of the following courses:

- ANTH 3101 - Foundations of Cultural Anthropology
- ANTH 3121 - Language, Culture, and Communication
- ANTH 3301 - World Prehistory
- ANTH 3512 - Human Evolution

Take **20 elective credit hours** from the Anthropology Department.

ARCHITECTURE BS

Introduction

Please click [here](#) to see Architecture department information.

The College of Architecture and Planning offers a Bachelor of Science in Architecture degree exclusively on the downtown Denver campus. The city of Denver provides a rich environment to explore a diverse historic and cultural world that includes multiple approaches to solving urban and building problems. The degree is a "pre-professional" degree, which can provide graduating students advanced standing and a reduction in course requirements for the accredited Master of Architecture degree. This degree provides an education in the sciences and humanities in design theory of the built world and its practice. Our graduates will have significant grounding in the science of building and the practice of architecture in a rapidly evolving profession. Our educational goal is to engender active and creative making of architecture along with critical thinking skills. Our graduates will have employment options in entry-level architectural practices or related fields of urban design, historic preservation,

design-build, construction, and even urban planning; or the opportunity to enter any accredited graduate program in the country.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Architecture and Planning Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must earn at least a C- grade in required architecture and math courses. Architecture and math courses must be repeated if the student earns less than a C- grade.

Take **all** of the following required Design Studies courses:

- ARCH 2110 - Design Studio I
- ARCH 3110 - Design Studio II
- ARCH 3120 - Design Studio III
- ARCH 4110 - Design Studio IV
- ARCH 4120 - Design Studio V

Take **all** of the following Cultural Studies courses:

- ARCH 1110 - Introduction to Architecture
- ARCH 2230 - Architectural History I
- ARCH 3230 - Architectural History II

Take **all** of the following Technical Studies courses:

- ARCH 3130 - Construction Practices: Material and Structural Systems
- ARCH 3430 - Construction Practices: Building Envelope
- ARCH 3330 - Building Systems I
- ARCH 4440 - Building Systems II
- ARCH 3340 - Theory of Structures I
- ARCH 4340 - Theory of Structures II

Take **one** of the following Math courses/sets:

- MATH 1110 - College Algebra **and**
- MATH 1120 - College Trigonometry

OR

- MATH 1108 - Stretch College Algebra-Part 1 **and**
- MATH 1109 - Stretch College Algebra-Part 2 **and**
- MATH 1120 - College Trigonometry

OR one of the following:

- MATH 1130 - Precalculus Mathematics
- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III

Note: also applies to the Core Math requirement

Take **both** of the following Physics courses:

- PHYS 2010 - College Physics I
- PHYS 2321 - General Physics Lab I

Note: also applies to the Core Biological and Physical Sciences requirement

Take **eighteen** hours of Architecture electives.

Additional General elective hours may be needed to reach the required 120 hours for the BS Architecture degree.

Note: Required math and physics courses may apply toward General electives if not already applied toward Core Math and Biological and Physical Sciences requirements.

ART HISTORY EMPHASIS, FINE ARTS BA

Introduction

Please click [here](#) to see general Visual Arts information.

The art history emphasis familiarizes students with a range of developments in the history of art while developing skills in critical thinking, writing, research and the study of visual culture. After a two-semester introduction to the foundations of art and architectural history, students choose from an array of advanced courses on specific topics. This curriculum concludes with capstone seminars on the methods of art historical scholarship as well as a thesis project.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or

lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 21 semester hours of all visual arts credits (at any level) must be taken at CU Denver.
4. At least 18 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Studio Arts courses:

- FINE ____ 2-dimensional Studio Arts course (3 semester hours)
- FINE ____ 3-dimensional Studio Arts course (3 semester hours)
- FINE ____ Studio Arts Elective (3 semester hours)

Take **one** of the following English courses:

- ENGL 2070 - Grammar, Rhetoric and Style
- ENGL 3084 - Multimedia Composition
- ENGL 4180 - Argumentation and Logic
- ENGL 4280 - Proposal and Grant Writing

Take **all** of the following Art History courses (entry level):

- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II

Take a minimum of **three** semester hours of Pre-20th Century Art History elective.

Take an additional **eighteen** semester hours of upper-division (3000/4000-level) Art History electives (six courses).

Take **all** of the following Art History Capstone courses:

- FINE 4790 - Methods in Art History
- FINE 4951 - Bachelor of Art Thesis

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved studio arts courses and art history electives, as well as more information about this emphasis.

ART PRACTICES EMPHASIS, FINE ARTS BFA

Introduction

Please click [here](#) to see general Visual Arts information.

The Art Practices emphasis provides students with a comprehensive education in visual art practices, which includes creative influences, ideas, materials, tools and skills, as well as theory and art history, with an emphasis on current trends in contemporary art. Art Practices is designed for students whose creative ideas move across media and who are looking for a more comprehensive critical approach to developing their art practice. Art Practices provides students with focused professional skills in two self-selected areas of studio art, whereby the student can develop a fully formed and thoughtful body of work with conceptual impact.

The emphasis is a focused degree program that provides students with greater knowledge and tools to make them competitive in the professional world of contemporary art. The work of contemporary artists is a dynamic combination of materials, methods, concepts, and subjects that challenge traditional assumptions and definitions. Contemporary artists give voice to the varied and changing landscapes of identity, values, and beliefs in the increasingly global culture of our diverse and technologically advancing world. Artists today explore ideas, concepts, questions, and practices that examine the past, describe the present, and imagine the future. This program is designed to address the needs of students looking to become successful emerging artists with the skills to become active individuals in the art world through multiple outlets through exhibitions and sales, arts education, curation, critical art writing, art therapy, fabrication, public art, entrepreneurship, art consulting, costume and set design, fashion/accessory and textile design, performance art, portraiture, various facets of business employment and much more!

Students may choose from two areas for their primary concentration: Painting and Drawing OR Transmedia Sculpture. They then select a secondary concentration--different from their primary concentration from the following: Painting and Drawing, Illustration, Transmedia Sculpture or Photography. Students take 21 semester hours in their primary concentration and 15 semester hours in their secondary concentration.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum letter grade is required for each course in the major for the course to satisfy the degree requirement. All grades apply to the major and are averaged to generate the major-specific GPA.
 - A minimum grade of C (2.0) is required to satisfy degree requirements for any major course taken at CU Denver.
 - A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement, but is calculated in the major GPA.
 - A grade of P is acceptable for courses in which the only grade available is Pass or Fail
2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 27 semester hours of visual arts credits (at any level) must be taken at CU Denver.
4. At least 24 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Arts Foundation courses:

- FINE 1100 - Drawing I
- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2155 - Introduction to Digital Photography
- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II

Note: Students should choose a main and secondary concentration before continuing with upper-division (3000/4000-level) studio courses. Any 1000/2000-level course may be taken prior to making concentration selections.

Take **all** of the Main Studio Concentration courses from ONE of the following categories (Transmedia Sculpture OR Painting and Drawing):

Transmedia Sculpture

- FINE 2500 - Bronze Casting
- FINE 2510 - Wood and Metal Sculpture
- FINE 3510 - Mold Design & Casting
- FINE 3555 - Concepts in Sculpture
- FINE 4505 - Sculptural Drawing
- FINE 4215 - Interdisciplinary Studio
- FINE 4515 - Advanced Art Practices

Painting and Drawing

- FINE 2030 - Life Drawing
- FINE 2200 - Painting I
- FINE 3030 - The Media of Drawing
- FINE 3200 - Intermediate Painting and Drawing
- FINE 3556 - Concepts in Painting and Drawing
- FINE 4215 - Interdisciplinary Studio
- FINE 4515 - Advanced Art Practices

Secondary Studio Concentrations

Take **all** of the Secondary Studio Concentration courses from ONE of the following categories (Transmedia Sculpture or Painting and Drawing or Illustration or Photography). Note that the Secondary Concentration must be different from the Main Concentration.

Note: Students wishing to select Illustration as a secondary concentration area must participate in the Illustration portfolio Day. For more information, please [click here](#).

Transmedia Sculpture

- FINE 2500 - Bronze Casting
- FINE 2510 - Wood and Metal Sculpture
- FINE 3510 - Mold Design & Casting
- FINE 3555 - Concepts in Sculpture
- FINE 4505 - Sculptural Drawing

Painting and Drawing

- FINE 2030 - Life Drawing
- FINE 2200 - Painting I
- FINE 3030 - The Media of Drawing
- FINE 3200 - Intermediate Painting and Drawing
- FINE 3556 - Concepts in Painting and Drawing

Illustration

- FINE 2405 - Introduction to Digital Design
- FINE 3010 - Illustration I: Image Making
- FINE 3014 - The Graphic Novel Workshop
- FINE 3300 - Painting, Drawing and the Printed Image
- FINE 3410 - Illustration II: Digital Media

Photography

- FINE 1150 - Introduction to Darkroom Photography
- FINE 3161 - The Silver Fine Print
- FINE 3162 - The Digital Fine Print
- FINE 3171 - Concepts and Processes in Photography
- FINE 4195 - Advanced Photography I

Take **all** of the following Visual Arts courses:

- FINE 3405 - Introduction to Digital Video
- FINE 3500 - Installation Art
- FINE 4990 - Contemporary Art: 1960 to Present

Take **three semester hours** of Pre-20th Century Art History elective.

Take **three semester hours** of upper-division Art History elective.

Take **nine semester hours** of Visual Arts electives. These may include studio, lecture, internship or art history courses.

Note that the FINE 3556 Concepts in Painting and Drawing course and the FINE 3555 Concepts in Sculpture course encompass rotating course topics and can be take up to four times each, with a different topic. These topics are as follows: Concepts in Painting and Drawing-Abstraction, Narrative and Pop Culture, Figuration, and Spatial

Approaches; Concepts in Sculpture-Modeling for Manufacture, Social Engagements, Iron Casting, Public and Environmental Art.

Take the following Capstone course:

- FINE 4950 - Studio BFA Thesis

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

BIOCHEMISTRY BS

Introduction

Please click [here](#) to see Chemistry department information.

Biochemistry is the chemistry of life - the molecules, reactions, and energy transformations that underlie structure and function in all living organisms. The study of biochemistry combines knowledge from chemistry, biology, physics, and mathematics (and sometimes other disciplines) to understand how life works at the molecular level. This integrated scientific knowledge will be essential for understanding the future of human health, sustainable energy, and the environment.

The BS Biochemistry program at CU Denver strongly emphasizes connections between basic science and human health. Required coursework covers much of the foundational knowledge and skills for graduate and health professions entrance exams. Several courses explore connections between cutting-edge biochemical research and different diseases. Students are encouraged to take advantage of undergraduate research opportunities in biochemistry and related fields either at CU-Denver or on the nearby Anschutz Medical campus. Graduates learn skills in critical thinking, problem solving, and scientific communication for careers in the health and natural sciences.

A BS in Biochemistry stands out as a premiere accomplishment in applications for professional degree programs, including pharmacy, medicine, nursing, dentistry, medical technology, and many others.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Qualified majors are strongly urged to participate in directed research and departmental honors programs. We also strongly encourage Biochemistry majors to participate in the Chemistry department by serving as learning assistants or teaching assistants.

The chemistry department offers two options for a chemistry degree. A BS Chemistry and a BS Biochemistry. Students may also double major in Biochemistry and Chemistry. Students interested in the Biochemistry major should consult regularly with the Biochemistry Majors Advisor, Dr. Vanessa Fishback.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 80 credit hours, including a minimum of 45 CHEM credit hours and a minimum of 35 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 upper-division (3000-level and above) CHEM credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 14 credits hours with CU Denver faculty including CHEM 4518 or CHEM 4538 or CHEM 4548.

Program Restrictions, Allowances and Recommendations

1. A student who has declared a Biochemistry major at CU Denver may not take additional chemistry courses outside of the department for the purpose of applying those credits toward meeting the requirements of the major without prior written approval of the undergraduate Biochemistry advisor. No more than 3 additional hours of such pre-approved transfer credits will be allowed.
2. All courses applied to the Biochemistry major need to be taken within ten years of the graduation date.
3. Intro Experimental Physics labs I and II (PHYS 2321 and PHYS 2341) are specifically designed for students in non-Physics majors and can be paired with either College Physics (PHYS 2010 and PHYS 2020) or General Physics (PHYS 2311 and PHYS 2331) lectures. Students pursuing a second major in Physics should complete General Physics lectures (PHYS 2311 and PHYS 2331) and Applied Physics Labs (PHYS 2351 and PHYS 2361).

Take **all** of the following required courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**
- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

- CHEM 3411 - Organic Chemistry I **or**
- CHEM 3481 - Honors Organic Chemistry I

- CHEM 3418 - Organic Chemistry Lab I **or**
- CHEM 3488 - Honors Organic Chemistry Laboratory I

- CHEM 3421 - Organic Chemistry II **or**
- CHEM 3491 - Honors Organic Chemistry II

- CHEM 3498 - Honors Organic Chemistry Laboratory II
- CHEM 4810 - General Biochemistry I **or**
- CHEM 5810 - Graduate Biochemistry I
- CHEM 4828 - Biochemistry Lab
- CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy **or**
- CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4548 - Physical Biochemistry Laboratory **or**
- CHEM 4538 - Physical Chemistry Laboratory: Molecular Structure **or**
- CHEM 4518 - Physical Chemistry Laboratory: Reaction Analysis

Take **three** of the following advanced biochemistry electives:

- BIOL 4125 - Molecular Biology Laboratory
- CHEM 4815 - Structural Biology of Neurodegenerative Diseases
- CHEM 4820 - General Biochemistry II
- CHEM 4825 - Biochemistry of Metabolic Disease
- CHEM 4835 - Biochemistry of Gene Regulation and Cancer
- CHEM 4845 - Molecular Modeling and Drug Design
- CHEM 4880 - Directed Research (For faculty-mentored research projects related to biochemistry. Major credit for this course requires prior approval from the Biochemistry majors advisor and the research mentor. Major credits do not count toward departmental Honors requirements.)
- CHEM 4600/ CHEM 5600 - Graduate Topics in Chemistry (certain topics, with permission from the Biochemistry Advisor)
- CHEM 5830 - Graduate Biochemistry II

Take **two** molecular science electives not previously selected as a required course or advanced biochemistry elective course:

- CHEM 4121 - Instrumental Analysis
- CHEM 4421/ CHEM 5421 - Cannabis Chemistry
- CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy

- CHEM 4700 - Environmental Chemistry
- CHEM 4880 - Directed Research
- BIOL 3124 - Introduction to Molecular Biology
- BIOL 3225 - Human Physiology
- BIOL 3611 - General Cell Biology
- BIOL 3654 - General Microbiology
- BIOL 3763 - Biostatistics
- BIOL 3804 - Developmental Biology
- BIOL 3832 - General Genetics
- BIOL 4024 - Introduction to Biotechnology
- BIOL 4064 - Cell Biology of Disease
- BIOL 4165 - Neurobiology
- BIOL 4550 - Cell Signaling
- MATH 3511 - Mathematics of Chemistry
- PHYS 3452 - Biophysics of the Cell NM
- PSYC 3832 - Neural Basis of Learning

Take **all** of the following Ancillary courses:

- BIOL 2051 - General Biology I **or**
- BIOL 2095 - Honors General Biology I

- BIOL 2071 - General Biology Laboratory I **or**
- BIOL 2096 - Honors General Biology Lab I

- BIOL 2061 - General Biology II **or**
- BIOL 2097 - Honors General Biology II

- BIOL 2081 - General Biology Laboratory II **or**
- BIOL 2098 - Honors General Biology Lab II

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

Take **one** of the following sequences, referring to note 3 under Program Restrictions, Allowances and Recommendations for alternative Physics lab information:

Sequence A

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II
- MATH 3511 - Mathematics of Chemistry **or**
- CHEM 4500 - Foundations of Physical Chemistry

-OR-

Sequence B

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II
- CHEM 4500 - Foundations of Physical Chemistry

BIOENGINEERING BS

Introduction

Please click [here](#) to see Bioengineering department information.

The undergraduate program at CU Denver is a highly rigorous program instilling competencies in biomedical science, engineering, and mathematics and biomedical design, while emphasizing the professional competencies of leadership, communication, presentation and critical problem solving. Our mission is to improve human health through the application of engineering principles, ideas, methods and inventions to solve important clinical problems. Bioengineering is a highly interdisciplinary field that brings together: (1) biological, chemical and physical sciences; (2) engineering and mathematics; and (3) clinical medicine. The undergraduate bioengineering program provides training at both the Denver campus and the Anschutz Medical Campus.

Graduates of the undergraduate program in bioengineering are expected to attain at least one of the following objectives within a few years after graduation:

1. Be employed as a professional in the biomedical engineering field or related industry using knowledge and skills obtained in the program.

2. Be progressing toward an advanced degree in: a) health sciences or medical school; b) graduate school; c) business or law school, or other advanced professional programs.

Program Educational Objectives (PEOs) can be found on the department's website.

Program Delivery

- This is an on-campus program.
- Upper-division major courses will be taught at the Anschutz Medical Campus.

Declaring This Major

- Click here to go to information about declaring a major.
- Students can be admitted to the bioengineering major by meeting the incoming freshmen, transfer and Intra-University Transfer (IUT) Admissions guidelines.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- Click here for information about Academic Policies

Program Requirements

The bioengineering major requirements include three different types of courses: pre-major courses, upper-division bioengineering courses and track electives.

Downtown Courses; Students must complete all 58 credits of math, biology, chemistry, physics and lower-division bioengineering requirements with a C- or higher prior to transitioning to the Anschutz Medical Campus. Credit for some of these courses may be achieved through high school Advanced Placement (AP) course work and exams, International Baccalaureate (IB) coursework and exams, as well as transfer credit.

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III

- MATH 3195 - Linear Algebra and Differential Equations

Take **all** of the following Biology courses:

- BIOL 2051 - General Biology I
- BIOL 2071 - General Biology Laboratory I
- BIOL 2061 - General Biology II
- BIOL 2081 - General Biology Laboratory II

Take **all** of the following Chemistry courses:

- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II
- CHEM 3411 - Organic Chemistry I
- CHEM 3418 - Organic Chemistry Lab I

Take **all** of the following Physics courses:

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II

Take **all** of the following courses:

- ENGR 1200 - Fundamentals of Engineering Design Innovation
- BIOE 1020 - Bioengineering Design and Prototyping II
- BIOE 2010 - Introduction to Programming for Bioengineers
- BIOE 2020 - Introduction to Computational Methods for Bioengineers

Upper-division Bioengineering Courses

All students admitted into the Bioengineering major must take the following upper-division major bioengineering courses. Upper-division major classes will be taught at the Anschutz Medical Campus. These classes build upon the downtown coursework and provide the next level of instruction in bioengineering. Student can enroll in these courses once they have completed the downtown courses with a C- or higher and are in good academic standing.

- BIOE 3010 - Bioinstrumentation
- BIOE 3020 - Introduction to Biomechanical Analysis
- BIOE 3030 - Introduction to Biomaterials
- BIOE 3040 - Physiology for Bioengineering
- BIOE 3050 - Cell & Molecular Bioengineering
- BIOE 3051 - Cell & Molecular Bioengineering Lab
- BIOE 3060 - Biostatistics, Measurement and Analysis
- BIOE 3070 - Bioengineering Lab I
- BIOE 3071 - Bioengineering Lab II
- BIOE 3090 - Introduction to BioDesign
- BIOE 4035 - Undergraduate BioDesign II
- BIOE 4045 - BioDesign III

Bioengineering Technical Electives Guidelines

Bioengineering students are required to take 12 credit hours of technical electives to complete their undergraduate degree. Technical electives are upper-division (3000 or 4000-level) or graduate (5000+) bioengineering courses taken after matriculation to the pre-bioengineering major. Students are responsible for meeting all prerequisites for technical electives.

Students may select any combination of approved BIOE courses for technical electives or by petition, which requires approval through an online form. Petitions are required for selecting a BIOE course not currently approved or to take more than three credit hours of nonbioengineering courses.

Option I - Approved Technical Electives

Students may select any combination of approved Bioengineering (BIOE) courses and up to three credit hours of non-bioengineering courses.

BIOE 4XXX-5XXX

BIOE 4XXX-5XXX

BIOE 4XXX-5XXX

BIOE 4XXX-5XXX or approved non BIOE 4XXX-5XXX

BS/MS students are required to take BIOE 5010 and BIOE 5020 as 6 of the 12 credits that apply as Technical Electives and MS coursework.

BIOE 5010

BIOE 5020

BIOE 4XXX-5XXX**BIOE 4XXX-5XXX** or approved non-BIOE 4XXX-5XXX**Option II - Petition Courses**

Students may petition to have up to 6 credit hours of non-bioengineering courses (upperdivision) for technical electives. (CHEM, MATH, BIOL, MECH, ELEC).

BIOE 4XXX-5XXX**BIOE 4XXX-5XXX****Non-BIOE 4XXX-5XXX****Non-BIOE 4XXX-5XXX (must petition a second non-BIOE course)**

Students may also petition to have a non-bioengineering course added to the approved list by submitting a current syllabus as part of the petition process.

Approved Bioengineering Technical Electives

BIOE 4053/5053: Optics and Microscopy in Biomedical Research (Spring)

BIOE 4063/5063: 3D Modeling for Bioengineers (Fall)

BIOE 4064/5064: Advanced Matlab for Bioengineers and Life Scientists (Fall)

BIOE 4065/5065: Introduction to iOS Applications (Fall)

BIOE 4066/5066: Advanced Topics in iOS Applications (Spring)

BIOE 4068/5068: Introduction to Medical Imaging

BIOE 4069/5069: Advanced BioMechanics (Fall)

BIOE 4069/5069: Advanced Biomechanics for Undergraduates/graduates (Fall)

BIOE 4073/5073: Neural Interfaces and Bionic Limbs

BIOE 4083/5083: Polymers Biomedical Applications (Spring)

Special Topics

BIOE 4420/5420: Regulatory Affairs (Fall)

BIOE 4420/5420: Intro to Design, Disability and Aging (Spring)

BIOE 4420/5420: Rehabilitation and Assistive Technology (Fall)

BIOE 4420/5420: Medical Device Life Cycle (Spring)

BIOE 4420/5420: Bioengineering Design Hack for Global Health (Winterim)

*Special Topics offerings can change each semester. Review Course offerings on UCD Access for current offerings. All BIOE 4420/5420 courses can apply towards Technical Electives.

Internship/Independent Study/Research

BIOE 3939: Undergraduate Internship

BIOE 4849: Independent Study*

BIOE 4929: Undergraduate Research Project*

* Student can utilize no more than 3 credits hours of combined research and independent study towards technical electives.

Graduate

BIOE 5010 Cell & Molecular Biology for Bioengineers**(Fall)

BIOE 5011: Systems Physiology for Bioengineers (Spring)

BIOE 5020: Analytic Methods for Engineering Analysis** (Fall)

BIOE 5021: Numerical Methods of Engineering Analysis (Spring)

BIOE 5420: Stem Cell and Regenerative Medicine (Fall)

BIOE 5420: Graduate Biodesign (Fall)

**Required for BS/MS students (5010/5020)

Approved Non-Bioengineering Technical Electives

BIOL 3832: General Genetics

BIOL 3244: Human Anatomy

BIOL 3611: General Cell Biology

BIOL 3763: Biostatistics

BIOL 4644: Advanced Human Anatomy lab

BIOL 5024: Introduction to Biotechnology

CHEM 3810: Biochemistry

CHEM 3421: Organic Chemistry II

CHEM 4810: General Biochemistry I

CSCI 3412: Algorithms

CSCI 4287: Embedded Systems Programming

ELEC 3030: Electrical Circuits and Systems

MATH 4650: Numerical Analysis I

MECH 4020: Biomechanics

MECH 4025: Advanced Biomechanics

MECH 4175: Finite Element Analysis in Machine Design

BIOLOGY BS

Introduction

Please click [here](#) to see Integrative Biology department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a total of 67-69 credit hours, including a minimum of 36 BIOL credit hours and 31-33 credit hours in ancillary coursework.
2. Students must complete a minimum of 18 upper division (3000- level and above) BIOL credit hours.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 upper division (3000-level and above) BIOL credit hours with CU Denver faculty and at least 3 credits must be at 4000-level.

Program Restrictions, Allowances and Recommendations

1. All upper division biology courses applied to the undergraduate biology major must be completed within 10 years of graduation.
2. Biology majors are advised to complete either ENGL 3154 - Technical Writing or ENGL 4175 - Writing in the Sciences to fulfill the CLAS Communicative Skills requirement.
3. Intro Experimental Physics labs I and II (PHYS 2321 and PHYS 2341) are specifically designed for students in non-Physics majors and can be paired with either College Physics (PHYS 2010 and PHYS 2020) or General Physics (PHYS 2311 and PHYS 2331) lectures. Students pursuing a second major in Physics should complete General Physics lectures (PHYS 2311 and PHYS 2331) and Applied Physics Labs (PHYS 2351 and PHYS 2361).

Take **all** of the following Biology core courses:

- BIOL 2051 - General Biology I **or**
- BIOL 2095 - Honors General Biology I

- BIOL 2071 - General Biology Laboratory I **or**
- BIOL 2096 - Honors General Biology Lab I

- BIOL 2061 - General Biology II **or**
- BIOL 2097 - Honors General Biology II

- BIOL 2081 - General Biology Laboratory II **or**
- BIOL 2098 - Honors General Biology Lab II

- BIOL 3411 - Principles of Ecology
- BIOL 3611 - General Cell Biology
- BIOL 3832 - General Genetics
- BIOL 3445 - Introduction to Evolution

Take an additional **16** semester hours of upper-division biology, including:

- At least **one** upper division biology lab course from the following list - BIOL 3020 will not satisfy this requirement.
- BIOL 3137 , BIOL 3225, BIOL 3244, BIOL 3413, BIOL 3612, BIOL 3654, BIOL 3763, BIOL 4125, BIOL 4335, BIOL 4345, BIOL 4640, BIOL 4644, BIOL 4910

- At least **one** 3 credit hour 4000+ biology lecture course - taken in residence from CU Denver Biology faculty (BIOL 4125, BIOL 4840, BIOL 4880 and BIOL 4990 do not satisfy this requirement, but can apply as biology electives).

Note: Biochemistry (CHEM 3810 or CHEM 4820) may be counted as biology elective hours.

Note: A maximum total of six credit hours of Individually Structured courses, including Independent Study (BIOL 3840/4840), Directed Research (BIOL 4880) and Internship (BIOL 3939), may be counted toward the upper-division biology electives.

Take **all** of the following Ancillary Core courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**
- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

- CHEM 3411 - Organic Chemistry I **or**
- CHEM 3481 - Honors Organic Chemistry I

Take **one** of the following sequences, referring to note 3 under Program Restrictions, Allowances and Recommendations for alternative Physics lab information:

Sequence A

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II

Or Sequence B

- PHYS 2010 - College Physics I

- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II

Take **one** of the following Ancillary Math courses or sets:

OPTION ONE

- MATH 1401 - Calculus I

OPTION TWO

- BIOL 3763 - Biostatistics **or**
- MATH 4830 - Applied Statistics **and**

- MATH 1108 - Stretch College Algebra-Part 1
and
- MATH 1109 - Stretch College Algebra-Part 2
or
- MATH 1080 - Calculus for Social Sciences and Business
or
- MATH 1110 - College Algebra **or**
- MATH 1120 - College Trigonometry **or**
- MATH 1130 - Precalculus Mathematics

CHEMISTRY BS

Introduction

Please click [here](#) to see Chemistry Department information.

A Chemistry degree can prepare you for a meaningful career in:

- Developing renewable energy solutions for climate change
- Ensuring safe and pure air and drinking water
- Discovering materials for new devices using nanotechnology
- Analyzing medical samples to detect rare and dangerous diseases
- Contributing to Colorado's and America's mining and petroleum industries
- Contributing to Colorado's emerging natural products and pharmaceuticals industries.

A BS in Chemistry also stands out as a premiere accomplishment in applications for professional degree programs, including pharmacy, medicine, nursing, dentistry, medical technology, and many others. Previous BS Chemistry graduates from CU-Denver have gone on to medical, dental, and pharmacy schools; to Ph.D. programs in chemistry and biomedical sciences; and to productive careers in the biotech, pharmaceutical, and medical technology industries.

The Chemistry Department offers two options for a chemistry degree: a BS Chemistry or a BS Chemistry ACS Certified. Students interested in the chemistry major should consult regularly with the chemistry major advisor, Dr. Marta K. Maroń (marta.maron@ucdenver.edu). The Advisor can help you select the track that best fits your future goals. A complete description of the chemistry major programs may be obtained in the Department of Chemistry office (Science 3071) or Department website.

Qualified majors are strongly urged to participate in directed research with a research faculty member and in the departmental honors program. We also strongly encourage chemistry majors to participate in the Department by serving as graders, learning assistants, and/or teaching assistants. Contact the chemistry major advisor for more information and/or questions.

American Chemical Society (ACS) Certified Degree.

The ACS Certified degree requires a more thorough background than the minimum requirements for a Chemistry BS degree. Students planning on going into industry upon completing their Bachelor of Science are at an advantage completing the ACS Certified degree option.

- The ACS certified degree is open to all Chemistry majors regardless of future plans.
- Chemistry and Biochemistry double majors earn an ACS Certified degree in Chemistry automatically. For more information see the major advisor.
- See the ACS certified degree program page for additional coursework.

These Degree requirements are subject to periodic revision by the Academic Department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 67 credit hours, including a minimum of 45 CHEM credit hours and a minimum of 22 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 upper-division level (3000-level and above) CHEM credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 14 CHEM credit hours with CU Denver faculty, including CHEM 4128, 4518 or 4538.

Program Restrictions, Allowances and Recommendations

1. A student who has declared a Chemistry major at CU Denver may not take additional chemistry courses outside of the Department for the purpose of applying those credits toward meeting the requirements of the major without prior written approval of the undergraduate Chemistry/Biochemistry advisor. No more than 3 additional hours of such pre-approved transfer credits will be allowed.
2. All courses applied to the Chemistry major need to be taken within ten years of the graduation date.
3. Intro Experimental Physics labs I and II (PHYS 2321 and PHYS 2341) are specifically designed for students in non-Physics majors and can be paired with either College Physics (PHYS 2010 and PHYS 2020) or General Physics (PHYS 2311 and PHYS 2331) lectures. Students pursuing a second major in Physics should complete General Physics lectures (PHYS 2311 and PHYS 2331) and Applied Physics Labs (PHYS 2351 and PHYS 2361).

Take **all** of the following required courses:

- CHEM 2031 - General Chemistry I **or**
 - CHEM 2081 - Honors General Chemistry I
-
- CHEM 2038 - General Chemistry Laboratory I **or**
 - CHEM 2088 - Honors General Chemistry I Laboratory
-
- CHEM 2061 - General Chemistry II **or**
 - CHEM 2091 - Honors General Chemistry II Lecture
-
- CHEM 2068 - General Chemistry Laboratory II **or**
 - CHEM 2098 - Honors General Chemistry II Laboratory
-
- CHEM 3111 - Analytical Chemistry
 - CHEM 3118 - Analytical Chemistry Laboratory
-
- CHEM 3411 - Organic Chemistry I **or**
 - CHEM 3481 - Honors Organic Chemistry I
-
- CHEM 3418 - Organic Chemistry Lab I **or**
 - CHEM 3488 - Honors Organic Chemistry Laboratory I
-
- CHEM 3421 - Organic Chemistry II **or**
 - CHEM 3491 - Honors Organic Chemistry II
-
- CHEM 3498 - Honors Organic Chemistry Laboratory II
 - CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy
 - CHEM 4538 - Physical Chemistry Laboratory: Molecular Structure
 - CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
 - CHEM 4518 - Physical Chemistry Laboratory: Reaction Analysis
 - CHEM 3011 - Inorganic Chemistry
 - CHEM 4121 - Instrumental Analysis
 - CHEM 4128 - Instrumental Analysis Laboratory

Take **one** of the following courses:

- CHEM 3018 - Inorganic Chemistry Laboratory
- CHEM 4828 - Biochemistry Laboratory

Note: CHEM 4828 requires additional prerequisites other than the courses listed above.

Take **all** of the following Ancillary courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

Take **one** of the following sequences, referring to note 3 under Program Restrictions, Allowances and Recommendations for alternative Physics lab information:

Sequence A

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II
- MATH 3511 - Mathematics of Chemistry **or**
- MATH 2421 - Calculus III **or**
- CHEM 4500 - Foundations of Physical Chemistry

Or Sequence B

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II
- CHEM 4500 - Foundations of Physical Chemistry

CHEMISTRY BS, ACS CERTIFIED

Introduction

Please click [here](#) to see Chemistry Department information.

The Chemistry Department offers two options for a chemistry degree: a BS Chemistry or a BS Chemistry ACS Certified. Students interested in the chemistry major should consult regularly with the chemistry major advisor, Dr. Marta K. Maroń (marta.maron@ucdenver.edu). The Advisor can help you select the track that best fits your future goals. A complete description of the chemistry major programs may be obtained in the Department of Chemistry office (Science 3071) or Department website.

Qualified majors are strongly urged to participate in directed research with a research faculty member and in the departmental honors program. We also strongly encourage chemistry majors to participate in the Department by serving as graders, learning assistants, and/or teaching assistants. Contact the chemistry major advisor for more information and/or questions.

Students planning chemistry as a career should be familiar with the recommendations of the American Chemical Society (ACS) for the professional training of chemists. The ACS certification requires students following the BS program of study take foundation courses in the five sub-disciplines of chemistry: analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry. In addition, students take an in-depth (second semester) course in four out of the five sub-disciplines and are required to complete 400 hours of laboratory work post General Chemistry Laboratories. Laboratory work has to encompass four of the five sub-disciplines. General Chemistry I and II with laboratories are considered introductory courses and are prerequisites to foundation courses. No chemistry course with a grade of less than C (2.0) can be applied toward ACS certification. Students should check with the undergraduate chemistry major Advisor for details.

These Degree requirements are subject to periodic revision by the Academic Department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

This is an on-campus program.

Declaring This Major

[Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements

- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 67 credit hours, including a minimum of 45 CHEM credit hours and 22 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 upper division level (3000-level and above) CHEM credit hours.
3. Students must earn a minimum grade of C(2.0) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 14 CHEM credit hours with CU Denver faculty, including CHEM 4128, 4518 or 4538.

Program Restrictions, Allowances and Recommendations

1. A student who has declared a chemistry major at CU Denver may not take additional chemistry courses outside of the department for the purpose of applying those credits toward meeting the requirements of the major without prior written approval of the undergraduate advisor. No more than 3 additional hours of such pre-approved transfer credits will be allowed.
2. All courses applied to the chemistry major need to be taken within ten years of the graduation date.
3. Intro Experimental Physics labs I and II (PHYS 2321 and PHYS 2341) are specifically designed for students in non-Physics majors and can be paired with either College Physics (PHYS 2010 and PHYS 2020) or General Physics (PHYS 2311 and PHYS 2331) lectures. Students pursuing a second major in Physics should complete General Physics lectures (PHYS 2311 and PHYS 2331) and Applied Physics Labs (PHYS 2351 and PHYS 2361).

Take **all** of the following required courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**
- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

- CHEM 3111 - Analytical Chemistry **and**
- CHEM 3118 - Analytical Chemistry Laboratory

- CHEM 3411 - Organic Chemistry I **or**
- CHEM 3481 - Honors Organic Chemistry I

- CHEM 3418 - Organic Chemistry Lab I **or**
- CHEM 3488 - Honors Organic Chemistry Laboratory I

- CHEM 3421 - Organic Chemistry II **or**
- CHEM 3491 - Honors Organic Chemistry II

- CHEM 3498 - Honors Organic Chemistry Laboratory II
- CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy
- CHEM 4538 - Physical Chemistry Laboratory: Molecular Structure
- CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4518 - Physical Chemistry Laboratory: Reaction Analysis
- CHEM 3011 - Inorganic Chemistry
- CHEM 4121 - Instrumental Analysis
- CHEM 4128 - Instrumental Analysis Laboratory
- CHEM 4810 - General Biochemistry I **or**
- CHEM 3810 - Biochemistry

Take **one** of the following courses:

- CHEM 3018 - Inorganic Chemistry Laboratory
- CHEM 4828 - Biochemistry Lab

Take **one** of the following lecture courses:

- CHEM 4700 - Environmental Chemistry
- CHEM 4820 - General Biochemistry II
- CHEM 4835 - Biochemistry of Gene Regulation and Cancer
- CHEM 5010 - Advanced Inorganic Chemistry
- CHEM 5550 - Applications of Group Theory in Chemistry

or

- CHEM 4600 - Advanced Topics in Chemistry (With permission from course instructor and undergraduate major advisor. The course must fulfill either the biochemistry or inorganic chemistry area.)

Take **all** of the following Ancillary courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

Take **one** of the following sequences, referring to note 3 under Program Restrictions, Allowances and Recommendations for alternative Physics lab information:

Sequence A

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II

- MATH 3511 - Mathematics of Chemistry **or**
- MATH 2421 - Calculus III **or**
- CHEM 4500 - Foundations of Physical Chemistry

Or Sequence B

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II
- CHEM 4500 - Foundations of Physical Chemistry

CIVIL ENGINEERING BS

Introduction

Please click [here](#) to see Civil Engineering department information.

The objectives of the bachelor of science in civil engineering program are to produce graduates who:

- are able to perform the technical analyses and design tasks of entry-level civil engineers
- can successfully work toward professional engineering licensure
- communicate effectively, both orally and in writing
- understand the importance of leadership skills, team building and ethical practice
- value lifelong learning and improvement through graduate degrees or professional study
- appreciate the importance of community involvement and social contribution civil engineers are dedicated to improving our living environment

Civil engineering offers an interesting and challenging career in the design, construction, and maintenance of buildings and urban infrastructure; in transportation systems, including highways, airports, rapid transit lines, railroads, and harbor facilities; in the development of water resources, including reservoirs for storage, canals for irrigation, dams for power generation, stormwater management for drainage, groundwater recharge for contamination prevention, wastewater treatment for environmental protection, and water purification for drinking purposes; in the construction industry; including foundations, bridges, concrete and steel structures, in problems concerned with environmental preservation; and in the sustainable development of cities. In preparing for work in such a broad field, the civil engineering student studies mathematics, basic science, communication, social science and humanities, engineering science and civil engineering design. CU Denver's civil engineering graduates usually find their first professional employment with consulting engineering firms, government agencies and various industries.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.
2. Students must maintain a minimum 2.0 GPA in all CVEN courses attempted.

Take all of the following Civil Engineering courses:

- CEMT 2100 - Construction Management Fundamentals
- CVEN 1025 - Civil Engineering Graphics and Computer Aided Design
- CVEN 1067 - Introduction to Civil Engineering
- CVEN 2121 - Analytical Mechanics I
- CVEN 2214 - Surveying for Engineering or CVEN 2212 Engineering Surveying
- CVEN 3111 - Analytical Mechanics II
- CVEN 3121 - Mechanics of Materials
- CVEN 3141 - Introduction to Structural Materials
- CVEN 3200 - Computational Methods for Civil Engineers
- CVEN 3313 - Fluid Mechanics
- CVEN 3323 - Hydrosystems Engineering
- CVEN 3401 - Introduction to Environmental Engineering
- CVEN 3505 - Structural Analysis
- CVEN 3602 - Transportation Engineering
- CVEN 3718 - Geotechnical Engineering I
- CVEN 4000 - Senior Seminar
- CVEN 4067 - Senior Design Projects
- ENGR 1100 - Fundamentals of Computational Innovation or IWKS 2300 - Computational Foundations of Innovation

Take **four** of the following Design Electives courses:

- CVEN 4427 - Storm Water System Design
- CVEN 4565 - Timber Structure Design
- CVEN 4575 - Structural Steel Design
- CVEN 4585 - Reinforced Concrete Design
- CVEN 4602 - Highway Engineering
- CVEN 4738 - Intermediate Foundation Engineering

Additional design courses as approved by an advisor

- CVEN 4590 - Design of Prestressed Concrete
- CVEN 5540 - Masonry Design
- CVEN 5550 - Highway Bridge Design
- CVEN 5585 - Advanced Topics in Reinforced Concrete
- CVEN 5682 - Pavement Design
- CVEN 4591 - Design of Composite Structures

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3195 - Linear Algebra and Differential Equations
- CVEN 3611 - Engineering Statistics

Take the following Chemistry course:

- ENGR 1130 - Chemistry for Engineers

Take **all** of the following Physics courses:

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based

Take **one** of the following courses:

- CVEN 4025 - Autocad Civil 3d & Advanced Civil Engineering Graphics
- CVEN 4077 - Engineering Economy
- CVEN 4087 - Engineering Contracts

Take **three** elective courses: Any 4000-level or higher CVEN or CEMT courses or any approved 3000-level math, science or engineering courses.

Note: Up to two 5000-level CVEN courses taken at CU Denver for the BSCE can be applied to a CE Masters degree at CU Denver if relevant to the student's Masters degree emphasis as determined by the students Masters degree advisor.

COMMUNICATION BA

Introduction

Please click [here](#) to see Communication department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This program is offered both on-campus and online.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 39 COMM credit hours.

2. Students must complete a minimum of 15 upper-division (3000-level and above) COMM credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 COMM credit hours, 15 of which must be upper division, with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Communication majors may complete up to 6 credit hours of internship (COMM 3939).
2. A maximum of 6 credit hours of independent study courses may be applied to the major.
3. No more than 56 Communication credit hours can count toward graduation.
4. Students may transfer in up to 21 COMM credits.
5. In addition to required Communication courses, students are required to take seven elective courses (21 hours), which may consist of classes chosen from any combination of Communication Pathway and Inquiry and Analysis courses.
 - community service and public affairs
 - global and intercultural communication
 - health communication
 - media and cultural studies
 - strategic communication

Take **all** of the following Communication courses:

- COMM 1011 - Fundamentals of Communication
- COMM 1021 - Introduction To Media Studies
- COMM 2020 - Communication, Citizenship, and Social Justice
- COMM 2075 - Researching and Writing in Comm

Take **one** of the following courses:

- COMM 1001 - Presentational Speaking
- COMM 2050 - Business and Professional Speaking

Take **seven** Communication (COMM) elective courses.

Take **one** of the following exit courses:

- COMM 3939 - Internship
- COMM 4040 - Communication, Prisons, and Social Justice
- COMM 4051 - Advanced Strategic Communication
- COMM 4430 - Communication, China, and the US
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4558 - Digital Health Narratives
- COMM 4660 - Queer Media Studies
- COMM 4688 - Senior Seminar: Transitioning from College to Career
- COMM 4700 - Thesis and Project Practicum
- COMM 4995 - Global Study Topics (Travel Study)

Exit courses include a High Impact Practice, such as: experiential and service learning, collaborative learning, writing-intensive assignments, global education, a focus on diversity and inclusion, and/or a project-based capstone class.

COMPUTER SCIENCE BA

Introduction

Please click [here](#) to see computer science department information.

The bachelor of arts (BA) in computer science (CS) degree is designed to create transformational relationships among computer science and other fields of their interest across the university. It will allow undergraduate students with interests and passion in myriad fields to complement these with contemporary computer science knowledge, skills, and attitudes that will render them immediately impactful in today's rapidly changing workforce.

Graduates will be able to demonstrate a broad range of understanding in mathematics, computer software, algorithms, programming and a specialization of their choice across the CU Denver curriculum. Graduates will be able to:

- Apply algorithmic reasoning to a variety of computational problems
- Design, implement, and document solutions to needed computational problems
- Implement software systems that meet specific design requirements
- Use current tools or computing techniques to implement and evaluate programs or computer-based solutions.

- Apply computer science techniques and tools to solve problems in a chosen application area.

Program Delivery

- This is an on-campus program.

Declaring This Major

Click here to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- Click here for information about Academic Policies

Program Requirements

1. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.
2. Students must maintain a minimum 2.0 GPA in all CSCI courses attempted.

Undergraduate students in the CSE department are required to have a personal laptop, with the following specifications, before starting 3000-level classes:

	<i>Minimum</i>	<i>Recommended</i>
Operating System	Windows 10 1809+	Windows 10 1809+
CPU	Intel Core i5 dual-core 1.6 GHz or Intel Core i5 quad core 1.4 GHz	Intel Core i5/i7 2.2 GHz or faster
RAM	8GB (upgradable to 16GB)	12 to 16GB

	Minimum	Recommended
Disk Space	256GB Hard Disk Drive (HDD) with 100GB free Upgradable to 512GB SSD	512GB Solid State Drive (SSD) with 100GB free
Hard Disk Speed		Install Windows and Applications on a SSD
Graphic Card	Integrated Graphics Card	Dedicated Graphics Card
Display	1280x720 Resolution	1920x1024 Resolution
Network Connectivity	Ethernet + Wifi	Ethernet + Wifi

The BA in computer science requires 120 credits including: 24 credits of CU Denver core curriculum, 7 credits of mathematics, 8 credits of physical science, 43 credits of computer science, and 38 credits of free electives.

Take 43 credits of computer science courses including:

Computer science core courses (22 credits):

- CSCI 1410 - Fundamentals of Computing
- CSCI 1411 - Fundamentals of Computing Laboratory
- CSCI 2312 - Object Oriented Programming
- CSCI 2421 - Data Structures and Program Design
- CSCI 2511 - Discrete Structures
- CSCI 3287 - Database System Concepts
- CSCI 3412 - Algorithms
- CSCI 3508 - Introduction to Software Engineering

Seven courses (21 credits) of any 3000-level or above computer science (CSCI) courses not applied to the above 22 credits.

Mathematics (7 credits):

- MATH 1401 - Calculus I
- Additional 2000+ level math course

Science (8 credits - two-course natural science sequence with lab):

Choice 1: (8 Credits)

- BIOL 2051 - General Biology I
- BIOL 2061 - General Biology II
- BIOL 2071 - General Biology Laboratory I
- BIOL 2081 - General Biology Laboratory II

OR Choice 2: (9 Credits)

- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II

OR Choice 3: (10 Credits)

- PHYS 2010 - College Physics I
- PHYS 2321 - General Physics Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - General Physics Lab II

OR Choice 4: (10 Credits)

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II

OR Choice 5: (10 Credits)

- GEOL 1073 - Physical Geology: Surface Processes
- GEOL 1074 - Physical Geology: Surface Processes Laboratory
- GEOL 1083 - Physical Geology: Internal Processes
- GEOL 1084 - Physical Geology: Internal Processes Laboratory

Free electives for students' are of concentration (38 Credits)

Please note CS courses that are not part of the BACS can be counted toward satisfying free electives. This can help with taking systems courses to prepare for the required background for some advanced CS/breadth areas of interest.

COMPUTER SCIENCE BS

Introduction

Please click [here](#) to see computer science department information.

Undergraduate computer science students at CU Denver are able to tailor their degree to their interests and goals. Students are exposed to the breadth of the field including machine learning & data science, computer graphics & game design, programming, software engineering, systems, scientific computing, secure computing, theory and cyber-physical systems.

The computer science bachelor of science program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

The educational objectives of the computer science undergraduate program are to produce graduates who:

- Advance professionally as productive, practicing professionals in computer science and related careers through the continued development of their expertise and skills.
- Further develop their knowledge, skill set, and career opportunities through graduate education and/or professional studies.
- Function effectively as part of a team to succeed in their professional careers.

Measurable Outcomes

The bachelor of science in computer science program must enable its students to attain, by the time of graduation:

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

- Apply computer science theory and software development fundamentals to produce computing-based solutions.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.
2. Students must maintain a minimum 2.0 GPA in all CSCI courses attempted.
3. Undergraduate students in the CSE department are required to have a personal laptop, with the following specifications, before starting 3000-level classes:

	<i>Minimum</i>	<i>Recommended</i>
<i>Operating System</i>	Windows 10 1809+	Windows 10 1809+
<i>CPU</i>	Intel Core i5 dual-core 1.6 GHz or Intel Core i5 quad core 1.4 GHz	Intel Core i5/i7 2.2 GHz or faster
<i>RAM</i>	8GB (upgradable to 16GB)	12 to 16GB

	<i>Minimum</i>	<i>Recommended</i>
<i>Disk Space</i>	256GB Hard Disk Drive (HDD) with 100GB free Upgradable to 512GB SSD	512GB Solid State Drive (SSD) with 100GB free
<i>Hard Disk Speed</i>		Install Windows and Applications on a SSD
<i>Graphic Card</i>	Integrated Graphics Card	Dedicated Graphics Card
<i>Display</i>	1280x720 Resolution	1920x1024 Resolution
<i>Network Connectivity</i>	Ethernet + Wifi	Ethernet + Wifi

The BS Computer Science degree requires 128 credits including: 24 credits of CU Denver Core Curriculum, 12 credits of Mathematics, 10 Credits of Physical Science and 82 credits of Computer Science.

Take 82 credits of Computer Science Courses including:

Take **all (25 credits)** of the following Computer Science courses:

- CSCI 1410 - Fundamentals of Computing
- CSCI 1411 - Fundamentals of Computing Laboratory
- CSCI 2312 - Object Oriented Programming
- CSCI 2421 - Data Structures and Program Design
- CSCI 2511 - Discrete Structures
- CSCI 3287 - Database System Concepts
- CSCI 3412 - Algorithms
- CSCI 3508 - Introduction to Software Engineering
- CSCI 4034 - Theoretical Foundations of Computer Science

Take **all (21 credits)** of the following Computer Science Core courses:

- CSCI 1510 - Logic Design
- CSCI 2525 - Assembly Language and Computer Organization
- CSCI 3415 - Principles of Programming Languages
- CSCI 3453 - Operating System Concepts
- CSCI 3761 - Introduction to Computer Networks
- CSCI 4551 - Parallel & Distributed Systems
- CSCI 4591 - Computer Architecture

Take **two** (6 credits) of the following Capstone courses:

- CSCI 4738 - Senior Design I
- CSCI 4739 - Senior Design II

Take **one** (3 credits) of the following Data Science courses:

- CSCI 4455 - Data Mining
- CSCI 4580 - Data Science
- CSCI 4930 - Machine Learning
- CSCI 4931 - Deep Learning
- CSCI 4951 - Big Data Systems

Take **one** (3 credits) of the following Computer Science courses:

- CSCI 3560 - Probability and Computing
- CSCI 4650 - Numerical Analysis I
- CSCI 4110 - Applied Number Theory

Take **one** (3 credits) of the following Secure Computing courses:

- CSCI 4741 - Principles of Cybersecurity
- CSCI 4742 - Cybersecurity Programming and Analysis
- CSCI 4743 - Cyber and Infrastructure Defense

Take **two** (6 credits) of the following System Software courses:

- CSCI 3511 - Hardware-Software Interface
- CSCI 4287 - Embedded Systems Programming
- CSCI 4565 - Introduction to Computer Graphics

Take **five** courses (15 credits) of any 3000-level or above Computer Science (CSCI) course that is not applied to the above 67 credits.

Take **all** of the following Mathematics (12 credits) courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 3195 - Linear Algebra and Differential Equations

Note: Students can substitute both MATH 3191 and MATH 3200 for MATH 3195

Take ten credits of Science (Two course sequence with lab) of either:

Choice 1: (8 credits*)

- BIOL 2051 - General Biology I
- BIOL 2061 - General Biology II
- BIOL 2071 - General Biology Laboratory I
- BIOL 2081 - General Biology Laboratory II

OR Choice 2: (9 credits*)

- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II

OR Choice 3: (10 Credits)

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II

*Additional credits needed to reach 10 may come from an advanced science course beyond CHEM 2061 or BIOL 2061, an additional CS elective, math beyond CALC II, or one of the engineering disciplines (not GEN-ED. courses).

CONSTRUCTION ENGINEERING AND MANAGEMENT BS

Introduction

The construction engineering and management bachelor of science offers the rigors of engineering problem-solving and design with business and management courses, coupled with construction engineering and management courses. Students receive an innovative

interdisciplinary education that combines coursework in engineering, construction, business and architecture.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.

Required Architecture & Business courses:

- ARCH 3330 - Building Systems I
- ARCH 4440 - Building Systems II
- BMIN 1000 - Introduction to Business

Required Engineering courses:

- CVEN 1025 or MECH 1025 - CAD and Graphics for Mechanical Engineering
- CVEN 2212 - Engineering Surveying
- ENGR 1200 - Fundamentals of Engineering Design Innovation
- ENGR 1100 - Fundamentals of Computational Innovation or IWKS 2300 - Computational Foundations of Innovation

Required Construction courses:

- CEMT 1000 - Introduction to Construction Management

- CEMT 2100 - Construction Management Fundamentals
- CEMT 2300 - Heavy Civil Construction and Equipment
- CEMT 3100 - Field Engineering and Management
- CEMT 4067 - Construction Senior Capstone
- CEMT 4231 - Construction Materials and Methods
- CEMT 4232 - Construction Planning and Control
- CEMT 4233 - Construction Cost Estimating
- CEMT 4234 - Sustainable Construction
- CEMT 4236 - Project Management Systems
- CEMT 4240 - Building Information Modeling (BIM)
- CEMT 4242 - Construction Safety
- CEMT 4939 - Internship

Take **15** credits of Engineering Specialty Science and Design. Students must meet with an advisor to determine an appropriate course sequence from the following areas:

Civil Engineering (must take at least 1 design class)

Computer Science

Electrical Engineering (must take at least 1 design class)

Mechanical Engineering (must take at least 1 design class)

Students must take a minimum of 30 credits of math and science

Take **all** of the following courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- ENGR 1130 - Chemistry for Engineers
- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I

Take **one** of the following Statistics courses:

- CVEN 3611 - Engineering Statistics
- MATH 2830 - Introductory Statistics
- MATH 3800 - Probability and Statistics for Engineers
- ELEC 3817 - Engineering Probability and Statistics
- BANA 2010 - Business Statistics

An additional 9 credits hours of math and science.

Specific math and science courses are prerequisites to some Engineering Specialty courses. Please consult with an advisor.

Take **one** elective course in math, science, architecture, business, engineering, construction or technical communication.

Note: Up to two 5000-level CEMT or CVEN courses taken at CU Denver for the BS can be applied to a CE Master's degree at CU Denver if relevant to the student's Master's degree emphasis as determined by the students Master's degree advisor.

CONSTRUCTION MANAGEMENT BS

Introduction

The bachelor of science in construction management includes a solid foundation of construction engineering and management courses, engineering courses, courses from the Business School and College of Architecture and Planning.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Engineering, Design and Computing Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.

Required Business courses:

- BMIN 1000 - Introduction to Business
- BLAW 3050 - Business Law and Ethics

Take 3 additional business courses. Choose 1 of the following options:

Business Fundamentals Minor

- BMIN 3001 - Fundamentals of Management and Marketing
- BMIN 3002 - Fundamentals of Accounting and Finance
- BMIN 3004 - Principles of Strategic Management

Entrepreneurship Certificate

- ENTP 3200 - Essentials in Entrepreneurship
- ENTP 3230 - Small Business Accounting and Finance
- ENTP 3299 - Business Model Development & Planning
- Could earn a minor in Entrepreneurship by taking 2 additional ENTP courses as technical electives

Any three of the following courses

- ACCT 2200 - Financial Accounting and Financial Statement Analysis
- BANA 3000 - Operations Management
- MGMT 3000 - Managing Individuals and Teams
- MKTG 3000 - Principles of Marketing
- MKTG 4700 - Personal Selling and Sales Management
- Other courses with advisor approval

Required Architecture Coursework

- ARCH 3330 - Building Systems I
- ARCH 3340 - Theory of Structures I
- ARCH 4340 - Theory of Structures II
- ARCH 4440 - Building Systems II

Required Engineering courses:

- CVEN 1025 or MECH 1025 - CAD and Graphics for Mechanical Engineering
- CVEN 2212 - Engineering Surveying
- ENGR 1200 - Fundamentals of Engineering Design Innovation
- ENGR 1100 - Fundamentals of Computational Innovation or IWKS 2300 - Computational Foundations of Innovation

Required Construction courses:

- CEMT 1000 - Introduction to Construction Management
- CEMT 2100 - Construction Management Fundamentals
- CEMT 2300 - Heavy Civil Construction and Equipment
- CEMT 3100 - Field Engineering and Management
- CEMT 4067 - Construction Senior Capstone
- CEMT 4231 - Construction Materials and Methods
- CEMT 4232 - Construction Planning and Control
- CEMT 4233 - Construction Cost Estimating
- CEMT 4234 - Sustainable Construction
- CEMT 4236 - Project Management Systems
- CEMT 4240 - Building Information Modeling (BIM)
- CEMT 4242 - Construction Safety
- CEMT 4939 - Internship

Required math and science courses:

- MATH 1130 - Precalculus Mathematics or MATH 1401 - Calculus I or MATH 1110 - College Algebra and MATH 1120 - College Trigonometry
- PHYS 2010 - College Physics I
- PHYS 2030 - College Physics Lab I

Take **one** of the following Statistics courses:

- CVEN 3611 - Engineering Statistics
- MATH 2830 - Introductory Statistics
- MATH 3800 - Probability and Statistics for Engineers
- ELEC 3817 - Engineering Probability and Statistics
- BANA 2010 - Business Statistics

Take **11 credits** of elective courses in math, science, architecture, business, engineering, construction or technical communication.

Note: Up to two 5000-level CEMT or CVEN courses taken at CU Denver for the BSCE can be applied to a CE Master's degree at CU Denver if relevant to the student's Master's degree emphasis as determined by the student's Master's degree advisor.

CRIMINAL JUSTICE BA

Introduction

Please click [here](#) to see School of Public Affairs information.

The School of Public Affairs' Bachelor of Arts in Criminal Justice (BACJ) program is designed for students who are interested in studying the American criminal justice system. Coursework in the major includes the complex nature of crime causation; the history, framework, and operations of criminal justice organizations; the implications of public policies related to crime and justice; and special topics such as capital punishment, victimology, race and crime, and community corrections. Students also receive rigorous training in research methods and statistics, allowing them to understand how to frame important questions and become critical consumers of information. Students may choose to concentrate their electives in Law Enforcement, Victims and Victim Studies, or may use electives to study other criminal justice-related topics.

As with all undergraduate degrees at CU Denver, BACJ students will also complete the requirements of the CU Denver core curriculum, ensuring that they have a well-rounded liberal arts education. The critical thinking skills provided by the degree are important to any future career path, but BACJ students are particularly well-prepared for careers in criminal justice organizations such as local, state, and federal law enforcement and criminal justice agencies and in nonprofit organizations working with people and communities affected by crime. Many graduates pursue advanced degrees in law, criminal justice, and related fields.

Program Delivery

- Courses are offered on campus, online, and in hybrid formats.

Declaring This Major

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Bachelors of Arts in Criminal Justice degree requires 36 credit hours of coursework. Students must complete a minimum of 45 upper-division credit hours, 21 of which must be Criminal Justice credit hours.
2. A maximum of 15 transfer credits may be applied to the major. Transfer Criminal Justice credits above the 15 credits already applied to the major will count as general electives. CRJU courses taken from the University of Colorado, Colorado Springs are not subject to this transfer credit limit for the major.
3. Students must receive a minimum C- grade in each undergraduate course applied to satisfy major or minor degree requirements and must maintain a 2.0 GPA overall in major or minor courses.

Students must complete the following required courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory
- CRJU 3100 - Research Methods
- CRJU 3150 - Statistics for Criminal Justice *
- CRJU 4042 - Corrections
- CRJU 4043 - Law Enforcement
- CRJU 4044 - Courts and Judicial Process
- SOCY 1001 - Understanding the Social World **

Students must complete 15 credit hours of electives, 9 of which must be Criminal Justice courses offered by the School of Public Affairs, and 6 of which may be taken from the approved list of other department courses.

*Students must successfully pass CRJU 3100 Criminal Justice Research Methods with a C- or better before taking CRJU 3150 Statistics for Criminal Justice

**This class also fulfills a Social Science requirement of the CU Denver core curriculum

Take **fifteen** credit hours of electives, **nine** of which must be Criminal Justice courses offered by the School of Public Affairs, and **six** of which may be taken from the approved list of other department courses.

Criminal Justice Electives:

Any 3000 or 4000 level CRJU course not already required for the major may count as a Criminal Justice major elective.

- CRJU 4939 - Internship *

The internship (CRJU 4939) is required as one of the electives for the major unless officially waived by the BACJ Program Director. Students whose internships are approved will take a 3 credit hour Criminal Justice elective in place of a 3 credit-hours internship. Students should direct questions and concerns to their Academic Advisor. See SPA Graduation Requirements for more information.

Other electives: **

- ANTH 4090 - Drug Syndemic
- CHEM 1494 - Forensic Chemistry
- COMM 4040 - Communication, Prisons, and Social Justice
- COMM 4265 - Gender and Communication
- COMM 4750 - Legal Reasoning and Writing
- HDFR 4075 - Family Policy & Law
- HIST 3231 - Famous U.S. Trials
- HIST 4308 - Crime, Policing, and Justice in American History
- ECON 3300 - Economics of Crime and Punishment
- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 4124 - Denver Politics
- PSCI 4185 - Corruption in the U.S. and Abroad
- PSCI 4216 - International Politics: Human Rights
- PSCI 4237 - American National Security
- PSCI 4240 - International Security
- PSCI 4280 - The Politics of War Law
- PSCI 4427 - Law, Politics and Justice
- PSCI 4477 - Constitutional Law I
- PSCI 4487 - Constitutional Law II
- PSCI 4494 - Judicial Politics
- PSCI 4545 - Immigration Politics
- PSCI 4837 - Contemporary Issues in Civil Liberties
- PSYC 3205 - Human Development I: Child Psychology

- PSYC 3215 - Human Development II: Adolescence and Adulthood
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3505 - Psychology and the Law
- PSYC 3610 - Psychological Trauma
- PSYC 3612 - Domestic Abuse
- SOCY 2462 - Introduction to Social Psychology
- SOCY 3020 - Race and Ethnicity in the U.S.
- SOCY 3040 - Drugs, Alcohol & Society
- SOCY 3490 - Criminology
- SOCY 3700 - Sociology of the Family
- SOCY 4340 - Juvenile Delinquency
- SOCY 4440 - Poverty and Social Inequality
- SOCY 4460 - Hate Groups and Group Violence
- SOCY 4700 - Sociology of Law
- SOCY 4770 - Advanced Topics in Sociology (Women & Crime)
- PSCI 4807 - Political Violence
- PSCI 4827 - Women and the Law
- SOCY 4780 - Violence in Relationships
- See advisor for recent additions to the list

**Students must comply with departmental prerequisites.

CRIMINAL JUSTICE BA WITH LAW ENFORCEMENT CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

Students interested in obtaining a concentration in CJLE within the Bachelor of Arts in Criminal Justice program must apply and enroll in the BACJ program within the School of Public Affairs (SPA) and must adhere to all of the degree program requirements.

The undergraduate concentration in Law Enforcement provides a detailed, comprehensive, and advanced education in the field of law enforcement. The CJLE program is designed to meet the

needs of students who wish to work in law enforcement or who are currently working in the field and would like to enrich their professional development.

The CJLE program applies a multi-faceted approach to higher education that:

- Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
- Focuses on specific, yet comprehensive, substantive areas of law enforcement that students can apply to their current or future careers in the field.

Students completing the CJLE concentration will have the knowledge and skills to evaluate and respond to a variety of situations in law enforcement professions that require technical, analytic, substantive, and ethical decision-making. They will understand the different environments and contexts in which law enforcement carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Major

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Concentration Requirements

1. A concentration in Law Enforcement requires 12 credit hours of course work.
2. A maximum of 6 transfer credits may be applied to the concentration.
3. Students must receive a minimum C- grade in each undergraduate course applied to satisfy the concentration requirements.

Program Core Courses:

- CRJU 4540 - Evidence-Based Approaches in Law Enforcement

Program Electives:

There are two elective categories, Topic Area and Professional Setting. The Topic Area electives allows the student to explore a different aspect of law enforcement. The Professional Skills elective allows the student to hone skills related to law enforcement.

Topic Area (students **take two** of the following courses):

- CRJU 3310 - Contemporary Issues in Law Enforcement
- CRJU 3320 - Police-Community Relations
- CRJU 3520 - Juvenile Justice
- CRJU 3530 - Juvenile Delinquency
- CRJU 4410 - Criminal Law and Constitutional Procedures
- CRJU 4430 - Law and Society
- CRJU 4450 - Homeland Security
- PSCI 4427 - Law, Politics and Justice
- SOCY 4340 - Juvenile Delinquency
- SOCY 4700 - Sociology of Law

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable.

Professional Skills (students **take one** of the following courses):

- ANTH 3550 - Forensic Anthropology
- CRJU 4310 - Leadership Roles in Criminal Justice
- CSCI 1001 - Computer Forensics I
- GEOG 4080 - Introduction to GIS

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

CRIMINAL JUSTICE BA WITH VICTIMS AND VICTIM SERVICES CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

Students interested in obtaining a concentration in Victims and Victim Services within the Bachelor of Arts in Criminal Justice program must apply and enroll in the BACJ program within the School of Public Affairs (SPA) and must adhere to all of the degree program requirements.

The undergraduate concentration in Victims and Victim Services provides a detailed, comprehensive, and advanced education in fields related to victims and victim services. The CJVS program is designed to meet the needs of students who wish to work in fields related to victim services or who are currently working in this field and would like to enrich their professional development.

The CJVS program applies a multi-faceted approach to higher education that:

- Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
- Focuses on specific, yet comprehensive, substantive areas of victims and victim services that students can apply to their current or future careers in the field.

Students completing the CJVS concentration program will have the knowledge and skills to evaluate, manage, and respond to a variety of situations and issues that professionals in fields related to victims and victim services face. Specifically, they will possess technical, analytic, substantive, and ethical proficiencies that will facilitate their professional interactions and development. They will understand the different environments and contexts in which victim advocates and other professionals in this field and related ones carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online, and in hybrid formats.

Declaring This Major

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements

- CU Denver's Undergraduate Academic Policies

Program Requirements

1. A concentration in Victim and Victim Services requires 12 semester hours of coursework.
2. A maximum of 6 transfer credits may be applied to the concentration.
3. Students must receive a minimum of C- grade in each undergraduate course applied to satisfy the certificate requirements.

Program Core Courses:

- CRJU 4170 - Victimology
- CRJU 3285 - Trauma in the Criminal Justice System

Program Electives:

There are two elective categories, Violence Focus and Professional Setting. The Violence Focus electives allow the student to learn about an area of violence in a more in-depth capacity. The Professional Setting elective allows the student to hone skills related to service delivery.

Violence Focus (students **take one** of the following courses):

- CRJU 3250 - Violence in Society
- CRJU 3280 - Trauma Among Correctional Populations
- CRJU 4140 - Domestic Violence and Crime
- ETST 2115 - Genocide in the 21st Century: Darfur and Beyond
- PSCI 4807 - Political Violence
- SOCY 4460 - Hate Groups and Group Violence

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable

Professional Setting (students **take one** of the following courses):

- HDFR 4090 - Helping Profession Skills in HDFR
- PUAD 4009 - Human Service Organizations
- PUAD 3110 - Seminar in Nonprofit Management

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable

DIGITAL DESIGN EMPHASIS, FINE ARTS BFA

Introduction

Please click [here](#) to see general Visual Arts information.

The digital design emphasis integrates aesthetic, creative and critical thought with expertise in electronic media and graphic design. Configured as an interdisciplinary arts and design laboratory, digital design offers a hands-on education combining new art technologies and design research to promote an understanding of the cultural impact and use of digital technology to solve human, social and business problems. Through this interdisciplinary approach combining arts and communication, digital design strives to produce artists and designers who will use technology in innovative ways in both commercial and artistic spheres.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major
- Students who are applying for entrance into the digital design emphasis must submit a portfolio, as described below. The digital design emphasis accepts applications only once a year. Students who meet the requirements and are accepted will be able to register for upper-division digital design courses.

ELIGIBILITY

The student has completed, or is in the process of completing, the following courses with a grade of C (2.0) or better in each:

- FINE 1000 - Fostering Creativity
- FINE 2405 - Introduction to Digital Design

- FINE 2415 - Typography Studio

FINE 2405 and 2415 are both offered in the fall at CU Denver.

PORTFOLIO APPLICATION REQUIREMENTS

Students applying to the digital design emphasis present a portfolio to be reviewed by design faculty. The deadline for submission will be November 1, 5:00pm (Mountain Time). The portfolio submission must be formatted and presented to the specifications listed on the Portfolio Review page here. There is no fee to apply.

QUESTIONS

For general inquiries see the Digital Design Program page here. For Portfolio review questions see the Portfolio Review page here.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 27 semester hours of visual arts credits (at any level) must be taken at CU Denver.
4. At least 24 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Pre-Portfolio courses:

- FINE 1000 - Fostering Creativity
- FINE 2405 - Introduction to Digital Design
- FINE 2415 - Typography Studio

Take **all** of the following Digital Design Emphasis courses (available only to students accepted to emphasis via portfolio review):

- FINE 3404 - Typography II
- FINE 3414 - Motion Design I
- FINE 3415 - Design Studio I
- FINE 3424 - Interactive Media
- FINE 3444 - Interactive Media II
- FINE 3454 - Motion Design II
- FINE 3464 - Design Studio II
- FINE 4400 - Design Studio III
- FINE 4480 - Design Thesis Research
- FINE 4495 - Design Thesis Project

Take **one** of the following Visual Arts courses:

- FINE 3434 - 3D Motion Design
- FINE 4420 - Interactive Media III

Take **all** of the following Visual Arts courses:

- FINE 1100 - Drawing I
- FINE 1500 - Three-Dimensional Design
- FINE 2155 - Introduction to Digital Photography
- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II
- FINE 4600 - History of Modern Design:Industrial Revolution-Present

Take **three** semester hours of Pre-20th Century Art History elective.

Take **fifteen** semester hours of Visual Arts electives. These may include studio, lecture, internship, or art history courses.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

ECONOMICS BA

Introduction

Please click [here](#) to see Economics department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 40 ECON credit hours.
2. Students must complete a minimum of 18 upper division (3000-level and above) ECON credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 33 ECON credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. A minimum of 12 of the 18 upper division credit hours required must be completed with 4000 level and above courses.
2. One D- in one ECON elective is allowed.
3. Only courses taken at CU Denver will apply in the GPA calculation.
4. All courses other than ECON 2012 and ECON 2022 require written department approval to be transferred in as satisfying major requirements.
5. Any courses taken in Economics may satisfy the elective requirement, other than internships and independent studies which require the approval of the department chair.
6. (MATH 2411 - Calculus II or MATH 2421 - Calculus III with a grade of B or higher will satisfy the ECON 3801 requirement. If a student completes ECON 3801, and then subsequently or concurrently completes before completing MATH 2411, with a grade of B or higher, ECON 3801 will be counted as an Economics 3000-level elective but will not be used as an elective for evaluation of Honors. However, if a student has already completed MATH 2411 with a B or better, then ECON 3801 taken subsequently cannot be counted as an elective.)

Take **all** of the following required courses:

- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- ECON 3801 - Introduction to Mathematical Economics (See restrictions above)
- ECON 3811 - Statistics with Computer Applications
- ECON 4071 - Intermediate Microeconomic Theory
- ECON 4081 - Intermediate Macroeconomic Theory
- ECON 4811 - Introduction to Econometrics

Take **six** three-credit hour courses in economics; **four** of them must be at the 4000-level. Any courses taken in Economics may satisfy this requirement, other than internships and independent studies which require the approval of the department chair.

EDUCATION AND HUMAN DEVELOPMENT BA WITH EARLY CHILDHOOD EDUCATION LICENSE - RURAL PARTNERSHIP

WITH TRINIDAD STATE JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in early childhood education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, and supporting English language learners, as well as technology as it relates to teaching children in grades kindergarten through sixth grade. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnerships with local school districts.

We will prepare you to become a highly effective, innovative and compassionate early childhood teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

This program is a rural partnership with Trinidad State Junior College (TSJC) in campuses in Trinidad and Alamosa, Colorado. Students complete the first two years of the program at TSJC to complete an Associate of Arts degree and then transfer to CU Denver to complete their final two years to complete the BA - EDHD degree with an early childhood teaching license. During the final two years, students complete CU Denver coursework remotely from Trinidad and are not required to travel to Denver. Advising is provided during all four years of the program, whether students are TSJC or CU Denver students. Coursework is delivered in a variety of ways, including online, video conferencing, in-person in Trinidad or Alamosa, and fieldwork in rural Colorado in and around Trinidad or Alamosa.

Program Delivery

- This is an on-campus program in Trinidad and Alamosa with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

- Students must complete a minimum total of 126 semester hours for the EDHD Early Childhood Education Track.
- Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
- Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
- A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Early childhood Education requirements unless otherwise specified.
- Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
- Transfer courses must be approved by faculty and/or advisor to apply to the major.
- Students will receive transfer credit for all of the following major requirements:

Note: Courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better. Students who do not have a B- or better in the specified courses must consult with their advisors about a plan to retake the course or complete additional work.

- ECED 2000 - Early Childhood Education as a Profession
- ECED 2930 - Infant & Toddler Field Experience & Seminar *

- ECED 4030 - Nutrition, Health, and Safety
- ECED 4040 - Administrative Seminar
- ECED 4070 - Development and Education of Infant and Toddlers
- ECED 4102 - Developmentally Appropriate Curriculum Methods and Techniques
- ECED 4202 - Child Guidance and Classroom Community
- ECED 4300 - Exceptional Learners in the Early Childhood Classroom *
- EDFN 1000 - Equality, Rights & Education
- EDHD 1930 - Community Based Field Experience & Seminar *
- HDFR 2110 - Child Ecology
- INTE 2000 - Digital Teaching and Learning
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade

Take **all** of the following Education and Human Development - Early Childhood Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- ECED 4060 - Working with Families, Professionals, and Communities
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- EDHD 2930 - Learning & Development Field Experience & Seminar *(2 credits)
- LCRT 3720 - Introduction to Writing Development and Teaching
- MTED 3040 - Mathematics for Elementary Teachers *

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- ECED 4200 - Assessment for Early Childhood Classrooms
- ECED 4650 - Dual Language Learners Learning and Development
- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- MTED 4002 - Elementary Mathematics Teaching I
- SCED 4004 - Elementary Science Teaching
- UEDU 4040 - Planning for Learning
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

EDUCATION AND HUMAN DEVELOPMENT BA WITH MIDDLE SCHOOL MATH LICENSE - RURAL PARTNERSHIP WITH OTERO JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in math education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 6 through 8. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

We will prepare you to become a highly effective, innovative and compassionate middle school math teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

This program is a rural partnership with Otero Junior College (OJC) in La Junta, Colorado. Students complete the first two years of the program at OJC to complete an Associate of Arts degree and then transfer to CU Denver to complete their final two years to complete the BA - EDHD degree with Middle School Math License. During the final two years, students complete CU Denver coursework remotely from La Junta and are not required to travel to Denver. Advising is provided during all four years of the program, whether students are OJC or CU Denver students. Coursework is delivered in a variety of ways, including online, video conferencing, in-person in La Junta, and fieldwork in rural Colorado in and around La Junta.

Program Delivery

- This is an on-campus program in Trinidad and Alamosa with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Middle School Math Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Middle School Math Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Students will receive transfer credit for **all** of the following content and major requirements:

Note: Courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better. Students who do not have a B- or better in specified courses must consult with their advisors about a plan to retake the course or complete additional work.

- MATH 2830 - Introductory Statistics
- MATH 1401 - Calculus I
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3195 - Linear Algebra and Differential Equations
- PHYS 2010 - College Physics I **or** PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2030 - College Physics Lab I **or** PHYS 2321 - General Physics Lab I
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *

Take **all** of the following Education and Human Development - Middle School Math (OJC Pathway) major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education
- CLDE 4020 - Responsive Classroom Communities
- SPED 4300 - Family, Professional, and Community Collaboration
- SPED 4400 - Universal Design for Learning (UDL)
- MTED 3040 - Mathematics for Elementary Teachers
- MTED 4621 - A World of Different Numbers
- MTED 4622 - Expanding Connections of Algebra
- MTED 4623 - Geometric Reasoning
- MTED 5070 - (Re)Humanizing the Teaching and Learning of Mathematics
- EDHD 2930 - Learning & Development Field Experience & Seminar
- EDHD 3930 - Diverse Learners Field Experience & Seminar
- UEDU 4040 - Planning for Learning

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each courses):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- MTED 4300 - Curriculum and Methods for Teaching Mathematics
- MTED 4301 - Assessment and Equity in Mathematics Instruction
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment **or** STME 4051 - STEM Capstone: Secondary Education
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

EDUCATION AND HUMAN DEVELOPMENT BA WITH MIDDLE SCHOOL MATHEMATICS LICENSE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in middle school mathematics education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 6 through 8. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

The middle school mathematics program ensures that you will develop deep content knowledge important to become a successful mathematics teacher with courses in calculus, abstract math, statistics and more. You will also be prepared with the methods and foundations coursework that will make you a highly effective, innovative and compassionate middle mathematics teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher

leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

- Students must complete a minimum total of 126 semester hours for the EDHD Middle School Mathematics Education Track.
- Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
- Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
- A minimum of C- is required for all Math content courses.
- A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Middle School Mathematics Education requirements unless otherwise specified.

- Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
- Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Middle School Mathematics Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- MTED 3040 - Mathematics for Elementary Teachers *
- CLDE 2000 - CLDE Foundations
- CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- MTED 4621 - A World of Different Numbers
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- SPED 4400 - Universal Design for Learning (UDL)
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 4020 - Responsive Classroom Communities *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following content courses (minimum grade of C- or higher):

- MATH 2830 - Introductory Statistics
- MATH 1401 - Calculus I
- MATH 3000 - Introduction to Abstract Mathematics

Choose **two** of the following content courses (minimum grade of C- or higher):

- MATH 4140 - Introduction to Modern Algebra
- MATH 4110 - Theory of Numbers
- MATH 4010 - History of Mathematics
- MATH 4408 - Applied Graph Theory

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- MTED 4300 - Curriculum and Methods for Teaching Mathematics
- MTED 4301 - Assessment and Equity in Mathematics Instruction
- MTED 4622 - Expanding Connections of Algebra
- MTED 4623 - Geometric Reasoning
- STME 4001 - Planning for Learning in Mathematics and Science
- STME 4051 - STEM Capstone: Secondary Education
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

Additional General Electives hours may be needed to reach the required 126 hours for the BA.

EDUCATION AND HUMAN DEVELOPMENT BA WITH SECONDARY ENGLISH LANGUAGE ARTS LICENSE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in English Language Arts education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 7 through 12. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

The secondary English Language Arts program ensures that you will develop deep content knowledge across a number of disciplines important to become a successful English teacher with courses in writing, literature, literary criticism and more. You will also be prepared with the methods and foundations coursework that will make you a highly effective, innovative and compassionate secondary English teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Secondary English Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with

a lower GPA may be considered under certain conditions. Please see SEHD website.)

4. A minimum of C- is required for all English content courses.
5. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Secondary English Education requirements unless otherwise specified.
6. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
7. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Secondary English Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- LCRT 5720 - Writing Development, Instruction and Assessment
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- SPED 4400 - Universal Design for Learning (UDL)
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 4020 - Responsive Classroom Communities *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following content courses (minimum grade C- or higher):

- ENGL 2450 - Introduction to Literature
- ENGL 2600 - Literary Classics **or** ENGL 1601 - Storytelling: Literature, Film, and Television
- ENGL 3001 - Critical Writing
- ENGL 3700 - American Literature to the Civil War **or** ENGL 3750 - American Literature after the Civil War
- ENGL 3795 - Race and Ethnicity in American Literature

- ENGL 4200 - Survey of the English Novel to 1900 **or** ENGL 4560 - English Romanticism **or** ENGL 4580 - The Victorian Age
- ENGL 4230 - The American Novel **or** ENGL 4236 - The American Short Story **or** ENGL 4166 - History of American Poetry
- ENGL 4250 - Twentieth Century Fiction **or** ENGL 4600 - Modernism **or** ENGL 4000 - Studies of Major Authors **or** ENGL 4770 - Topics in English: Film and Literature
- ENGL 4601 - Principles and Practices of Second Language Acquisition **or** ENGL 3160 - Language Theory

Choose **one** pre-1650 ENGL Literature Course from the following:

- ENGL 3661 - Shakespeare
- ENGL 4300 - History of British Drama
- ENGL 4320 - History of Poetry in English
- ENGL 4400 - Old English I
- ENGL 4410 - Old English II: Beowulf
- ENGL 4500 - Medieval Literature
- ENGL 4510 - Whores and Saints: Medieval Women
- ENGL 4520 - English Renaissance
- ENGL 4530 - Milton
- ENGL 4730 - Chaucer

Choose **one** post-1900 ENGL Literature Course from the following:

- ENGL 3450 - Contemporary Women Writers
- ENGL 3480 - Modern Drama
- ENGL 3750 - American Literature after the Civil War
- ENGL 4210 - History of the English Novel II
- ENGL 4235 - Faulkner
- ENGL 4240 - Topics in Contemporary American Literature
- ENGL 4308 - Contemporary Feminist Thought
- ENGL 4600 - Modernism
- ENGL 4460 - Contemporary World Literature

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- LCRT 4200 - Theory and Methods of Teaching Secondary English
- LCRT 4201 - Adolescent Literature

- UEDU 4040 - Planning for Learning
- UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

Additional General Electives hours may be needed to reach the required 126 hours for the BA.

EDUCATION AND HUMAN DEVELOPMENT BA WITH SECONDARY MATHEMATICS LICENSE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in secondary mathematics education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 7 through 12. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

The secondary mathematics program ensures that you will develop deep content knowledge important to become a successful mathematics teacher with courses in calculus, abstract math, statistics and more. You will also be prepared with the methods and foundations coursework that will make you a highly effective, innovative and compassionate secondary mathematics teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Secondary Mathematics Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum of C- is required for all Math content courses.
5. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Secondary Mathematics Education requirements unless otherwise specified.
6. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
7. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Secondary Mathematics Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- SPED 4400 - Universal Design for Learning (UDL)
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 4020 - Responsive Classroom Communities *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Choose **one** of the following major courses:

- MTED 4621 - A World of (Different) Numbers: Quantity and Operation
- MTED 4622 - Expanding Conceptions of Algebra
- MTED 4623 - Geometrical Ways Of Reasoning

Take **all** of the following content courses (minimum grade of C- or higher):

- CSCI 1410 - Fundamentals of Computing **and** CSCI 1411 - Fundamentals of Computing Laboratory
- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3382 - Statistical Theory

Take 9 credits (3 courses) of additional upper-division (3000-level or higher) MATH courses.

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- MTED 4300 - Curriculum and Methods for Teaching Mathematics

- MTED 4301 - Assessment and Equity in Mathematics Instruction
- STME 4001 - Planning for Learning in Mathematics and Science
- STME 4051 - STEM Capstone: Secondary Education
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

Choose **one** of the following major courses (not to be repeated with any prior courses):

- MTED 4621 - A World of (Different) Numbers: Quantity and Operation
- MTED 4622 - Expanding Conceptions of Algebra
- MTED 4623 - Geometrical Ways Of Reasoning

Additional General Electives may be needed to reach the required 126 hours for the BA.

EDUCATION AND HUMAN DEVELOPMENT BA WITH SECONDARY SCIENCE LICENSE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in secondary science education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 7 through 12. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

The secondary science program ensures that you will develop deep content knowledge across a number of disciplines important to become a successful science teacher with courses in physics, biology, chemistry and geology. You will also be prepared with the methods and foundations coursework that will make you a highly effective, innovative and compassionate secondary science teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU

Denver graduates often go on to acquire positions in educational leadership as their careers progress.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Secondary Science Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum of C- is required for all Science content courses.
5. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Secondary Science Education requirements unless otherwise specified.

6. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
7. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Secondary Science Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- SCED 4050 - Introduction to Science Teaching and Learning
- SPED 4400 - Universal Design for Learning (UDL)
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 4020 - Responsive Classroom Communities *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following content courses (minimum grade C- or higher):

- MATH 1110 - College Algebra (or higher)
- BIOL 2051 - General Biology I
- BIOL 2061 - General Biology II
- CHEM 2031 - General Chemistry I
- CHEM 2061 - General Chemistry II
- GEOL 1073 - Physical Geology: Surface Processes
- GEOL 1074 - Physical Geology: Surface Processes Laboratory
- PHYS 2010 - College Physics I **or** PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2020 - College Physics II **or** PHYS 2331 - General Physics II: Calculus-Based

Choose a track and take all the required content courses for that track.

Biology Track

- BIOL 2071 - General Biology Laboratory I
- BIOL 2081 - General Biology Laboratory II

- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2068 - General Chemistry Laboratory II

Take **two** additional upper-division (3000-level or above) BIOL courses (minimum of 6 credits)

Chemistry Track

- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2068 - General Chemistry Laboratory II

Take **two** additional upper-division (3000-level or above) CHEM courses (minimum of 6 credits)

Environmental Sciences/Geology Track

- BIOL 2071 - General Biology Laboratory I **or** CHEM 2038 - General Chemistry Laboratory I
- BIOL 2081 - General Biology Laboratory II **or** CHEM 2068 - General Chemistry Laboratory II

Take **two** additional upper-division (3000-level or above) ENVS or GEOL courses (minimum of 6 credits)

Physics Track

- PHYS 2321 - General Physics Lab I
- PHYS 2341 - General Physics Lab II

Take **two** additional upper-division (3000-level or above) PHYS courses (minimum of 6 credits)

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- SCED 4400 - Theory and Pedagogy of Science Learning
- SCED 4401 - Inquiry Science Pedagogy and Practices
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- STME 4001 - Planning for Learning in Mathematics and Science
- STME 4051 - STEM Capstone: Secondary Education
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II

- UEDU 4933 - Internship & Lrng Comm III

Additional General Electives hours may be needed to reach the required 126 hours for the BA.

EDUCATION AND HUMAN DEVELOPMENT BA WITH SECONDARY SCIENCE LICENSE - RURAL PARTNERSHIP WITH OTERO JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in secondary science education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 7 through 12. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

We will prepare you to become a highly effective, innovative and compassionate secondary science teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

This program is a rural partnership with Otero Junior College (OJC) in La Junta, Colorado. Students complete the first two years of the program at OJC to complete an Associate of Arts degree and then transfer to CU Denver to complete their final two years to complete the BA - EDHD Secondary Science Education degree. During the final two years, students complete CU Denver coursework remotely from La Junta and are not required to travel to Denver. Advising is provided during all four years of the program, whether students are OJC or CU Denver students.

Coursework is delivered in a variety of ways, including online, video conferencing, in-person in La Junta, and fieldwork in rural Colorado in and around La Junta.

Program Delivery

- This is an on-campus program in La Junta with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum total of 124 semester hours for the EDHD Secondary Science Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Secondary Science Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.

6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Students will receive transfer credit for **all** of the following content and major requirements:

Note: Courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better. Students who do not have a B- or better in the specified courses must consult with their advisors about a plan to retake the course or complete additional work.

- MATH 1110 - College Algebra (or higher)
- BIOL 2051 - General Biology I
- BIOL 2071 - General Biology Laboratory I
- BIOL 2061 - General Biology II
- BIOL 2081 - General Biology Laboratory II
- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II
- PHYS 2010 - College Physics I **or** PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2020 - College Physics II **or** PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II
- GEOL 1073 - Physical Geology: Surface Processes
- GEOL 1074 - Physical Geology: Surface Processes Laboratory
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- EDHD 1930 - Community Based Field Experience & Seminar *
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *

Take **all** of the following Education and Human Development - Elementary Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *

- CLDE 4020 - Responsive Classroom Communities *
- SPED 4400 - Universal Design for Learning (UDL)
- SCED 5500 - The Nature of Science **or** SCED 6110 - Science and Math Curriculum Studies
- SCED 5350 - Issues and Trends in Science Education **or** SCED 5340 - Equity & Culture in Science Education: Local/Global
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following Professional year courses (a minimum grade of B- is required in each course):

- UEDU 4040 - Planning for Learning
- LCRT 4100 - Secondary Literacy Instruction and Assessment
- SCED 4400 - Theory and Pedagogy of Science Learning
- SCED 4401 - Inquiry Science Pedagogy and Practices
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment **or** STME 4051 - STEM Capstone: Secondary Education
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

EDUCATION AND HUMAN DEVELOPMENT BA WITH SECONDARY SOCIAL STUDIES LICENSE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in Social Studies education. They will provide you with a robust knowledge base and relevant learning experiences in transforming deep

content knowledge into learning experiences for youth across multiple cultural contexts as it relates to teaching youth in grades 7 through 12. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnering with schools to prepare teachers.

The secondary Social Studies program ensures that you will develop deep content knowledge across a number of disciplines important to become a successful Social Studies teacher with courses in history, political science, geography, economics and more. You will also be prepared with the methods and foundations coursework that will make you a highly effective, innovative and compassionate secondary Social Studies teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Secondary Social Studies Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses,

all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)

4. A minimum of C- is required for all content courses.
5. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Secondary Social Studies Education requirements unless otherwise specified.
6. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
7. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Secondary Social Studies Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better

- CLDE 2000 - CLDE Foundations
- EDFN 1000 - Equality, Rights & Education
- HDFR 3050 - Children's Thinking and Assessment
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- SPED 4400 - Universal Design for Learning (UDL)
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 4020 - Responsive Classroom Communities *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following content courses (minimum grade C- or higher):

- HIST 1361 - U.S. History to 1876
- HIST 1362 - U.S. History Since 1876
- HIST 1026 - World History Since 1500
- HIST 3601 - Colorado History
- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- PSYC 1000 - Introduction to Psychology I

- PSYC 1005 - Introduction to Psychology II
- PSCI 1101 - American Political System
- GEOG 1202 - Introduction to Physical Geography
- GEOG 1302 - Introduction to Human Geography
- ANTH 2102 - Culture and the Human Experience
- SOCY 1001 - Understanding the Social World

Take 6 credits (2 courses) of additional upper-division (3000-level or higher) content courses from any of the following prefixes: ANTH, ECON, ETST, GEOG, HIST, PSCI, PSYC, SOCY.

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4100 - Secondary Literacy Instruction and Assessment
- UEDU 4040 - Planning for Learning
- UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed
- UEDU 4464 - Methods of Teaching Social Studies
- UEDU 4465 - Methods of Teaching History
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

Additional General Electives hours may be needed to reach the required 126 hours for the BA.

EDUCATION AND HUMAN DEVELOPMENT BA, WITH ELEMENTARY EDUCATION LICENSE - RURAL PARTNERSHIP WITH TRINIDAD STATE JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in Elementary education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, and supporting English language learners, as well as technology as it relates to teaching children in grades kindergarten through sixth grade. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnerships with local school districts.

We will prepare you to become a highly effective, innovative and compassionate Elementary teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

This program is a rural partnership with Trinidad State Junior College (TSJC) in campuses in Trinidad, Colorado. Students complete the first two years of the program at TSJC to complete an Associate of Arts degree and then transfer to CU Denver to complete their final two years to complete the BA - EDHD degree with an Elementary teaching license. During the final two years, students complete CU Denver coursework remotely from Trinidad and are not required to travel to Denver. Advising is provided during all four years of the program, whether students are TSJC or CU Denver students. Coursework is delivered in a variety of ways, including online, video conferencing, in-person in Trinidad, and fieldwork in rural Colorado in and around Trinidad.

Program Delivery

- This is an on-campus program in La Junta with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements

- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Elementary Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Elementary Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Students will receive transfer credit for **all** of the following major requirements:

Note: Courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better. Students who do not have a B- or better in the specified courses must consult with their advisors about a plan to retake the course or complete additional work.

- EDHD 1930 - Community Based Field Experience & Seminar *
- HDFR 2110 - Child Ecology
- EDFN 1000 - Equality, Rights & Education
- INTE 2000 - Digital Teaching and Learning
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *

Take **all** of the following Education and Human Development - Elementary Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- EDHD 2930 - Learning & Development Field Experience & Seminar * (2 Credits)
- LCRT 3720 - Introduction to Writing Development and Teaching
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- CLDE 2000 - CLDE Foundations
- EDHD 3930 - Diverse Learners Field Experience & Seminar *
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM
- SPED 4300 - Family, Professional, and Community Collaboration
- CLDE 4020 - Responsive Classroom Communities *
- MTED 3040 - Mathematics for Elementary Teachers *
- SPED 4400 - Universal Design for Learning (UDL)

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- LCRT 4001 - Elementary Literacy Instruction and Assessment Part 2
- MTED 4002 - Elementary Mathematics Teaching I
- MTED 4003 - Elementary Mathematics Teaching II
- SCED 4004 - Elementary Science Teaching
- UEDU 4040 - Planning for Learning
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

EDUCATION AND HUMAN DEVELOPMENT, EARLY

CHILDHOOD EDUCATION BA - LICENSURE TRACK

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Early Childhood Education (ECE) track in the Education and Human Development major has a strong focus on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn with innovative faculty members who are locally and nationally recognized for their research in early childhood education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, supporting dual language learners, inclusive and engaging classroom and curricular design and assessment and documentation of young children's learning. At the same time, you will benefit from strong school and community partnerships that are unmatched in the state. All ECE track students have the opportunity to take all required courses to fulfill the State of Colorado's Director qualifications and become leaders in the field of early learning.

The ECE track has two options: Licensure and Non-licensure.

Licensure track

Students who select the 126 credit hour licensure track fulfill all requirements for a license to teach children Birth-Age 8 in Colorado's school districts and community-based early childhood centers. This track prepares students to become teachers of children up through third grade. Field-based experiences take place in the School of Education's Professional Development network of partner schools.

Students in this track have the opportunity to apply for the BAMA during their junior year. The BAMA allows students to take 9 credits of their professional year program at the graduate level and apply them to one of 8 MA degrees in the SEHD.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend and online courses.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Early Childhood Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year, is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Early Childhood Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Early Childhood Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - Foundations of Culturally & Linguistically Diverse Education
- ECED 4650 - Dual Language Learners Learning and Development
- ECED 4060 - Working with Families, Professionals, and Communities

- EDFN 1000 - Equality, Rights & Education
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- HDFR 2110 - Child Ecology **or** HDFR 3050 - Children's Thinking and Assessment
- INTE 2000 - Digital Teaching and Learning
- LCRT 3720 - Introduction to Writing Development and Teaching
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- MTED 3040 - Mathematics for Elementary Teachers *
- ECED 2000 - Early Childhood Education as a Profession
- ECED 4030 - Nutrition, Health, and Safety
- ECED 4102 - Developmentally Appropriate Curriculum Methods and Techniques
- ECED 4040 - Administrative Seminar
- ECED 4070 - Development and Education of Infant and Toddlers
- ECED 4200 - Assessment for Early Childhood Classrooms
- ECED 4202 - Child Guidance and Classroom Community
- EDHD 1930 - Community Based Field Experience & Seminar *
- ECED 2930 - Infant & Toddler Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *

Take **all** of the following Professional Year courses (a grade of B- or better is required in each course):

- ECED 4300 - Exceptional Learners in the Early Childhood Classroom **or** SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms
- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- ECED 4010 - Inquiry and the Disciplines **or** UEDU 4040 - Planning for Learning
- ECED 4020 - Science for P-2 Classrooms **or** SCED 4004 - Elementary Science Teaching
- MTED 4002 - Elementary Mathematics Teaching I
- ECED 4931 - Internship I & Collaborative Learning Community
- ECED 4932 - Internship II & Collaborative Learning Community
- ECED 4933 - Internship III & Collaborative Learning Community (taken for a total of 6 credits)
- ECED 4050 - Early Childhood Education Capstone: Planning, Instruction & Assessment **or** UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment

Additional General Electives hours may be needed to reach the required 126 hours for the BA.

Non-Licensure track

A 120 credit hour track is ideal for students who currently and/or intend to work in community-based early childhood environments that serve children from infancy-age five years is also available.

EDUCATION AND HUMAN DEVELOPMENT, EARLY CHILDHOOD EDUCATION BA - NON-LICENSURE TRACK

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Early Childhood Education (ECE) track in the Education and Human Development major has a strong focus on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn with innovative faculty members who are locally and nationally recognized for their research in early childhood education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, supporting dual language learners, inclusive and engaging classroom and curricular design and assessment and documentation of young children's learning. At the same time, you will benefit from strong school and community partnerships that are unmatched in the state.

Non-Licensure track

This 120 credit hour track is ideal for students who currently and/or intend to work in community-based early childhood environments that serve children from infancy-age five years. Courses include field-based experiences that can take place in settings where students currently work.

Students in this track have the opportunity to apply for the BAMA during their junior year. The BAMA allows students to take 9 credits of their professional year program at the graduate level and apply them to the ECE MA degree.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 120 semester hours for the EDHD - Early Childhood Education Non-Licensure Track
2. A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Early Childhood non-licensure requirements unless otherwise specified.
3. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following courses:

- ECED 2000 - Early Childhood Education as a Profession
- ECED 4030 - Nutrition, Health, and Safety
- ECED 4040 - Administrative Seminar
- ECED 4060 - Working with Families, Professionals, and Communities
- ECED 4102 - Developmentally Appropriate Curriculum Methods and Techniques
- ECED 4202 - Child Guidance and Classroom Community
- ECED 4300 - Exceptional Learners in the Early Childhood Classroom **or** SPED 4030 - Understanding Disability
- ECED 4650 - Dual Language Learners Learning and Development
- ECED 4010 - Inquiry and the Disciplines
- ECED 4070 - Development and Education of Infant and Toddlers
- ECED 4200 - Assessment for Early Childhood Classrooms
- EDFN 1000 - Equality, Rights & Education
- INTE 2000 - Digital Teaching and Learning
- HDFR 2110 - Child Ecology **or** HDFR 3050 - Children's Thinking and Assessment

- CLDE 2000 - CLDE Foundations
- MTED 3040 - Mathematics for Elementary Teachers
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- EDHD 1930 - Community Based Field Experience & Seminar
- EDHD 2930 - Learning & Development Field Experience & Seminar
- ECED 2930 - Infant & Toddler Field Experience & Seminar
- ECED 4933 - Internship III & Collaborative Learning Community
- ECED 4934 - Extended Internship & Collaborative Learning Community

Take **two** of the following courses:

- HDFR 3020 - Black and Latino Children in Families and Schools
- HDFR 4001 - Families and Parenting
- HDFR 4010 - Family and Cultural Diversity
- HDFR 4040 - Latino Families in School and Communities
- HDFR 4260 - Family Systems and Social Justice

Additional General Electives hours may be needed to reach the required 120 hours for the BA.

An ECE Licensure track is also available for students interested in fulfilling the State of Colorado's ECE licensure requirements.

Students who select the 126 credit hour licensure track fulfill all requirements for a license to teach children Birth-Age 8 in Colorado's school districts and community-based early childhood centers. This track prepares students to become teachers of children up through third grade. Field-based experiences take place in the School of Education's Professional Development network of partner schools. Please see Early Childhood Education BA - Licensure Track for more information.

EDUCATION AND HUMAN DEVELOPMENT, ELEMENTARY EDUCATION BA - RURAL

PARTNERSHIP WITH OTERO JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in elementary education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, and supporting English language learners, as well as technology as it relates to teaching children in grades kindergarten through sixth grade. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnerships with local school districts.

We will prepare you to become a highly effective, innovative and compassionate elementary teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

This program is a rural partnership with Otero Junior College (OJC) in La Junta, Colorado. Students take the first two years of the program at OJC to complete an Associate of Arts degree and then transfer to CU Denver to complete the BA - EDHD Elementary Education degree in the final two years. During the final two years, students complete CU Denver coursework remotely from La Junta and are not required to travel to Denver. Advising is provided during all four years of the program, whether students are OJC or CU Denver students. Coursework is delivered in a variety of ways, including online, video conferencing, in-person in La Junta, and fieldwork in rural Colorado in and around La Junta.

Program Delivery

- This is an on-campus program in La Junta with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Elementary Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all courses applying to EDHD - Elementary Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Students will receive transfer credit for **all** of the following major requirements:

Note: Courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better. Students who do not have a B- or better in the specified courses must consult with their advisors about a plan to retake the course or complete additional work.

- EDHD 1930 - Community Based Field Experience & Seminar *
- HDFR 2110 - Child Ecology
- EDFN 1000 - Equality, Rights & Education
- INTE 2000 - Digital Teaching and Learning

- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *

Take **all** of the following Education and Human Development - Elementary Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- EDHD 2930 - Learning & Development Field Experience & Seminar * (2 credits)
- LCRT 3720 - Introduction to Writing Development and Teaching
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- CLDE 2000 - CLDE Foundations
- EDHD 3930 - Diverse Learners Field Experience & Seminar *
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM
- SPED 4300 - Family, Professional, and Community Collaboration
- CLDE 4020 - Responsive Classroom Communities *
- MTED 3040 - Mathematics for Elementary Teachers *
- SPED 4400 - Universal Design for Learning (UDL)

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- LCRT 4001 - Elementary Literacy Instruction and Assessment Part 2
- MTED 4002 - Elementary Mathematics Teaching I
- MTED 4003 - Elementary Mathematics Teaching II
- SCED 4004 - Elementary Science Teaching
- UEDU 4040 - Planning for Learning
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

EDUCATION AND HUMAN DEVELOPMENT, ELEMENTARY

EDUCATION BA WITH CLDE ADDED ENDORSEMENT

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in elementary education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, and supporting English language learners, as well as technology as it relates to teaching children in grades kindergarten through sixth grade. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnerships with local school districts.

We will prepare you to become a highly effective, innovative and compassionate elementary teacher skilled in improving student performance and reaching the needs of today's diverse learners in a variety of school settings. You will have the skills to be a teacher leader. CU Denver graduates often go on to acquire positions in educational leadership as their careers progress.

A unique feature of this pathway is that you will be able to add a Culturally Linguistically Diverse Education, CLDE, endorsement to your credentials. Essentially, you will leave this program with both the Elementary Education License and CLDE Endorsement. This means you are prepared to teach K-6 and culturally & linguistically diverse students, making you highly employable and desirable to schools!

Students in this track have the opportunity to apply for the BAMA during their junior year. The BAMA allows students to take 9 credits of their professional year program at the graduate level and apply them to one of 8 MA degrees in the SEHD.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 126 semester hours for the EDHD Elementary Education Track.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, major, and elective courses, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD - Elementary Education requirements unless otherwise specified.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Education and Human Development - Elementary Education major courses:

Note: courses marked with an asterisk require a grade of B- or better; all other courses require a grade of C or better.

- CLDE 2000 - CLDE Foundations
- CLDE 3680 - Spanish for Educators
- CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM

- CLDE 4020 - Responsive Classroom Communities *
- CLDE 4700 - Social Studies for Multilingual Learners
- EDFN 1000 - Equality, Rights & Education
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- HDFR 2110 - Child Ecology **or** HDFR 3050 - Children's Thinking and Assessment
- INTE 2000 - Digital Teaching and Learning
- LCRT 3720 - Introduction to Writing Development and Teaching
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- MTED 3040 - Mathematics for Elementary Teachers *
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- SPED 4300 - Family, Professional, and Community Collaboration
- SPED 4400 - Universal Design for Learning (UDL)
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- LCRT 4001 - Elementary Literacy Instruction and Assessment Part 2
- MTED 4002 - Elementary Mathematics Teaching I
- MTED 4003 - Elementary Mathematics Teaching II
- SCED 4004 - Elementary Science Teaching
- UEDU 4040 - Planning for Learning
- UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment
- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III

Embedded into the program is the coursework for a added endorsement in CLDE. In order to earn the CLDE endorsement, students must complete each of the courses below with a minimum grade of B-, as well as assemble a CLDE portfolio.

- CLDE 2000 - Foundations of CLDE
- CLDE 3680 - Spanish for Elementary Educators
- CLDE 3830 - Culturally and Linguistically Responsive Teaching in STEM
- CLDE 4700 - Social Studies for Multilingual Learners

- EDHD 2930 - Learning and Development Field Experience and Seminar
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- CLDE 4020 - Responsive Classroom Communities
- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- LCRT 4001 - Elementary Literacy Instruction and Assessment Part 2

Additional General Electives hours may be needed to reach the required 126 hours for the BA

EDUCATION AND HUMAN DEVELOPMENT, SPECIAL EDUCATION BA (ELEMENTARY EDUCATION ENDORSEMENT)

Introduction

Please click [here](#) to see School of Education & Human Development information.

The need for highly qualified, culturally and linguistically responsive special education teachers is on the rise in Colorado and the nation. According to the United States Bureau of Labor Statistics, it is estimated that nearly 280,000 special education teaching positions will need to be filled over the next decade (2016). The Special Education track of CU Denver's bachelor's degree in Education and Human Development prepares students to step into these roles and address the exceptional learning needs of individuals ages five to 21.

The Special Education program combines cutting-edge research with real classroom experiences. You will learn from faculty who are locally, nationally and internationally recognized for their research and innovation. They will provide you with critical knowledge and interventions to teach students with exceptional learning needs. You will be able to apply your new knowledge through frequent, powerful hands-on classroom experiences, and benefit from the advantage of our rich 20-year history of school and community partnerships.

The program is designed to enhance your ability to effectively support diverse, urban students with disabilities in K-12 public schools and alternative settings. Faculty members will foster your growth as a teacher and educational leader who promotes inclusion and equity for all. This program strives to help you:

- Gain a holistic understanding of special education

- Collaborate with schools and communities
- Engage in culturally and linguistically responsive teaching and leadership\

A unique feature of this pathway is that you will be able to add the Colorado Department of Education's elementary endorsement to your credentials. Essentially, you'll leave this program with both the Special Education License **and** Elementary Education Endorsement through the Colorado Department of Education. This means you are prepared to teach Special Education AND K-6, making you highly employable and desirable to schools!

Students in this track have the opportunity to apply for the BAMA during their junior year. The BAMA allows students to take 9 credits of their professional year program at the graduate level and apply them to one of 8 MA degrees in the SEHD.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend and online courses.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn this 126 credit hour BA, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements. Students should declare their intent to pursue this degree as early as possible to avoid taking classes that not count toward their degree.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 126 semester hours for the Education and Human Development, EDHD, - BA Special Education Track
2. Students must take the appropriate Praxis Test during their Junior year to complete licensure requirements.
3. An application process is required to continue into your last year/Professional Year. After successfully completing the first 3 years of the program, all students

must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)

4. A minimum GPA of 2.0, grade of C or better, is required for all major courses applying to EDHD BA Special Education.
5. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
6. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following EDHD - BA Special Education major courses, a grade of C or better is required:

Note: Courses with an asterisk require a grade of B- or better

- CLDE 2000 - CLDE Foundations
- CLDE 4020 - Responsive Classroom Communities *
- EDFN 1000 - Equality, Rights & Education
- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education *
- HDFR 2110 - Child Ecology **or** HDFR 3050 - Children's Thinking and Assessment
- INTE 2000 - Digital Teaching and Learning
- LCRT 3720 - Introduction to Writing Development and Teaching
- LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade
- MTED 3040 - Mathematics for Elementary Teachers*
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms *
- EDHD 1930 - Community Based Field Experience & Seminar *
- EDHD 2930 - Learning & Development Field Experience & Seminar *
- EDHD 3930 - Diverse Learners Field Experience & Seminar *
- SPED 4151 - Slashing Stigmas: Promoting Positive Behaviors
- SPED 4300 - Family, Professional, and Community Collaboration
- SPED 4400 - Universal Design for Learning (UDL)
- SPED 4740 - Intersections of Literacy, Culture, & Exceptionality **or** CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM
- SPED 4780 - Literacy Intervention for Exceptional Learners

Take **all** of the following Professional Year courses (a grade of B- or better is required in each course):

- LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1
- MTED 4002 - Elementary Mathematics Teaching I
- MTED 4003 - Elementary Mathematics Teaching II
- SPED 4010 - Intentional Interventions for Exceptional Learners
- SPED 4140 - Assessment: Inquiry, Instruction, & Intervention
- SPED 4500 - Transition and Secondary Methods in Special Education
- UEDU 4040 - Planning for Learning
- SPED 4931 - Internship & Learning Community I
- SPED 4932 - Internship & Learning Community II
- SPED 4933 - Internship & Learning Community III

Additional General Electives hours may be needed to reach the required 126 hours for the EDHD - BA Special Education.

ELECTRICAL ENGINEERING BS

Introduction

Please click [here](#) to see Electrical Engineering department information.

Program Objectives

The educational objectives of the electrical engineering undergraduate program are to produce graduates who, within a few years of graduation, will:

- Demonstrate professional advancement as productive practicing engineers who continuously develop their technical expertise, as demanded by the rapidly changing technologies.
- Attain enhanced and broadened knowledge via graduate education in either engineering or other fields such as science, mathematics, business, medicine, and law.

These objectives are consistent with the mission of the University of Colorado Denver, congruent with the goals of the College of Engineering, Design and Computing and reflective of the mission of the Department of Electrical Engineering.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Engineering, Design and Computing Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. The particular curriculum to be satisfied by each student is the one published in the catalog current at the time of his/her 30-hour senior checkout.
2. A graduation agreement should be requested by each student before completing registration for his/her last semester.
3. All electrical engineering students must satisfactorily complete ELEC 4309, Senior Design Project I, and ELEC 4319, Senior Design Project II, in consecutive semesters.
4. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.
5. Students must maintain a minimum 2.0 GPA in all ELEC courses attempted.

Take all of the following Electrical Engineering courses:

- ENGR 1200 - Fundamentals of Engineering Design Innovation
- ELEC 1510 - Logic Design
- ELEC 1520 - Programming for Electrical Engineers
- ELEC 2132 - Circuit Analysis I
- ELEC 2142 - Circuit Analysis II
- ELEC 2520 - Embedded Systems Engineering 2
- ELEC 2531 - Logic Laboratory
- ELEC 2651 - Signal Processing
- ELEC 3133 - Electromagnetic Fields

- ELEC 3164 - Energy Conversion
- ELEC 3225 - Electronics II (beginning Spring 2021, this will be a 4 credit course)
- ELEC 3316 - Signals and Systems
- ELEC 3520 - Intelligent Systems: IoT & Cyber-Physical Systems
- ELEC 3724 - Energy Conversion Laboratory
- ELEC 3817 - Engineering Probability and Statistics
- ELEC 3900 - Circuit Design and Fabrication Laboratory
- ELEC 4309 - Senior Design Project I
- ELEC 4319 - Senior Design Project II
Note: Effective Spring 2020: Senior Design I will be offered only during fall semesters; Senior Design II will be offered only during spring semesters.
- ENGR 3400 - Technology and Culture

Take one Professional Elective courses. Professional electives may be selected from an approved list of upper-division or graduate-level courses or cooperative education. The electrical engineering advisor must be consulted prior to the selection of these electives.

Take **seventeen** semester hours from the following lists. At least **two** laboratories with an associated lecture course must be completed.

Control Systems

- ELEC 4136 - Control Systems Analysis
- ELEC 4276 - Digital Control Systems
- ELEC 4406 - Control Systems Laboratory
- ELEC 4466 - Adaptive Control System Design

Micro-electronics and VLSI

- ELEC 4005 - IC Design
- ELEC 4025 - Device Electronics
- ELEC 4555 - VLSI Circuit Simulation
- ELEC 5455 - Computer Methods for Device Electronics

Communications

- ELEC 4247 - Communication Theory
- ELEC 4248 - Digital Communication Systems

Fields, Waves and Optics

- ELEC 4133 - Advanced Electromagnetic Fields
- ELEC 4134 - Introduction to Microwave Circuit Design
- ELEC 4333 - Introduction to Computational Electromagnetics
- ELEC 4373 - Optical Engineering
- ELEC 4423 - Radio Frequency Laboratory

Computer Engineering and Embedded System Design

- ELEC 4501 - Microprocessor Based Design
- ELEC 4511 - Hardware-Software Interface
- ELEC 4521 - Microprocessor Laboratory
- ELEC 4561 - Hardware-Software Lab
- ELEC 4678 - Quantum Electronics
- ELEC 4723 - High Performance Computer Architecture

Energy and Power Systems

- ELEC 4164 - Electric Drive Systems
- ELEC 4170 - Electric Drive Systems Laboratory
- ELEC 4174 - Power Electronic Systems
- ELEC 4184 - Power Systems Analysis
- ELEC 4444 - Power Systems Laboratory
- ELEC 4474 - Power Electronics Laboratory

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3195 - Linear Algebra and Differential Equations **or**
- MATH 3191 - Applied Linear Algebra **and**
- MATH 3200 - Elementary Differential Equations

Take **all** of the following Science courses:

- ENGR 1130 - Chemistry for Engineers
- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II (optional)

ENGLISH WRITING, RHETORIC, AND TECHNOLOGY BA

Introduction

Please click [here](#) to see English department information.

The English Writing, Rhetoric and Technology major asks students to take one of two introductory courses, a multi-media course (two course options), a language theory/sociolinguistics course (three course option), and two advanced topics courses (with a range of options). The remainder of the degree is seven courses chosen from a long list, which can include two courses outside the English Writing focus (such as creative writing workshops, film courses, or courses in related majors). For all the details, please review the advising sheets for the English Writing, Rhetoric, and Technology major. Especially designed for future writers, the major offers a wide range of intensive writing experiences, combining such areas as rhetoric, and professional, general, and creative writing.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and their CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This program offers courses both on-campus and online. You can take the English Writing, Rhetoric, and Technology Major fully online or fully on campus. Most of our students, however, end up taking a mix of online and on-campus courses in order to juggle changing work schedules and busy lives. You can decide what's best for you.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum

- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 36 ENGL credit hours toward the major.
2. Students must complete a minimum of 30 upper division (3000-level and above) ENGL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 ENGL upper division (3000-level and above) credits hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. ENGL 1010, 1020 and 2030 do not count toward the major, nor does CLEP or AP credit.
2. Students may not count more than 56 credit hours of ENGL credit toward the major; double majors in English Writing and English are exempt and are required to complete 63 credits of ENGL credit hours.
3. A maximum of 6 credit hours of Internship/cooperative education courses may be counted toward the major for students who have completed 60 or more credit hours. Internships count as upper-division electives.
4. Courses may not be used more than once between the Required Course Area and Electives. The exception is English 4190. Two 4190s are required in the Required Course Area, and one additional 4190 can count as an Elective Course. A maximum of three 4190s may count, in total and all must have different topics in order to count.
5. Courses toward the major may not be counted toward an English minor (Literature, Writing, Creative Writing or Film Studies).
6. A minimum of 15 upper division (3000-level and above) ENGL credit hours must be taken with CU Denver faculty.

Take **one** of the following courses:

- ENGL 2060 - Introduction to Writing & Digital Studies
- ENGL 2070 - Grammar, Rhetoric and Style

Take **one** the following Multimedia courses:

- ENGL 3084 - Multimedia Composition
- ENGL 4701 - Multimedia in the Community

Take **one** of the following Language Study courses:

- ENGL 3160 - Language Theory
- ENGL 4601 - Principles and Practices of Second Language Acquisition (by instructor's permission)
- ENGL 4651 - Second Language Writing (by instructor's permission)

Take **two** of the Advanced Writing Experience courses (must be with different topics):

- ENGL 4190 - Advanced Topics in Writing & Digital Studies
- ENGL 4190 - Advanced Topics in Writing & Digital Studies

Take **21 hours** (seven courses) of Elective Courses in Writing, Rhetoric, and Technology:

**A course does not count here and in the Required Course Areas above. The exception is English 4190. Two 4190s are required in the above section (A: Required Course Areas), and one additional 4190 can count below (in B: Elective Courses), if elected. (A maximum of three 4190s, in total.)

- ENGL 2060 - Introduction to Writing & Digital Studies
- ENGL 2070 - Grammar, Rhetoric and Style
- ENGL 3084 - Multimedia Composition
- ENGL 3154 - Technical Writing
- ENGL 3160 - Language Theory
- ENGL 3170 - Business Writing
- ENGL 3405 - Topics in Writing
- ENGL 3416 - Magazine Writing
- ENGL 3939 - Internship
- ENGL 4175 - Writing in the Sciences
- ENGL 4180 - Argumentation and Logic
- ENGL 4190 - Advanced Topics in Writing & Digital Studies
- ENGL 4280 - Proposal and Grant Writing
- ENGL 4601 - Principles and Practices of Second Language Acquisition (by instructor's permission)
- ENGL 4651 - Second Language Writing (by instructor's permission)
- ENGL 4701 - Multimedia in the Community
- ENGL 4740 - Honors in Writing
- ENGL 4995 - Senior Writing Project

- Up to **two** courses that are either 3000- or 4000-level courses in the English Department (such as creative writing workshops, film courses, or literature courses), or up to two writing courses in other departments (prior approval from an advisor required for courses outside of English).

ENGLISH, CREATIVE WRITING OPTION BA

Introduction

Please click [here](#) to see English department information.

The course of study offered by the Department of English is designed to develop a student's ability to read literature responsibly and imaginatively, to foster an understanding and appreciation of our literary inheritance, and to provide the historical perspective from which to evaluate contemporary writing and to produce it. Students who complete the program in English are expected to have mastered the ability to express their ideas in creative work.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and their CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major
- Students planning to major in English must consult with an advisor as soon as possible.
- Students may choose only one of the three options in the English major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 39 ENGL credit hours.
2. Students must complete a minimum of 27 upper division (3000-level and above) ENGL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 ENGL upper-division (3000-level and above) credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. ENGL 1010, 1020 and 2030 do not apply to the major.
2. Internship/cooperative education courses may be counted toward the major for students who have completed over 60 credit hours.
3. Students are not to exceed 56 English credit hours (any level).
4. Double majors in English and English Writing are exempt from the 56-hour rule and must complete 63 hours total for both majors.
5. The English Department also offers a minor in, English Writing Rhetoric & Technology. Courses counted in a minor cannot be counted toward the major.
6. A minimum of 15 upper-division (3000-level and above) ENGL credit hours must be taken with CU Denver faculty.
7. Latin Honors may be earned by participating in the department's Honors Program. You are encouraged to begin the program in your junior year. The program requires additional coursework and affords you the opportunity to work individually with the professor of your choice. Handouts are available in the English office.

Take the following **required** course:

- ENGL 2450 - Introduction to Literature

Complete the following **poetry or fiction** track:

Poetry Track

Take **all** of the following courses:

- ENGL 3020 - Poetry Workshop
- ENGL 3050 - Fiction Workshop
- ENGL 4025 - Advanced Poetry Workshop
- ENGL 4160 - Poetics
- ENGL 4820 - Senior Poetry Workshop

Take **one** of the following courses:

- ENGL 4080 - History of English Language
- ENGL 4166 - History of American Poetry
- ENGL 4320 - History of Poetry in English
- ENGL 4801 - Special Topics in Creative Writing: Poetry

Fiction Track

Take **all** of the following courses:

- ENGL 3020 - Poetry Workshop
- ENGL 3050 - Fiction Workshop
- ENGL 4055 - Advanced Fiction Workshop
- ENGL 4610 - Narrative: Form and Theory
- ENGL 4850 - Senior Fiction Workshop

Take **one** of the following courses:

- ENGL 4200 - Survey of the English Novel to 1900
- ENGL 4220 - African-American Literature
- ENGL 4230 - The American Novel
- ENGL 4236 - The American Short Story
- ENGL 4802 - Special Topics in Creative Writing: Fiction

Electives

Take **six** upper division 3000- or 4000-level ENGL courses, unless previously taken. The courses below are strongly recommended.

- * ENGL 3001 - Critical Writing
- * ENGL 3106 - Writing for Print Media
- * ENGL 3416 - Magazine Writing

- * ENGL 4800 - Special Topics in Creative Writing
- * ENGL 4810 - Literary Editing Practicum

ENGLISH, FILM STUDIES OPTION BA

Introduction

Please click [here](#) to see English department information.

The film studies option within the English major is designed to prepare students for a range of professional careers in areas, such as film criticism, video production and the teaching of film, as well as those students who plan to pursue graduate programs in film studies.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- Students planning to major in English must consult with an advisor as soon as possible.
- Students may choose only one of the three options in the English major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 39 ENGL credit hours.
2. Students must complete a minimum of 27 upper-division (3000-level and above) ENGL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 ENGL upper-division (3000-level or above) credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. ENGL 1010, 1020, and 2030 are not included in the major.
2. Internship/cooperative education courses may be counted toward the major for students who have junior standing or higher.
3. Students are not to exceed 56 English credit hours (any level).
4. Double majors in English and English Writing are exempt from the 56-hour rule and must complete 63 hours total for both majors.
5. Production courses must be taken through the College of Arts & Media (CAM). Equivalent screenwriting courses may also be taken through CAM.
6. Courses marked with an asterisk are repeatable if taken as a different genre/director/topic.
7. The English Department also offers a minor in English Writing & Rhetoric; Courses counted in a minor cannot be counted toward the major.
8. A minimum of 15 upper division (3000-level and above) ENGL credit hours must be taken with CU Denver faculty.
9. Latin Honors may be earned by participating in the department's Honors Program. You are encouraged to begin the program in your junior year. The program requires additional coursework and affords you the opportunity to work individually with the professor of your choice. Handouts are available in the English office.

Take **all** of the following courses:

- ENGL 2250 - Introduction to Film
- ENGL 3200 - From Literature to Film
- ENGL 3070 - Film History I
- ENGL 3080 - Global Cinema
- ENGL 4420 - Film Theory and Criticism

(note: students should complete 3070 or 3080 prior to enrolling in 4420)

Take **eight** of the following courses:

(**Six** of the **eight** courses must be at the 3000-level or above)

*Repeatable if a different genre/director/topic.

--Critical Studies--

- ENGL 1601 - Storytelling: Literature, Film, and Television
- ENGL 2450 - Introduction to Literature
- ENGL 3001 - Critical Writing
- ENGL 3075 - Film Genres *
- ENGL 3085 - Film Directors *
- ENGL 3300 - Topics in Film *
- ENGL 3415 - Screenwriting Workshop
- ENGL 3480 - Modern Drama
- ENGL 3520 - Religious Narratives
- ENGL 3661 - Shakespeare
- ENGL 3700 - American Literature to the Civil War
- ENGL 3750 - American Literature after the Civil War
- ENGL 3795 - Race and Ethnicity in American Literature
- ENGL 3798 - International Perspectives in Literature and Film
- ENGL 4000 - Studies of Major Authors
- ENGL 4001- Major Authors: Am. Lit
- ENGL 4002- Major Authors: Before 1650
- ENGL 4003- Major Authors: 1650-1900
- ENGL 4160 - Poetics
- ENGL 4166 - History of American Poetry
- ENGL 4200 - Survey of the English Novel to 1900
- ENGL 4210 - History of the English Novel II
- ENGL 4220 - African-American Literature
- ENGL 4230 - The American Novel
- ENGL 4235 - Faulkner
- ENGL 4236 - The American Short Story
- ENGL 4240 - Topics in Contemporary American Literature
- ENGL 4250 - Twentieth Century Fiction
- ENGL 4300 - History of British Drama
- ENGL 4320 - History of Poetry in English
- ENGL 4350 - History of American Drama
- ENGL 4400 - Old English I

- ENGL 4410 - Old English II: Beowulf
- ENGL 3450 - Contemporary Women Writers
- ENGL 4460 - Contemporary World Literature
- ENGL 4500 - Medieval Literature
- ENGL 4510 - Whores and Saints: Medieval Women
- ENGL 4520 - English Renaissance
- ENGL 4530 - Milton
- ENGL 4540 - Restoration and the 18th Century
- ENGL 4560 - English Romanticism
- ENGL 4580 - The Victorian Age
- ENGL 4600 - Modernism
- ENGL 4730 - Chaucer
- ENGL 4735 - Philosophy and Literature
- ENGL 4745 - Humanistic Writing About Medicine and Biology
- * ENGL 4770 - Topics in English: Film and Literature
- *ENGL 4771 - Topics in English Film and Lit: Film
- ENGL 4990 - Senior Writing Project in Creative Writing or Film Studies

ENGLISH, LITERATURE OPTION BA

Introduction

Please click [here](#) to see English department information.

The course of study offered by the Department of English is designed to develop a student's ability to read literature responsibly and imaginatively, to foster an understanding and appreciation of our literary inheritance, and to provide the historical perspective from which to evaluate contemporary writing. Careful study of the use of the English language also should help a student to resist the misuse and corruption of language in politics, the media, and elsewhere. Students who complete the program in English are expected to have mastered the ability to express their ideas in clear and succinct prose.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click here to go to information about declaring a major.
- Students planning to major in English must consult with an advisor as soon as possible.
- Students may choose only one of the three options in the English major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click here for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 39 ENGL credit hours.
2. Students must complete a minimum of 27 upper-division (3000-level and above) ENGL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 ENGL upper-division (3000-level and above) credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. ENGL 1010, 1020, and 2030 are not included in the major.
2. Internship/cooperative education courses may be counted toward the major for students who have completed over 60 credit hours.
3. Students are not to exceed 56 English credit hours (any level).
4. Double majors in English and English Writing are exempt from the 56-hour rule and must complete 63 hours total for both majors.

5. A minimum 15 upper-division (3000-level and above) ENGL credit hours must be taken with CU Denver faculty.
6. The English Department also offers a minor in Literature, Writing, Creative Writing, and Film Studies. Courses counted in a minor cannot be counted toward the major.
7. Latin Honors may be earned by participating in the department's Honors Program. You are encouraged to begin the program in your junior year. The program requires additional coursework and affords you the opportunity to work individually with the professor of your choice. Handouts are available in the English office.
8. Any of the following courses can be taken more than once, if the topic/title differs:
 - Any film or film theory course (Film History, director course, Lit. to Film, global etc.)
 - Any 3330 post-1900 topic (e.g., Lit. of the City, Detective Lit., Science Fiction, Memoir)
 - Any 4770 Topic post-1900 (e.g., Philosophy and Lit., Mental Health in Lit., Environmental Lit.)
 - Any 4000 Major Author or other major author course post-1900 (e.g., Nobel Laureates, Cather, Joyce)
 - Any women's lit. and/or feminist theory topics course
 - Any ENGL ethnic lit. topics course
 - Any ENGL identity topics course (e.g. LGBTQ Lit., Queer Theory)

Take **one** of the following courses:

- ENGL 1601 - Storytelling: Literature, Film, and Television
- ENGL 2600 - Literary Classics

Take **all** of the following courses:

- ENGL 2450 - Introduction to Literature
- ENGL 3001 - Critical Writing

Take **one** of the following American Literature courses:

- ENGL 3700 - American Literature to the Civil War
- ENGL 3750 - American Literature after the Civil War
- ENGL 4166 - History of American Poetry
- ENGL 4220 - African-American Literature
- ENGL 4230 - The American Novel
- ENGL 4236 - The American Short Story
- ENGL 4350 - History of American Drama
- ENGL 4001 - Major Authors: Am. Lit

- ENGL 4773 - Topics in English Film and Lit: Am. Lit

Take **two** of the following Pre-1650 courses:

- ENGL 3661 - Shakespeare
- ENGL 4500 - Medieval Literature
- ENGL 4510 - Whores and Saints: Medieval Women
- ENGL 4520 - English Renaissance
- ENGL 4730 - Chaucer
- ENGL 4002 - Major Author: Before 1650
- ENGL 4774 Topics in English Literature and Film: Before 1650

Take **two** of the following 1650-1900 courses:

- ENGL 3700 - American Literature to the Civil War
- ENGL 4200 - Survey of the English Novel to 1900
- ENGL 4300 - History of British Drama
- ENGL 4530 - Milton
- ENGL 4560 - English Romanticism
- ENGL 4580 - The Victorian Age
- ENGL 4003 - Major Author: 1650-1900
- ENGL 4775 - Topics in English Literature and Film: 1650-1900

Take **three** of the following Modern Literature and Culture courses:

- ENGL 3480 - Modern Drama
- ENGL 3750 - American Literature after the Civil War
- ENGL 4220 - African-American Literature
- ENGL 4250 - Twentieth Century Fiction
- ENGL 4460 - Contemporary World Literature
- ENGL 4600 - Modernism

Take two ENGL elective courses at any level.

ENTREPRENEURSHIP MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

The Jake Jobs Center's entrepreneurship curriculum incorporates instruction, mentoring, and support from outstanding Business School faculty, as well as from outside professionals with expertise in new business development. This major explores legal issues, social sector initiatives, new venture design, finance structuring, strategic web development, leadership, new product development and business plan creation. Students learn from case studies, classroom instruction, and guest lectures featuring successful entrepreneurs and renowned business leaders.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

Take **all** of the following required courses:

- ENTP 3200 - Essentials in Entrepreneurship
- ENTP 3230 - Small Business Accounting and Finance
- ENTP 3299 - Business Model Development & Planning

Take **three** 3000 or 4000-level ENTP electives.

ETHNIC STUDIES BA

Introduction

Please click [here](#) to see Ethnic Studies department information.

The skills and knowledge that students gain while pursuing a BA degree with a Major in Ethnic Studies at CU Denver are transferable to a variety of careers. In common with other liberal arts graduates, those with a degree in ethnic studies will be trained in creative and critical thinking, complex reasoning, and effective communication. In addition, ethnic studies graduates will have cultural competency skills that are highly valued by employers, who serve increasingly diverse clientele. Other occupations that employ many ethnic studies graduates include: law, teaching, journalism, marketing, community organizing and social work. Ethnic studies graduates also find work in non-profit agencies and in federal, state, and local government agencies.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program with some courses offered online.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 33 credits in ETST coursework.

2. Students must complete a minimum of 16 upper division (3000-level and above) ETST credit hours.
3. Students must earn a minimum grade of C- in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete 15 ETST credit hours with CU Denver faculty.

Take **all** of the following required courses:

- ETST 2000 - Introduction to Ethnic Studies
- ETST 2155 - African American History
- ETST 3108 - Chicano/a and Latino/a History
- ETST 3297 - Social History of Asian Americans
- ETST 3396 - History of the American Indian
- ETST 4960 - Capstone in Ethnic Studies

Take the following capstone course:

- ETST 4000 - Research Methods in Ethnic Studies

Take **four** Ethnic Studies Electives, courses include:

- ETST 2024 - Race and Ethnic Relations
- ETST 2105 - African American Contemporary Social Issues
- ETST 2115 - Genocide in the 21st Century: Darfur and Beyond
- ETST 2145 - The Gullah in Novel and Film
- ETST 2165 - Cultural Diversity Awareness in the Workplace
- ETST 2294 - Race and the Media
- ETST 2400 - Issues in Chicano/a Education
- ETST 2496 - American Indian Literature
- ETST 2606 - The American Indian Experience
- ETST 2840 - Independent Study: ETST
- ETST 2939 - Internship
- ETST 3002 - Ethnicity, Health and Social Justice
- ETST 3010 - Conference Participation
- ETST 3110 - Indigenous Studies
- ETST 3125 - Multiracial Families and Communities
- ETST 3129 - Contemporary Latin American Literature
- ETST 3211 - Hip Hop Music & Culture

- ETST 3216 - Federal Law and American Indians
- ETST 3224 - U.S. Middle East Culture and Religion
- ETST 3230 - African American Family
- ETST 3254 - Race and Ethnicity in the Inner City
- ETST 3272 - Global Media
- ETST 3274 - Power, Poverty, Culture
- ETST 3300 - Shamanic Traditions
- ETST 3307 - Selected Topics: Asian Americans
- ETST 3350 - Colonial Latin America
- ETST 3357 - Asian American Literature
- ETST 3365 - Aztlan in the United States: Chicano History from 1821
- ETST 3394 - Literature of Social Protest from an Ethnic Perspective
- ETST 3408 - Social Psychology of Latinos/as
- ETST 3567 - Asian American Women
- ETST 3574 - Topics in Ethnic Studies
- ETST 3616 - Selected Topics: American Indians
- ETST 3697 - Contemporary Asian American Experience
- ETST 3704 - Culture, Racism and Alienation
- ETST 3838 - History of the Mexican American in Colorado
- ETST 3840 - Independent Study: ETST
- ETST 3842 - Independent Study: ETST
- ETST 3939 - Internship
- ETST 3995 - Global Study Topics
- ETST 4000 - Research Methods in Ethnic Studies (if not taken above)
- ETST 4144 - Indigenous Political Systems
- ETST 4146 - Indigenous Politics
- ETST 4156 - The Arab-Israeli Peace Process
- ETST 4220 - African-American Literature
- ETST 4411 - Modern Mexico
- ETST 4515 - The African American in Politics
- ETST 4555 - International Women's Resistance
- ETST 4558 - Chicano and Latino Politics
- ETST 4574 - Special Topics
- ETST 4616 - Selected Topics: Chicanos/as and Latinos/as
- ETST 4726 - North American Indian Art
- ETST 4730 - Peoples and Cultures of Sub-Saharan Africa
- ETST 4768 - Chicano/Chicana Narrative and Social History
- ETST 4827 - Women and the Law

- ETST 4840 - Independent Study: ETST
- ETST 4995 - Global Study Topics

FILM AND TELEVISION EMPHASIS, FILM AND TELEVISION BFA

Introduction

Please click [here](#) to see general Film & Television information.

The Department of Film & Television offers a Bachelor of Fine Arts (BFA) in Film and Television. This BFA emphasis provides training at a professional skill level, culminating in a comprehensive review that requires successful completion of numerous film/TV projects, varying in styles from fiction to documentary. The emphasis is designed so that students will progress through the semesters as a cohort group. Undergraduates will not only work on their own projects but also will assist on group projects such as our episodic web series. Students will graduate with both a theoretical and historical perspective, as well as a hands-on experience in film and television production. This prepares students to begin their careers with entry-level positions in film or television, start their personal creative work or continue their studies in a graduate program. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- Students seeking this BFA emphasis should apply to the university and be accepted under the Film & Television BFA program. The Department of Film & Television strongly encourages fall admission and requires a secondary departmental application. Please contact David.Walter@ucdenver.edu for application information. Given the cohort nature of the program, students should be aware that failing to take courses in order and/or failing to earn the minimum required grade in any course may delay their graduation date.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
2. At least 24 of the major semester hours must be earned at CU Denver.

Take **all** of the following Film and Television Emphasis courses:

- FITV 1001 - Fundamentals of Film and Television
- FITV 1040 - Lighting, Grip, and Sound Introductory Workshop
- FITV 1550 - Scriptwriting 1 - Fiction

- FITV 1050 - Production I Basics of Film and Television
- FITV 1200 - The Culture of Television
- FITV 1600 - Writing Short Film:Non Fiction
- FITV 1110 - Production Design: Theatre, Film and Video

- FITV 2040 - Introduction to Digital Effects
- FITV 2090 - Producing for Film and Television
- FITV 2220 - Acting for Film and Television
- FITV 2650 - Sound for Film and TV

- FITV 2050 - Production II Film and Television Techniques
- FITV 2055 - Documentary Production
- FITV 2670 - Cinematography

- FITV 3050 - Junior Project Production
 - FITV 3570 - Directing for Film and Television
 - FITV 3200 - Film History 1
 - FITV 3500 - Writing for Episodic Television
-
- FITV 3060 - Junior Project Post Production
 - FITV 3300 - Film History 2
-
- **Either** FITV 3040 - Live TV Multi-camera Directing **or** FITV 3090 - Producing Episodic Television
 - FITV 4000 - Senior Thesis Production
-
- FITV 4010 - Senior Thesis Post-Production

Take **three** semester hours of upper-division Film and Television elective.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates, a list of approved electives, and more information about this emphasis.

FINANCE MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

The principal areas of study in finance are financial management in small and large businesses, investments, financial institutions, and international finance. The study of finance is intended to provide an understanding of fundamental theory and practice pertaining to finance, to make sound financial decisions. Students are taught to think logically about financial problems, so that they can formulate and implement value maximizing decisions and policies for the business. For this purpose, it is necessary to understand the importance of finance in the economy and the functions and purposes of monetary systems, credit, prices, money markets and financial institutions. Emphasis is placed on financial policy, management, control, analysis, and decision making.

The finance major provides students with the skills to succeed in all areas of finance. Numerous job opportunities exist in the field of business finance and with financial institutions, mutual funds, securities firms, personal wealth management firms, and financial planning firms including positions involving an understanding and sale of securities.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students following this major must take FNCE 4370 as their international studies course.
2. A grade of C or higher must be earned in all courses that are used as prerequisites as well as in FNCE 4500. These are noted with an asterisk.

Take **all** of the following required courses:

- FNCE 3500 - Management of Business Capital *
- FNCE 3600 - Financial Markets and Institutions
- FNCE 3700 - Investment and Portfolio Management *
- FNCE 4500 - Corporate Financial Decisions *

Take **three** FNCE electives

Take **one** FNCE, CMDET or RISK elective

FINANCIAL MANAGEMENT MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

The financial management major provides students with the skills needed to succeed in careers in financial management. The business community has affirmed that students need skills in both the accounting and finance areas. The financial management specialty incorporates knowledge of corporate financial management, financial institutions and markets, investments, financial accounting and managerial accounting, accounting information systems and information technology. Career opportunities include corporate financial management, finance/accounting positions with financial institutions and accounting positions that are not CPA-track. The major provides a solid finance and accounting background for other business positions as well.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [Business School Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Financial Management students must complete FNCE 4370 - International Financial Management, to fulfill the International Studies requirement.
2. All courses with an asterisk must be completed with a C or higher.
 - ACCT 3220 - Intermediate Financial Accounting I *
 - ACCT 3230 - Intermediate Financial Accounting II
 - ACCT 4054 - Accounting Information Systems * (Replaces ISMG 3000 in Business Core)
 - ACCT 4410 - Fundamentals of Federal Income Tax
 - FNCE 3500 - Management of Business Capital *
 - FNCE 3600 - Financial Markets and Institutions
 - FNCE 3700 - Investment and Portfolio Management *
 - FNCE 4500 - Corporate Financial Decisions *
 - RISK 3809 - Introduction to Risk Management

Note

- Students should note that all finance, risk and accounting courses are not offered every semester. Students should take the ACCT 2200 and ACCT 2220 courses as soon as possible to avoid future problems in their schedules, since these are prerequisites for all courses in the specialization.
- Students also have the option to complete a Financial Management major with a specialization in Information Systems. [Click here to view this option.](#)

FINANCIAL MANAGEMENT MAJOR - BS IN BUSINESS ADMINISTRATION WITH SPECIALIZATION IN INFORMATION SYSTEMS

Introduction

Please [click here](#) to see Business School information.

The Financial Management major with a specialization in Information Systems provides students with skills that they need to succeed in careers that bridge the fields of finance and information systems.

This specialty incorporates knowledge of financial management and markets, accounting and information systems and technology. This specialization provides the manager with knowledge of financial information systems, databases, risk management and accounting systems.

Job opportunities include positions that require knowledge of both financial management and business information systems and databases. The specialization provides a solid accounting/finance and information systems background for other finance specialist and business analyst positions as well.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete FNCE 4370 - International Financial Management, to fulfill the International Studies requirement.
2. All courses with an asterisk must be completed with a grade of C or higher.

Finance and Risk Management:

Take **all** of the following courses:

- FNCE 3500 - Management of Business Capital *

- FNCE 3600 - Financial Markets and Institutions
- FNCE 3700 - Investment and Portfolio Management *
- FNCE 4500 - Corporate Financial Decisions *
- RISK 3809 - Introduction to Risk Management

Accounting:

Take **all** of following courses:

- ACCT 3220 - Intermediate Financial Accounting I *
- ACCT 3230 - Intermediate Financial Accounting II
- ACCT 4054 - Accounting Information Systems *
- (Replaces ISMG 3000 in Business Core)
- ACCT 4410 - Fundamentals of Federal Income Tax

Information Systems:

Take **all** of the following courses:

- ISMG 3500 - Enterprise Data and Content Management
- ISMG 3600 - System Strategy, Architecture and Design
- ISMG 4780 - Accounting and Information Systems Processes and Controls
- ISMG 4900 - Project Management and Practice (Also fulfills BGEN Experiential Learning requirement)

Note

Students should note that not all finance, risk and accounting courses are offered every semester. Students should take the ACCT 2200 and ACCT 2220 courses as soon as possible to avoid future problems in their schedules, since these are prerequisites for all courses in the specialization.

FRENCH BA

Introduction

Please click [here](#) to see Modern Languages department information.

Students wishing to improve their linguistic skills as well as their knowledge of Francophone literature and culture may choose this major.

The French program offers courses in advanced language, linguistics, literature, civilization, culture and business, all taught exclusively in French. A minor is also offered. All French majors are strongly encouraged to participate in a study abroad program. Please see your French department advisor for information about opportunities to include study abroad as part of your major.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- To be admitted to major status in French, students must have an overall GPA of C+ (2.3).
- Students presenting four years of high school French (Level IV) for admission to CU Denver must see a French advisor before enrolling in courses for the major.
- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 30 FREN credit hours.
2. Students must complete a minimum of 30 upper division (3000-level or above) FREN credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative GPA of 2.5 for all courses applied to major requirements. All graded attempts in required and elective courses are

calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

4. Students must complete a minimum of 18 FREN credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. French majors are advised to take MATH 1010 or 2830 for their CU Denver Core Curriculum Mathematics requirement.
2. All courses counting toward the French major must be taught in French.
3. FREN 3200 does not count toward the major.
4. Courses taken at other institutions while a student is enrolled at CU Denver may be applied to the major only with departmental approval before enrollment in those courses.
5. Students with advanced placement credits from high school must see a French advisor about course equivalencies.
6. Upon declaring a major in French, each student will be assigned to a faculty advisor with whom the student should consult at least once per semester thereafter. It is especially important that students have their transcripts reviewed by their advisor before enrolling in their final 30 credit hours at CU Denver. Failure to do so may result in delay of graduation.
7. During their final semester in the language, French major students participate in an oral proficiency interview and take a written outcomes assessment exam to measure their level of proficiency and mastery of key concepts.
8. *Note:* Students must take at least one literature course and at least one culture or civilization course.

Take **all** of the following required courses:

- FREN 3010 - French Phonetics and Pronunciation
- FREN 3020 - Conversation through Film
- FREN 3050 - Advanced Grammar and Composition
- FREN 3060 - Advanced French Language Skills

Take **three** elective FREN courses at the 4000-level.

Take **three** elective FREN courses at the 3000 or 4000-level.

GEOGRAPHY - BA

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by full-time faculty.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 33-34 GEOG, GEOL or ENVS credit hours.
2. Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 GEOG, GEOL, or ENVS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Only 3 credits of Travel Study may be counted toward graduation requirements.
2. Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840, 4840, 4880, or 3939) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.

Take **all** of the following required courses:

- GEOG 1202 - Introduction to Physical Geography
or
- ENVS 1044 - Introduction to Environmental Sciences **and**
- ENVS 1045 - Introduction to Environmental Sciences Laboratory

- GEOG 1302 - Introduction to Human Geography **or**
- GEOG 1102 - World Regions Global Context

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development

Take **six** additional GEOG, GEOL, or ENVS courses, **including at least one course from each of the following subfields:**

Physical Geography

- GEOG 3240 - Colorado Climates
- GEOG 4010 - Landscape Biogeochemistry
- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4240 - Applied Geomorphology
- GEOG 4251 - Fluvial Geomorphology
- GEOG 4270 - Glacial Geomorphology
- GEOG 4280 - Environmental Hydrology
- GEOG 4305 - Water Quality and Resources
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- GEOG 4731 - Mountain Biogeography

- GEOG 4740 - Soil Science and Geography

Human Geography

- ENVS 1342 - Environment, Society and Sustainability
- GEOG 1602 - Urban Studies and Planning
- GEOG 2202 - Hazards to Disasters: Perception and Management
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3430 - Geography of Tourism
- GEOG 3440 - Ecotourism
- GEOG 3450 - Cultural Heritage and Tourism
- GEOG 3501 - Geography of Health
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4300 - Children's Geographies
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4335 - Contemporary Environmental Issues
- GEOG 4350 - Environment and Society in the American Past
- GEOG 4420 - The Politics of Nature
- GEOG 4440 - Science, Policy and the Environment
- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4460 - Sustainable Urban Agriculture Field Study I
- GEOG 4470 - Sustainable Urban Agriculture Field Study II
- GEOG 4640 - Urban Geography: Denver and the U.S.
- GEOG 4680 - Urban Sustainability: Perspectives and Practice
- GEOG 4710 - Disasters, Climate Change, and Health

Regional Geography

- GEOG 1102 - World Regions Global Context
- GEOG 1302 - Introduction to Human Geography
- GEOG 3100 - Geography of Colorado
- GEOG 3120 - Geography of Europe
- GEOG 3130 - Central America and the Caribbean
- GEOG 3140 - Geography of South America
- GEOG 3150 - Middle East
- GEOG 3160 - Geography of China

Techniques for Geographical Analysis

- GEOG 4080 - Introduction to GIS (highly recommended; pre-req to most of the advanced GISci courses)
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing
- GEOG 4070 - Remote Sensing II: Advanced Remote Sensing
- GEOG 4081 - Cartography and Computer Mapping
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4091 - Open Source Software for Geospatial Applications
- GEOG 4092 - GIS Programming and Automation
- GEOG 4095 - Deploying GIS Functionality on the Web
- GEOG 4220 - Environmental Impact Assessment
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4235 - GIS Applications in the Health Sciences
- GEOG 4770 - Applied Statistics for the Natural Sciences

Community/Professional Experience (optional, but highly recommended)

- GEOG 3939 - Internship

GEOGRAPHY - ENVIRONMENT, SOCIETY AND SUSTAINABILITY OPTION BA

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by full-time faculty.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 39-40 GEOG, GEOL or ENVS credit hours.
2. Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 GEOG, GEOL or ENVS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Only 3 credits of Travel Study may be counted toward graduation requirements.
2. Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840, 4840, 4880, or 3939) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.

Take **all** of the following required courses:

- ENVS 1044 - Introduction to Environmental Sciences **and**

- ENVS 1045 - Introduction to Environmental Sciences Laboratory

or

- GEOG 1202 - Introduction to Physical Geography

- GEOG 1302 - Introduction to Human Geography

or

- GEOG 1102 - World Regions Global Context

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development

Take **both** of the following courses:

- ENVS 1342 - Environment, Society and Sustainability
- GEOG 4335 - Contemporary Environmental Issues

Take **two** of the following courses:

- GEOG 4265 - Sustainability in Resources Management
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4420 - The Politics of Nature
- GEOG 4440 - Science, Policy and the Environment

Take **three** of the following environmental studies courses:

- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3440 - Ecotourism
- GEOG 3501 - Geography of Health
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 4350 - Environment and Society in the American Past
- GEOG 4420 - The Politics of Nature
- GEOG 4440 - Science, Policy and the Environment
- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4460 - Sustainable Urban Agriculture Field Study I

- GEOG 4680 - Urban Sustainability: Perspectives and Practice
- GEOG 4710 - Disasters, Climate Change, and Health
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions

Take **one** of the following Techniques for Environmental Analysis courses:

- GEOG 4080 - Introduction to GIS (highly recommended; pre-req to most of the advanced GISci courses)
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing (pre-req for Remote Sensing II)
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4235 - GIS Applications in the Health Sciences
- GEOG 4770 - Applied Statistics for the Natural Sciences

Community/Professional Experience (optional, but highly recommended)

- GEOG 3939 - Internship

GEOGRAPHY - ENVIRONMENTAL SCIENCE EDUCATION OPTION BA

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by fulltime faculty.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an oncampus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 41-42 credit hours, including a minimum of 31-30 GEOG, GEOL or ENVS credit hours and 11 credit hours of ancillary coursework.
2. Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 GEOG, GEOL or ENVS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Only 3 credits of Travel Study may be counted toward graduation requirements.
2. Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840, 4840, 4880, or 3939) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.
3. Students should consult with the School of Education and Human Development teacher licensure program early and regularly for detailed information on how best to approach the degree with licensure.

Take **one sequence** of either general biology (BIOL 2051 and 2061 with labs) or general chemistry (CHEM 2031 and 2061 with labs). If applying to the MS in Environmental Sciences program, students are advised to take both both sequences.

Course choices with descriptions are below:

- BIOL 2051 - General Biology I **and**
- BIOL 2071 - General Biology Laboratory I

- BIOL 2061 - General Biology II **and**
- BIOL 2081 - General Biology Laboratory II

OR

- CHEM 2031 - General Chemistry I **and**
- CHEM 2038 - General Chemistry Laboratory I

- CHEM 2061 - General Chemistry II **and**
- CHEM 2068 - General Chemistry Laboratory II

Take **all** of the following required courses:

- ENVS 1044 - Introduction to Environmental Sciences **and**
- ENVS 1045 - Introduction to Environmental Sciences Laboratory
- **or**
- GEOG 1202 - Introduction to Physical Geography

- GEOG 1302 - Introduction to Human Geography **or**
- GEOG 1102 - World Regions Global Context

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development

Take **both** of the following Environmental Science courses:

- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4265 - Sustainability in Resources Management

Take **one** of the following courses:

- GEOG 3240 - Colorado Climates
- GEOG 4010 - Landscape Biogeochemistry
- GEOG 4240 - Applied Geomorphology
- GEOG 4251 - Fluvial Geomorphology
- GEOG 4270 - Glacial Geomorphology
- GEOG 4280 - Environmental Hydrology
- GEOG 4305 - Water Quality and Resources
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- GEOG 4731 - Mountain Biogeography
- GEOG 4740 - Soil Science and Geography

Take **one** upper-division Biology or Chemistry course related to the student's Environmental Science interest.

Take **one** of the following courses:

- ANTH 4050 - Quantitative Methods in Anthropology
- GEOG 4770 - Applied Statistics for the Natural Sciences
- MATH 2830 - Introductory Statistics
- PSYC 2090 - Statistics and Research Methods

Take **one** of the following Geo-Spatial Analysis courses:

- GEOG 4080 - Introduction to GIS (highly recommended; pre-req to most of the advanced GISci courses)
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing (pre-req for Remote Sensing II)
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4235 - GIS Applications in the Health Sciences

Community/Professional Experience (optional, but highly recommended)

- GEOG 3939 - Internship

GEOGRAPHY - ENVIRONMENTAL SCIENCE OPTION BA

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by full-time faculty.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 41-42 credit hours, including a minimum of 31-30 GEOG, GEOL or ENVS credit hours and 11 credit hours of ancillary coursework.
2. Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

4. Students must complete a minimum of 15 GEOG, GEOL or ENVS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Only 3 credits of Travel Study may be counted toward graduation requirements.
2. Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840, 4840, 4880, or 3939) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.

Take **one sequence** of either general biology (BIOL 2051 and 2061 with labs) or general chemistry (CHEM 2031 and 2061 with labs). If applying to the MS in Environmental Sciences program, students are advised to take both sequences.

- BIOL 2051 - General Biology I **and**
- BIOL 2071 - General Biology Laboratory I

- BIOL 2061 - General Biology II **and**
- BIOL 2081 - General Biology Laboratory II

OR

- CHEM 2031 - General Chemistry I **and**
- CHEM 2038 - General Chemistry Laboratory I

- CHEM 2061 - General Chemistry II **and**
- CHEM 2068 - General Chemistry Laboratory II

Take **all** of the following required courses:

- ENVS 1044 - Introduction to Environmental Sciences **and**
- ENVS 1045 - Introduction to Environmental Sciences Laboratory

or

- GEOG 1202 - Introduction to Physical Geography

- GEOG 1302 - Introduction to Human Geography **or**
- GEOG 1102 - World Regions Global Context

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development

Take **both** of the following Environmental Science courses:

- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4265 - Sustainability in Resources Management

Take **one** from the following courses:

- GEOG 3240 - Colorado Climates
- GEOG 4010 - Landscape Biogeochemistry
- GEOG 4240 - Applied Geomorphology
- GEOG 4251 - Fluvial Geomorphology
- GEOG 4270 - Glacial Geomorphology
- GEOG 4280 - Environmental Hydrology
- GEOG 4305 - Water Quality and Resources
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- GEOG 4731 - Mountain Biogeography
- GEOG 4740 - Soil Science and Geography

Take **one** upper-division Biology or Chemistry course related to the student's Environmental Science interest.

Take **one** of the following Quantitative Methods courses:

- ANTH 4050 - Quantitative Methods in Anthropology
- GEOG 4770 - Applied Statistics for the Natural Sciences
- MATH 2830 - Introductory Statistics
- PSYC 2090 - Statistics and Research Methods

Take **one** of the following Geo-Spatial Analysis courses:

- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing (pre-req for Remote Sensing II)

- GEOG 4080 - Introduction to GIS (highly recommended; pre-req to most of the advanced GIS courses)
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4235 - GIS Applications in the Health Sciences

Community/Professional Experience (optional, but highly recommended)

- GEOG 3939 - Internship

GEOGRAPHY - URBAN STUDIES AND PLANNING BA

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by full-time faculty.

Geography and urban and regional planning share a common concern for the spatial configuration of the places that we inhabit and enjoy. In recognition of this close association, there is currently an articulation agreement between the Department of Geography and Environmental Sciences and the College of Architecture and Planning that provides students with a mechanism for acceleration through the Master of Urban and Regional Planning (MURP) degree program, if accepted into that graduate program. Those students completing the requirements for an undergraduate planning minor may also be eligible to pursue an accelerated MURP degree and if interested in this option should work closely with the option advisor in the selection of coursework. (Please see the Graduate Catalog for more information on this graduate program.)

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 39-40 GEOG, GEOL or ENVS credit hours.
2. Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 GEOG, GEOL or ENVS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Only 3 credits of Travel Study may be counted toward graduation requirements.
2. Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840, 4840, 4880, or 3939) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.

Take **all** of the following required courses:

- GEOG 1202 - Introduction to Physical Geography
or
- ENVS 1044 - Introduction to Environmental Sciences **and**
- ENVS 1045 - Introduction to Environmental Sciences Laboratory

- GEOG 1302 - Introduction to Human Geography
- **or**
- GEOG 1102 - World Regions Global Context

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development

Take **all** of the following Urban Studies courses:

- GEOG 1602 - Urban Studies and Planning
- GEOG 4640 - Urban Geography: Denver and the U.S.
- GEOG 4680 - Urban Sustainability: Perspectives and Practice

Take **four** of the following Urban Planning courses:

- GEOG 4000/ URPL 5010 - Planning Methods
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4400 - Regional Economic Systems
- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4460 - Sustainable Urban Agriculture Field Study I
- GEOG 4630/ URPL 6550 - Transportation Planning/Policy
- GEOG 4670/ URPL 6555 - Transportation, Land Use, and the Environment
- GEOG 4710 - Disasters, Climate Change, and Health
- URPL 5000 - Planning History and Theory
- URPL 6300 - Community and Environmental Health Planning
- URPL 6650 - International Development Planning: Theory and Practice

Take **one** of the following Techniques for Urban Analysis courses:

- GEOG 4080 - Introduction to GIS (pre-req to most of the advanced GISci courses)
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing (pre-req for Remote Sensing II)
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4235 - GIS Applications in the Health Sciences

Community/Professional Experience (optional, but highly recommended)

- GEOG 3939 - Internship

HISTORY BA

Introduction

Please click [here](#) to see History department information.

The bachelor's degree in history provides students with a firm grounding for advanced studies in education, librarianship, law, business and public service, as well as graduate work in the humanities and social sciences broadly. History is an all-inclusive discipline, making it an excellent choice for students with a wide variety of career goals.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This major can be complete on campus or with a combination of on-campus and online courses. Many core and upper-division courses are offered online.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 36 HIST credit hours.
2. Students must complete a minimum of 18 upper-division (3000-level and above) HIST credit hours.

3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.5. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 HIST credit hours with CU Denver faculty.

Program Allowances or Restrictions

1. 15 of the 18 upper division level credit hours must be taken at the 4000 level, including HIST 4839.

Take all of the following required courses:

- HIST 3031 - Theory and Practice of History: An Introduction to the Major
- HIST 4839 - History Seminar - Students must complete HIST 3031 with a grade of C- (1.7) or better before enrolling in HIST 4839.
- Take a minimum of six credit hours in each of the following areas: United States, Europe and world (Africa, Asia, Latin America). At least three credit hours in each area must be upper-division (3000 and 4000 level).

US Distribution:

1361, 1362, 1381, 1400, 2001, 3230, 3121, 3232, 3235, 3297, 3343, 3345, 3347, 3348, 3349, 3360, 3366, 3396, 3601, 4133, 4201, 4209, 4210, 4212, 4213, 4216, 4217, 4219, 4220, 4222, 4223, 4225, 4226, 4227, 4228, 4229, 4230, 4231, 4232, 4234, 4235, 4236, 4238, 4240, 4242, 4243, 4244, 4245, 4306, 4308, 4475, 4491, 4492, 4493, 4494, 4504, 4645

Europe Distribution:

1211, 1212, 1400, 3121, 3480, 3481, 3482, 3484, 3485, 3486, 3487, 3488, 3706, 4027, 4028, 4029, 4030, 4031, 4034, 4035, 4046, 4051, 4062, 4071, 4074, 4081, 4082, 4083, 4303, 4306, 4307, 4346, 4347, 4348, 4321, 4471, 4472, 4621

World Distribution:

1016, 1026, 3121, 3350, 3364, 3451, 3460, 3469, 3470, 3471, 3483, 3500, 3606, 3616, 4032, 4055, 4075, 4076, 4411, 4412, 4414, 4415, 4416, 4417, 4418, 4420, 4421, 4422, 4431, 4451, 4455, 4460, 4461, 4462, 4490, 4501, 4503, 4621, 4622

Electives

The degree requires a minimum of 12 additional semester hours of HIST electives, which can be satisfied by a combination of additional history courses, history internships, or history honors

independent study for eligible students. NOTE: Any courses listed above may be used to fulfill the elective requirements once the area distributions have been met.

HUMAN DEVELOPMENT AND FAMILY RELATIONS BS

Introduction

Please [click here](#) to see School of Education & Human Development information.

The Human Development and Family Relations (HDFR) Bachelor of Science program prepares students to effectively serve individuals and families in a wide variety of environments. HDFR is committed to a curriculum rich in family diversity and social justice. This 120 credit-hour interdisciplinary program explores family systems and the ecological development of individuals across their life span. The HDFR program leads to certification in the field.

Program Delivery

- This is an on-campus or online program with a variety of delivery options for many of our courses including hybrid, evening, and online courses.

Declaring This Major

- [Click here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum total of 120 semester hours for the Human Development and Family Relations BS.

2. A minimum GPA of 2.0, C or better grade, is required for all courses applying to Human Development and Family Relations major requirements.
3. Courses can be "double dipped" - i.e., used to satisfy both a general education requirement and a major course. If double dipping courses, additional HDFR courses will have to be taken to get to the 120 major required credits.
4. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Human Development and Family Relations major courses with a grade of C or better:

- HDFR 1010 - Life Span Development in Ecological Settings
- HDFR 2000 - Introduction to Family and Community Services
- HDFR 2080 - Sex, Human Development and Family Systems
- HDFR 2200 - Love, Family and Human Development
- HDFR 3002 - Preparing to be a HDFS Professional
- HDFR 3020 - Black and Latino Children in Families and Schools **or** other HDFS cultural diversity core class
- HDFR 3250 - Families in Global Perspectives
- HDFR 3400 - Love, Couples and Family
- HDFR 4001 - Families and Parenting
- HDFR 4002 - Family Life and Community Programming I
- HDFR 4003 - Leadership and Organizations
- HDFR 4004 - Family and Comm. Prog. II Grant Writing/Fundraising
- HDFR 4010 - Family and Cultural Diversity
- HDFR 4075 - Family Policy & Law
- HDFR 4080 - Global Family Resource Management
- HDFR 4260 - Family Systems and Social Justice
- HDFR 4930 - Human Development and Family Relations Internship
- MATH 2830 - Introductory Statistics
- RSEM 4100 - Research and Statistics in Families and Human Development

Take **one** of the following HDFS Family Diversity courses with a grade of C or better:

- HDFR 1030 - Who am I? Cultural Identity, Family, Diverse Soc Sys
- HDFR 1080 - Lifespan Issues in Family Violence
- HDFR 4040 - Latino Families in School and Communities
- HDFR 4045 - Abuelos (Grandparents) Latino Families
- HDFR 4888 - LGBTQ Family Systems
- HDFR 4850 - Family Systems Therapy, Religion and Spirituality

Take **one** of the following HDFR Human Development and Learning courses with a grade of C or better:

- HDFR 1000 - Global Human Development & Learning
- HDFR 2110 - Child Ecology
- HDFR 3050 - Children's Thinking and Assessment
- HDFR 3100 - Adolescent Ecology
- HDFR 4200 - Adult Ecology
- HDFR 4300 - Families in Later Life

HDFR Required Concentration Options

Select a 15 semester hour concentration area from those listed below

Pre-individual, Couple and Family Therapy/Counseling:

Provides an introduction to clinical helping professions through systems and strengths therapy perspectives, and includes English and bilingual tracks.

- HDFR 3400 - Love, Couples and Family
- HDFR 4080 - Global Family Resource Management
- HDFR 4090 - Helping Profession Skills in HDFR
- 2 Counseling Electives

Leadership and Community-based Organizations:

Provides a comprehensive understanding and preparation for students to work in and lead community-based organizations including secular, faith-based, for-profit, nonprofit, school-based, state, federal and international organizations.

- HDFR 4002 - Family Life and Community Programming I
- HDFR 4003 - Leadership and Organizations
- HDFR 4004 - Family and Comm. Prog. II Grant Writing/Fundraising
- HDFR 4080 - Global Family Resource Management
- One additional HDFR course in leadership and organizations

Higher Education Environments (Pre-Higher Education and Student Affairs):

Provides students with an introduction to higher education and student affairs administration and possible careers at various universities, community colleges and liberal arts colleges.

- HDFR 4050 - Foundations of Student Affairs
- HDFR 4003 - Leadership and Organizations
- HDFR 4500 - Diversity, Inclusion, Social Justice in Higher Education
- 2 Additional *HDFR/HESA courses

Educational Foundations and Social Justice:

Provides students with a foundation to understand justice within familial, educational and community settings. This concentration works well with the previously listed concentrations and is also offered in an English and a bilingual track.

- EDFN 1000 - Equality, Rights & Education
- EDFN 3000 - Undocumented Mexican Immigration
- EDFN 4000 - Food Justice in City & Schools
- Two additional EDFN courses selected in consultation with faculty advisor

Early Childhood Development:

- ECED 2930 - Infant & Toddler Field Experience & Seminar
- ECED 4030 - Nutrition, Health, and Safety
- ECED 4060 - Working with Families, Professionals, and Communities
- ECED 4070 - Development and Education of Infant and Toddlers
- ECED 4202 - Child Guidance and Classroom Community

Bilingual (Spanish) Family and Community Services:

Provides students with the linguistic ability to work with Spanish-speaking families and communities. Courses will be delivered in 70 percent Spanish and 30 percent English. Students in this concentration will also be able to complete any of the other concentrations in the program.

- HDFR 2110 - Child Ecology
- HDFR 4040 - Latino Families in School and Communities
- HDFR 4045 - Abuelos (Grandparents) Latino Families
- 2 HDFR Bilingual Elective

Family Gerontology:

Provides students with an ecological understanding of culturally and linguistically diverse families in later life. This concentration provides students with insight about individuals' age in families and the community. It also exposes students to promising practices for better serving older adults.

- HDFR 4045 - Abuelos (Grandparents) Latino Families
- HDFR 4200 - Adult Ecology
- HDFR 4300 - Families in Later Life
- *HDFR Family Gerontology Elective
- Existing course in sociology, nursing or other social sciences approved by advisor

*Courses to be developed are indicated with an asterisk

**Must be approved by your advisor

Second HDFR Concentration or Approved Minors Listed Below

Select an approved minor and complete the additional hours to reach 120 credits.

- Sociology
- Spanish
- Criminal Justice
- Psychology
- Women and Gender Studies
- Other minors based on the student's interest and career goals and approved by faculty advisor**

**Must be approved by your advisor

HDFR Policies

Transfer Credit

HDFR is a transfer friendly major. HDFR will accept between 21-30 transfer credits that must be approved by the Registrar and the HDFR Academic Advisor. If a student is transferring from a Non-HDFR/HDFS major they are allowed to petition for an additional 6 credits. All transfer credits must be approved by the HDFR Academic Advisor and HDFR Program Chair. If a student is transferring from a HDFR/HDFS program from another university, they can petition for additional credits to count towards the HDFR major credit. The credits must be a match to be considered for official transfer.

HDFR Passing-Grade Requirements

HDFR courses (for majors/minors) must be passed with a C. C- does not constitute a passing grade; C- may be approved if overall GPA is 2.0 or above with HDFR Program Chair review and approval (an exception may be made in only one course, and this is handled on a case-by-case basis).

HDFR Professional Internship Contact Hours Update

Students will be required to complete 200 hours on-site beginning in Fall 2020 (*an exception will be made for students who completed their HDFR 3002 in the Fall 2019 and Spring 2020 semester. These students will be granted the opportunity to complete their 155 on-site hours no later than Fall 2020*). This is in addition to completing the HDFR 4930 course (equivalent: 45 contact hours)

- On-Site Hours can be completed in 1 semester, 2 semesters or 1 semester and a summer session. Students can register for variable credits from 1-5 for a total of 5 credits.

Contact Hours:

- 1.0 credit - 40 on-site hours
- 2.0 credit - 80 on-site hours
- 3.0 credit - 120 on-site hours
- 4.0 credit - 160 on-site hours
- 5.0 credit - 200 on-site hours

HUMAN DEVELOPMENT AND FAMILY RELATIONS BS RURAL PARTNERSHIP WITH TRINIDAD STATE JUNIOR COLLEGE

Introduction

Please click [here](#) to see School of Education & Human Development information.

The Human Development and Family Relations (HDFR) Bachelor of Science program prepares students to effectively serve individuals and families in a wide variety of environments. HDFR is committed to a curriculum rich in family diversity and social justice. This 120 credit-hour interdisciplinary program explores family systems and the ecological development of individuals across their life span. The HDFR program leads to certification in the field.

This program is a rural partnership with Trinidad State Junior College (TSJC) in Trinidad, Colorado. Students complete the first two years of the program at TSJC in an Associate of Applied Science degree in Human Services and then transfer to CU Denver to complete their final two years in online HDFR coursework for the BS in HDFR degree. Advising is provided during all four years of the program, whether students are TSJC or CU Denver students.

Program Delivery

- The courses in the first two years of the program are offered on campus in Trinidad at TSJC and the last two years of the BS degree are offered in an online format. High touch distance and local advising support is offered to students in the program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [School of Education and Human Development Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum total of 120 semester hours for the Human Development and Family Relations BS.
2. A minimum GPA of 2.0, C or better grade, is required for all courses applying to Human Development and Family Relations major requirements.
3. Courses can be "double dipped" - i.e., used to satisfy both a general education requirement and a major course. If double dipping courses, additional HDFR courses will have to be taken to get to the 120 major required credits.
4. Transfer courses must be approved by faculty and/or advisor to apply to the major.

Take **all** of the following Human Development and Family relations major courses with a grade of C or better:

- HDFR 1010 - Life Span Development in Ecological Settings
- HDFR 2000 - Introduction to Family and Community Services
- HDFR 2080 - Sex, Human Development and Family Systems
- HDFR 2200 - Love, Family and Human Development
- HDFR 3002 - Preparing to be a HDFS Professional
- HDFR 3020 - Black and Latino Children in Families and Schools **or** other HDFS cultural diversity core class
- HDFR 3250 - Families in Global Perspectives
- HDFR 3400 - Love, Couples and Family
- HDFR 3050 - Children's Thinking and Assessment
- HDFR 4001 - Families and Parenting
- HDFR 4002 - Family Life and Community Programming I
- HDFR 4003 - Leadership and Organizations
- HDFR 4004 - Family and Comm. Prog. II Grant Writing/Fundraising

- HDFR 4010 - Family and Cultural Diversity
- HDFR 4075 - Family Policy & Law
- HDFR 4080 - Global Family Resource Management
- HDFR 4260 - Family Systems and Social Justice
- HDFR 4930 - Human Development and Family Relations Internship
- MATH 2830 - Introductory Statistics
- RSEM 4100 - Research and Statistics in Families and Human Development

Take **one** of the following HDFR Family Diversity courses with a grade of C or better:

- HDFR 1030 - Who am I? Cultural Identity, Family, Diverse Soc Sys
- HDFR 1080 - Lifespan Issues in Family Violence
- HDFR 4040 - Latino Families in School and Communities
- HDFR 4045 - Abuelos (Grandparents) Latino Families
- HDFR 4850 - Family Systems Therapy, Religion and Spirituality

Take **one** of the following HDFR Human Development and Learning courses with a grade of C or better:

- HDFR 1000 - Global Human Development & Learning
- HDFR 2110 - Child Ecology
- HDFR 3050 - Children's Thinking and Assessment
- HDFR 3100 - Adolescent Ecology
- HDFR 4200 - Adult Ecology
- HDFR 4300 - Families in Later Life

HUMAN RESOURCES MANAGEMENT MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

Human Resources Management offers opportunities for students to develop professional competence in the areas of personnel administration and development. Students acquire an understanding of, and skills in, developing and implementing human resources systems, including recruitment, selection, evaluation, training, motivation and compensation.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Take the following **required** course:

- MGMT 3010 - Managing People for a Competitive Advantage

Take **two** of the following courses:

- MGMT 4420 - HR: Talent MGT
- MGMT 4430 - Human Resources Management: Training
- MGMT 4440 - Human Resource Management: Performance Management
- MGMT 4450 - Human Resources Management: Compensation

Take **three** of the following:

- ENTP 3200 - Essentials in Entrepreneurship
- MKTG 4050 - Applied Marketing Management
- Upper division MGMT elective (one, two or three may be taken for this requirement)

ILLUSTRATION EMPHASIS, FINE ARTS BFA

Introduction

Please click [here](#) to see general Visual Arts information.

The Illustration emphasis integrates fine art, mixed media and digital practices with conceptual thinking, research and storytelling in the production of creative work. As a practice, Illustration focuses on skills and concepts in the professional development of a student's individual vision and approach to illustrative arts. Marketing, business and design practices prepare students to discuss and view their work in a design context and for particular commercial markets and galleries. Courses are taught in state-of-the-art drawing and computer labs using the Adobe software suite alongside hands-on studio facilities. Illustration students gather skills to easily work across multiple artistic media--including design, drawing, painting, printmaking, and 3D media for the development of motion and spatial projects.

Students gain the ability to establish freelance illustration studio practice, as well as multi-faceted professional skills and flexibility in working with designers, creative directors, and art directors. Graduates are prepared to write and illustrate concepts and stories in preparation for studios, and the editorial, publishing and advertising markets.

Students in the illustration emphasis receive instruction in conceptual illustration, digital illustration, rendering, perspective, painting, exhibition preparation, professional practices and the use of various artistic and illustration techniques. In preparation for a professional illustration career, the course work allows students to master numerous essential digital and traditional tools and work to successfully bring the two together in ambitious and innovative illustrative work.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- Students who are applying for entrance into the illustration emphasis must participate in portfolio review day, as described below. The illustration emphasis accepts applications once a year during the Spring semester. Students who meet the requirements and are accepted go on to take upper-division illustration courses.

ELIGIBILITY

The student has completed, or is in the process of completing, the following courses:

- FINE 1100 - Drawing I

- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2020 - Drawing II
- FINE 2155 - Introduction to Digital Photography
- FINE 2200 - Painting I
- A minimum cumulative fine arts/art history GPA of 2.0

Portfolio Review Requirements

Students applying to the illustration emphasis present a portfolio and unofficial transcript(s) from CU Denver and all previous post-secondary educational institutions. Portfolio reviews will take place on the first Friday in **April approximately between 12:00pm and 5:00pm (Mountain Time)**. Faculty review works in person, which must be formatted and presented to the specifications listed on the Portfolio Review page here. There is no fee to apply.

QUESTIONS

For general inquiries see the Illustration Program page here. For Portfolio review questions see the Portfolio Review page here.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 27 semester hours of visual arts credits (at any level) must be taken at CU Denver.
4. At least 24 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Pre-Portfolio courses:

- FINE 1100 - Drawing I
- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2020 - Drawing II
- FINE 2155 - Introduction to Digital Photography
- FINE 2200 - Painting I

Take **one** of the following lower-division Visual Arts courses:

- FINE 2405 - Introduction to Digital Design
- FINE 2406 - Introduction to Digital Art & Imaging

Take **all** of the following lower-division Visual Arts courses:

- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II
- FINE 2030 - Life Drawing
- FINE 2415 - Typography Studio

Take **all** of the following Illustration Emphasis courses (to be taken after gaining acceptance to emphasis via portfolio day):

- FINE 3010 - Illustration I: Image Making
- FINE 3014 - The Graphic Novel Workshop
- FINE 3410 - Illustration II: Digital Media
- FINE 4000 - The Business of Art
- FINE 4001 - Illustration III: Investigative Methods
- FINE 4002 - Illustration IV: Thesis Development

Take **all** of the following upper-division Visual Arts courses:

- FINE 3300 - Painting, Drawing and the Printed Image
- FINE 3450 - Digital Painting
- FINE 4990 - Contemporary Art: 1960 to Present

Take **three** semester hours of Pre-20th Century Art History elective.

Take **twelve** semester hours of Visual Arts electives. These may include studio, lecture, internship or art history courses.

Take the following Capstone course:

- FINE 4003 - Illustration BFA Thesis

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

INDIVIDUALLY STRUCTURED MAJOR - INTEGRATED STUDIES BA

The College of Liberal Arts and Sciences (CLAS) Integrated Studies option provides students with the opportunity to construct an individualized major that meets their unique needs, and which results in a B.A.

This flexible program allows students to create a major by combining two course clusters

- One cluster must be based on a CLAS minor in the CU Denver catalog. The minor must be at least 15 credits, and students can add additional courses from the discipline (up to 21 credits total in one discipline) to form the cluster.
- The other cluster can also be based on a minor in the catalog (within CLAS or another school or college), or it can be constructed by the student from a group of courses from a variety of disciplines that form a coherent body of knowledge (an interdisciplinary cluster)
- Students must also complete an introduction to interdisciplinary studies course as well as an interdisciplinary capstone course and project that bring together the learning from their two clusters

These degree requirements are subject to periodic revision by CLAS, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their CLAS Academic Advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.
- Students are required to submit a program plan that includes a proposal and a course contract. Copies of completed Integrated Studies option proposals and course contracts must be filed with the Dean's Office and with the student's CLAS Academic Advisor.
- The Integrated Studies option proposal must include
 - Two chosen clusters (at least one of which must be based on a CLAS minor)
 - If one of the clusters is constructed, an explanation of how the courses fit together to form a coherent body of knowledge
 - Approval from an Associate Dean in CLAS
- The Integrated Studies option course contract must include
 - A list of the courses the student intends to take or has completed in the chosen clusters, as well as potential alternate courses. The student should work closely with their CLAS academic advisor to create the course contract
 - Signature from the student's CLAS Academic Advisor
 - Signature from the appropriate CLAS Associate Dean

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 36 credits from approved coursework.
2. Students must complete a minimum of 18 upper division (3000 level and above) credit hours with a minimum of 9 upper division level credit hours in each cluster.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. A minimum of 24 credit hours must be completed with CU Denver faculty (at least 9 credits in each course cluster in addition to ISMA 3100 and ISMA 4900).

Program Restrictions, Allowances and Recommendations

1. A student must have already completed at least 60 credit hours to declare the Integrated Studies option.
2. At least half of all credits in the Integrated Studies option must be from CLAS departments.
3. Each course cluster in the major option must consist of at least 15 credit hours and one cluster must be based on a CLAS minor in the CU Denver catalog.
4. Students can apply credits they earned before declaring the Integrated Studies option to the major.
5. Once the Integrated Studies option course contract is filed, any changes to coursework must be approved by the student's CLAS Academic Advisor and resubmitted to the Associate Dean for approval.
6. Students will not receive minors in any of the cluster areas used toward the Individually Structured Major Integrated Studies option, even if the requirements for the minor are met.
7. Students may petition the Associate Dean for Diversity, Outreach and Initiatives to fulfill their introduction and capstone outside of ISMA 3100 and ISMA 4900.

Roles and Responsibilities

Student

- creates the Integrated Studies option initial proposal and course contract (in collaboration with their CLAS Academic Advisor)
- meets regularly with their CLAS Academic Advisor to assess progress through the major, CLAS graduation requirements and CU Denver graduation requirements
- fulfills requirements of the Integrated Studies course contract

CLAS Academic Advisor

- reviews Integrated Studies option proposal and overall course contract together with the student
- meets with Integrated Studies option advisees to monitor progress
- maintains records of Integrated Studies option proposals and contracts
- certifies graduation
- Associate Dean
- approves student proposals and course clusters for Integrated Studies option majors
- signs off on Integrated Studies option course contracts
- may oversee advisee's capstone project
- may consult with student and other faculty on course clusters

Faculty Advisor

- may oversee advisees' capstone projects
- may consult with student and Associate Dean on course clusters

Integrated Studies Coursework Requirements

Complete the following courses:

ISMA 3100-should be taken early in the academic career (i.e. sophomore year)

ISMA 4900-should be taken toward then end of the academic career (i.e. senior year)

- ISMA 3100 - Learning Across Disciplines (3 credit hours)
- ISMA 4900 - Interdisciplinary Studies Capstone (3 credit hours)

Student must complete a minimum of 30 credit hours from two course clusters. Each cluster must consist of at least 15 credit hours, and one cluster must be based on a CLAS minor in the CU Denver catalog.

INDIVIDUALLY STRUCTURED MAJOR - INTERCAMPUS INTERDISCIPLINARY OPTION BA

Introduction

ISO is a system initiative realized through campus cooperation. Faculty and administrative representatives from the three comprehensive campuses of the University of Colorado System (CU Denver, CU Boulder, and UCCS) have participated in constructing the major.

The central facets of the Option are:

- Collaborative Foundational Courses
 - Collaborative teams made up of faculty members from the three campuses have completed syllabi for three foundational courses and have begun the process of building these courses online through the Canvas Learning Management System (which the three comprehensive campuses have now adopted).
- Collaborative Course Clusters
 - Campus teams have vetted ten clusters across their campuses in discussions with faculty governance bodies, department chairs, and other

groups to assure buy-in as well as to confirm that appropriate courses are included in the clusters.

Program Delivery

- This is an on-campus, online or hybrid program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Requirements
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 39 credits from approved coursework.
2. Students must complete a minimum of 15 upper division (3000-level and higher) credit hours from approved coursework.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 24 credit hours of approved coursework with CU Denver faculty.

Take **all** of the following courses:

- ISMA 1500 - Introduction to Interdisciplinary Learning -should be taken early in the academic career (i.e. freshman year)
- ISMA 3500 - Interdisciplinary Experiential Learning
- ISMA 4500 - Interdisciplinary Learning Capstone -should be taken toward the end of the academic career (i.e. senior year)

Clusters

Students must choose two clusters of a minimum of 15 credits each.

Clusters are interdisciplinary groups of courses selected from each campus to support a recognizable topic shared among the three campuses; they differ from traditional campus- and disciplinary-based minors and certificate programs. Team ISO has created 10 interdisciplinary clusters from which students will select two. Each cluster must contain a minimum of 15 credits from a common group of courses drawn from the three comprehensive campuses:

1. Cultural Diversity
2. Research Methods & Data Analysis
3. Global Studies
4. Digital and Media Studies
5. Environment & Sustainability
6. Policy & Security
7. Social Justice Studies
8. Organizations & Leadership
9. Professional & Technical Communication
10. Health, Science, and Society

INDIVIDUALLY STRUCTURED MAJOR - INTERDISCIPLINARY STUDIES BA

Introduction

Please click [here](#) to see Individually Structured Major department information.

The College of Liberal Arts and Sciences Interdisciplinary Studies Major (ISM) provides students with the opportunity to construct an individualized major that meets their unique needs and interests, and which results in a B.A. This flexible program allows students to follow academic pursuits that transcend traditional department or college boundaries, combining coursework from two, three, or even more academic units to explore a particular theme. An ISM tends to be more focused than traditional majors and should not be considered a default major for students uncertain about their course of study.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in

individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to general information about declaring a major
- In order to declare an Interdisciplinary Studies Major, students are required to submit a program plan that includes a proposal and a course contract. Students should aim to complete a program plan before the end of the sophomore year. The proposal should be approved before students have taken one-third of the classes listed in their course contracts. Copies of your completed ISM proposal and course contract must be filed with the Associate Dean for Diversity, Outreach and Initiatives and with your CLAS Academic Advisor.
- The ISM proposal must include
 - A description of your chosen theme (see below for sample themes).
 - An explanation of why the theme requires coursework that integrates multiple disciplines. You can choose a theme within interdisciplinary frameworks already established in CLAS but which do not offer BA degrees. These frameworks include Chinese Studies, Health Humanities, Law Studies, Religious Studies, Social Justice, Sustainability, and Women's and Gender Studies. You are also encouraged to create your own frameworks.
 - An outline of specific learning objectives for the ISM (see below for sample learning objectives).
 - Approval from the Associate Dean for Diversity, Outreach and Initiatives.
- Your ISM course contract must include
 - A list of the courses in your chosen disciplines and the optional "grab bag" of courses that you intend to apply to your ISM, as well as potential alternate courses. You should work closely with the Associate Dean for Diversity, Outreach and Initiatives and faculty advisors in your chosen disciplines to create your course contract.
 - Signatures from your chosen Primary Faculty Advisor from one of your main disciplines and signatures from Faculty Advisors from your other main disciplines. You do not need a faculty advisor for grab bag courses.
 - Signature from your Academic Advisor.
 - Signature from the Associate Dean for Diversity, Outreach and Initiatives.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Requirements
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

The ISM program plan requires course work over two or three disciplines. A discipline is defined as a single department or program such as biology, ethnic studies or math. The ISM program plan must comply with the following policies:

1. Students must complete a minimum of 42 credits from approved coursework.
2. Students must complete a minimum of 18 upper division (3000 level and above) credit hours with a minimum of 9 upper division level credit hours in Disciplines I and II.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. A minimum of 24 credit hours must be completed with CU Denver faculty (at least 9 credits in Disciplines I and II, in addition to ISMA 3100 and ISMA 4900).

Program Restrictions, Allowances and Recommendations

1. Once the ISM course contract is filed, any changes to coursework must be approved by the student's Primary Faculty Advisor and resubmitted to the Associate Dean for Diversity, Outreach and Initiatives and to the student's CLAS Academic Advisor.
2. A minimum of 30 semester hours must be completed in liberal arts and sciences course work.
3. A maximum of one discipline (15 credits) may be outside CLAS.
4. A third optional discipline may be a mixture of course work, excluding courses from the first and second disciplines.
5. An ISM title must be consistent with the academic theme and disciplines in the program plan.
6. Students may petition the Associate Dean for Diversity, Outreach and Initiatives to fulfill their introduction and capstone outside of ISMA 3100 and ISMA 4900.

7. The ISM proposal should be approved before students have taken one-third of the classes listed in their course contracts.

Roles and Responsibilities

Student

- creates the ISM proposal and course contract (in collaboration with faculty advisors)
- meets regularly with ISM Primary Advisor to assess progress through ISM
- fulfills requirements of ISM course contract

Associate Dean for Diversity, Outreach and Initiatives

- approves student proposals for ISM
- signs off on ISM course contracts
- maintains records of ISM applications
- certifies graduation
- Primary Faculty Advisor
- approves ISM course contract
- meets with ISM advisees to monitor progress
- oversees advisees' capstone projects

Other Faculty Advisors

- approve course contract
- help with capstone projects when needed

CLAS Academic Advisor

- reviews overall course contract
- approves exempt core area

ISM Coursework Requirements

Complete the following courses:

ISMA 3100-should be taken early in the academic career (i.e. sophomore year)

ISMA 4900-should be taken toward the end of the academic career (i.e. senior year)

- ISMA 3100 - Learning Across Disciplines (3 credit hours)

Interdisciplinary Coursework (42-48 credit hours)

While the ISM requires students to take a minimum of 15 credit hours in each of two

disciplines, students can fulfill the remainder of their credit hours by contracting with additional disciplines or by creating a "grab bag": choosing courses from a variety of disciplines that suit their ISM plan. Up to 15 credit hours for an ISM can come from outside of CLAS.

Sample breakdowns of what ISM coursework might look like:

Discipline I: 15 hours

Discipline II: 15 hours

Discipline III: 9 hours

Discipline IV: 9 hours

Total: 48 credit hours

Discipline I: 18 hours

Discipline II: 15 hours

"Grab Bag" from four disciplines: 12 hours

Total: 45 credit hours

Discipline I: 24 hours

Discipline II: 18 hours

Total: 42 credit hours

- ISMA 4900 - Interdisciplinary Studies Capstone (3 credit hours)

Examples

Examples of Interdisciplinary Studies Major themes could include:

1. Global Health
2. Victorian Studies
3. Gender and Media
4. Applied Sciences
5. Urban Studies
6. Consumers and Consumption
7. Disability Studies
8. Health and Sexuality
9. Human Rights
10. Human-centered design and innovation
11. Food Studies
12. Science, Technology, and Society
13. Latin American Studies

An example course contract for Global Health could look like:

Discipline I: Anthropology

ANTH 1000 Anthropology: Past and Present OR ANTH 2102: Culture and the Human Experience

ANTH 3032 Anthropology of Health Care Policy

ANTH 3210 Urban Food Systems and Sustainability

ANTH 4080 Global Health Practice (Travel Study Course)

ANTH 4300 Migrant Health

Discipline II: Public Health

PBHL 2001 Introduction to Public Health

PBHL 3041 Health, Culture, and Society

PBHL 3070 Perspectives in Global Health

PBHL 3071 Global Topics in Sexual and Reproductive Health

PBHL 4020 Global Health: Comparative Public Health Systems

Grab Bag

COMM 4500 Health Communication

ECON 4660 Health Economics

GEOG 3501 Geography of Health

HIST 4346 Medicine and Society: Ancients to the Present

SOCY 3440 Medical Sociology

Example of learning objectives for the ISM in Global Health:

Develop knowledge of current global health issues.

14. Identify the theories, methods, and analytical perspectives of anthropology and public health to understand global health systems.
15. Synthesize the theories, methods, and analytical perspectives of anthropology and public health, with input from other disciplines, to answer interdisciplinary questions.
16. Communicate ideas effectively in writing and through speaking.
17. Critically evaluate a variety of textual and statistical evidence.
18. Demonstrate ethical approaches to studying a variety of cultural perspectives.

INDIVIDUALLY STRUCTURED MAJOR- INTEGRATED HEALTH SCIENCES OPTION BA

Introduction

The College of Liberal Arts and Sciences (CLAS) Integrated Health Sciences option provides students with the opportunity to construct an individualized major that meets their unique needs, and which results in a B.A.

These degree requirements are subject to periodic revision by CLAS, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their CLAS Academic Advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

The ISM program plan must comply with the following policies:

1. Students must complete a minimum of 39 credit hours from the approved courses.

2. Students must complete a minimum of 9 upper-division (3000-level and above) credit hours in the approved cluster area and must complete all of the upper-division requirements for the minor or certificate they choose to pair with the cluster.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 credit hours with CU Denver faculty from the approved cluster area and must complete all of the residency requirements for the minor or certificate they choose to pair with the cluster.
5. Students can double-count a maximum of one course across their areas (in addition to an introductory course).
6. Students combine ONE of the identified CLAS minors or certificates with ONE of the topical clusters to make up their **major areas**.
7. Students must take courses from at least TWO different disciplines in their topical cluster.
8. Students are required to take TWO courses as an introduction to their major. If an introductory course is also part of a student's topical cluster, a student may count one introductory course as part of that area's credits.
9. NOTE: Some courses in each cluster require prerequisites that must be met making them a 21 credit cluster. Please see course descriptions.

Take **two** of the following four courses as an introduction to their major:

- COMM 2500 - Introduction to Health Communication
- HEHM 3100 - Introduction to Health Humanities
- PBHL 2001 - Introduction To Public Health
- SOCY 3440 - Medical Sociology

Note: If an introductory course is also part of a student's chosen area, a student may count one introductory course as part of that area's credits.

Choose and complete **one** CLAS minor or certificate:

- Public Health Minor

The undergraduate minor in Public Health is designed to provide students with a basic understanding of the social, cultural, and biological dimensions of health. The minor curriculum provides students with the intellectual and methodological tools needed to understand the joint bio-cultural determinants and contexts of health, health care and public health.

- Health Humanities Minor

The Health Humanities minor critically analyzes historical and contemporary connections among health, medicine, and society. The minor deepens understandings of disease and wellness, pain and suffering, personhood, the nature of death and dying, embodied experience, and the limits of technological knowledge. Students explore the human dimensions of medical practice and how they interact with lived experience.

- Health Communication Certificate

The Certificate in Health Communication seeks to impart the knowledge and skills necessary for creating, analyzing, and assessing health communications in a diverse and global world, where health occupies an increasingly prominent portion of our public life. This certificate provides students with a theoretically rich and practically relevant education in how health messages are generated, negotiated, and understood.

- Sociology of Health and Medicine Certificate

The Sociology of Health and Medicine Certificate provides training in the core research methodologies and theories of medical sociology, examining individual experience, institutional structures, laws and policies that affect health, and broader systems of inequality that lead to unequal rates of illness and access to care.

And choose and complete 15 credit hours, 9 upper division in at least **one** topical cluster:

- Aging and End of Life Cluster
- Biology and Society Cluster
- Environmental Health Cluster
- Drugs and Addiction Cluster
- Family Health Issues Cluster
- Food and Nutrition Cluster
- Sexuality and Reproduction Cluster

Take the following Capstone course toward the end of your career (junior/senior year)

- ISMA 4900 - Interdisciplinary Studies Capstone

Topical Clusters

Aging and End of Life Cluster

The Aging and End of Life Cluster is designed for students to learn about the range of human experiences with aging and dying, and to understand how the medical considerations of aging and the end of life intersect with social, ethical, policy, and religious questions.

- ANTH 3666 - Anthropology of Death
- PHIL 3550 - Philosophy of Death and Dying

- PSYC 2205 - Lifespan Developmental Psychology for Health Majors
- PSYC 3822 - Aging, Brain and Behavior
- RLST 4460 - Death and Concepts of Afterlife
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- SOCY 4290 - Aging, Society and Social Policy
- SOCY 4650 - Sociology of Adulthood and Aging
- IWKS 4520 - Design for Healthful Human Longevity

Biology and Society Cluster

This area examines the ways biology interacts with everyday life. Students will learn about the reciprocal relationships between biology and society, including themes of health and disease, the environment, evolution, ethics, and behavioral choices about health.

- ANTH/ PBHL 4060 - Evolutionary Medicine
- ANTH 4150 - Human Biocultural Adaptability
- ANTH 4600 - Medical Anthropology
- BIOL/ PSYC 3104 - Behavioral Genetics
- PHIL 4242 - Bioethics
- PSYC 2220 - Biological Basis of Behavior
- PSYC 3262 - Health Psychology
- PSYC 3263 - Hormones and Behavior
- PSYC 3724 - Developmental Psychobiology
- PSYC 3810 - Neuropsychology
- SOCY 4220 - Population Change and Analysis

Note: If students choose multiple upper division PSYC courses, they will need to add the introductory prerequisites, for a total for 21 credits for the cluster.

Environmental Health Cluster

This area focuses on the relationships between people and their environments. Students will learn about how both natural and built environments impact human health and disease, and how ecological balances are important to maintaining human health.

- ANTH 3250 - Climate, Environment and Society
- ANTH 3316 - History of Human Environmental Impacts
- ANTH 4150 - Human Biocultural Adaptability
- BIOL 3654 - General Microbiology
- BIOL 4053 - Disease Ecology

- BIOL 4154 - Conservation Biology
- BIOL 4415 - Microbial Ecology
- BIOL 4460 - Environmental Toxicology
- ENVS 1342 - Environment, Society and Sustainability
- ENVS 4720 - Climate Change: Causes, Impacts and Solutions
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3501 - Geography of Health
- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4350 - Environment and Society in the American Past
- GEOG 4710 - Disasters, Climate Change, and Health
- PBHL 3020 - Introduction to Environmental Health

Note: If students choose multiple upper division BIOL courses, they will need to add the BIOL introductory sequence, General Biology 1 and 2 (BIOL 2051/2095 and BIOL 2061/2097), which counts for university core requirements, for a total of 21 credits in the cluster. You can also use the Biology prerequisites towards a Biology Minor in addition to your cluster.

Drugs and Addiction Cluster

This area considers the characteristics of addiction and how drugs work. Students will have the opportunity to study drugs and addiction from a variety of perspectives to better understand how individuals experience addiction and how society approaches policies and treatments regarding drugs and addiction.

- ANTH 3045 - Cannabis Culture
- ANTH 3420 - Anthropology and Politics of the Global Tobacco Epidemic
- ANTH/ PBHL 4090 - Drug Syndemic
- BIOL 1200 - Drugs, Health, and Wellness
- ECON 3400 - Economics of Sex and Drugs
- PSYC 3265 - Drugs, Brain and Behavior
- SOCY 3040 - Drugs, Alcohol & Society

Family Health Issues Cluster

This area explores families as locations of health and well-being, on the one hand, and sources of health problems and crises, on the other. Students will learn about the relationships between family health and community health, as well as individual health and family health.

- COMM 3275 - Family Communication
- PBHL 3051 - Mental Illness and Society

- PBHL 4110 - Public Health Perspectives On Family Violence
- PSYC 3405 - Family Psychology
- PSYC 3611 - Psychology of Women
- SOCY 3010 - Sociology of Human Sexuality
- SOCY 3700 - Sociology of the Family
- SOCY 4270 - Social Meanings of Reproduction
- SOCY 4290 - Aging, Society and Social Policy
- SOCY 4640 - Sociology of Childhood and Adolescence
- SOCY 4650 - Sociology of Adulthood and Aging
- SOCY 4780 - Violence in Relationships

Note: If students choose multiple PSYC courses, they will need to add PSYC introductory sequence, PSYC 1000 and PSYC 1005, which counts for core requirements, for total of 21 credits in the cluster.

Food and Nutrition Cluster

This area considers relationships between nutrition and overall health and well-being. Students will connect food to issues of sustainability and communication, understand obstacles to healthy eating, and learn about global issues of nutrition.

- ANTH 3210 - Urban Food Systems and Sustainability
- ANTH 4040 - Anthropology of Food and Nutrition
- CHEM 2300 - Nutritional Chemistry
- COMM 4601 - You Are What You Eat: Food as Communication
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 4460 - Sustainable Urban Agriculture Field Study I
- GEOG 4470 - Sustainable Urban Agriculture Field Study II
- EDFN 4000 - Food Justice in City & Schools

Sexuality and Reproduction Cluster

This area examines sexuality and reproduction at both micro and macro levels, from the anatomy of the human body and the psychology of mind to the history of multiple societies and clusters. Students will learn how assumptions about gender and sex inform the science of sexuality and reproduction, and health impacts that derive from these relationships.

- ANTH 4260 - Human Reproductive Ecology
- BIOL 4074 - Human Reproductive Biology
- HIST 4307 - History of Sexuality
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present

- PBHL 3010 - Human Sexuality and Public Health
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PSYC 3235 - Human Sexuality
- SOCY 3010 - Sociology of Human Sexuality
- SOCY 3080 - Sex and Gender
- SOCY 4220 - Population Change and Analysis
- SOCY 4270 - Social Meanings of Reproduction

INFORMATION SYSTEMS MAJOR - BS IN BUSINESS ADMINISTRATION (SPECIALIZATIONS AVAILABLE IN ACCOUNTING, FINANCE, HUMAN RESOURCE MANAGEMENT, MANAGEMENT AND MARKETING)

Introduction

Please click [here](#) to see Business School information.

The information systems program at the University of Colorado Denver is a nationally accredited program for students who want to design and implement effective solutions to meet organizational and management needs for information, control and decision making.

An information systems (ISMG) major draws on a diverse set of skills and strengths requiring creative and innovative thinking at the intersections of disciplinary knowledge and practice. Information systems students learn how information technology, effective teamwork and leadership and sound project management combine to enable innovation and change, to improve organizational agility and to add competitive value. Courses require extensive hands-on projects, teamwork, and use of high-end technology. A combination of technical skills gained in class work with broad-based business process knowledge enables our graduates to be ideally situated to take leading roles in shaping the technology-based future of employers in the Rocky Mountain region and the nation.

Undergraduate Options

The Business School at the University of Colorado Denver offers a bachelor of science in business administration where you may choose information systems as your primary core specialty:

- Information Systems, Bachelor of Science in Business Administration degree

Or you may choose to add an information systems specialization to another business discipline:

- Accounting with an Information Systems specialization
- Financial Management with an Information Systems specialization
- Management with an Information Systems specialization
- Marketing with an Information Systems specialization

Career Opportunities

Careers in information systems continue to be one of the highest growth markets in the business world. A student completing the information systems program curriculum will be prepared for challenging careers as a business analyst, database analyst, Web content manager, project manager, IT consultant, and information auditing and compliance specialist.

Employment possibilities include financial operations, health care, management consulting, service operations, transportation, and logistics and government.

Information systems are becoming the foundation of all business activities, and a solid understanding of the role of information systems in business and in the national and global economy is now critical for every business student. The information systems major focuses on the effective use of information technology in business. You are equipped with logical and analytical thinking in all areas of business and a strong basis for continued career growth in a variety of growing professions. You will develop the technical skills, business know-how and administrative insights required for acquisition, deployment and management of IT resources and services development, operation and evolution of IS infrastructure for use in accounting, finance, marketing, management and other business processes.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. The courses emphasize both team and individual work, allowing students to gain critical thinking skills, knowledge and experience to analyze, design, program, implement and use information.

Take **all** of the following courses:

- ISMG 2800 - Designing for the Web
- ISMG 3500 - Enterprise Data and Content Management
- ISMG 3600 - System Strategy, Architecture and Design
- ISMG 4400 - Programming Fundamentals with Python
- ISMG 4700 - Business Data Communications and Networking
- ISMG 4900 - Project Management and Practice (also fulfills BGEN Experiential Learning requirement)

Take **two** upper division ISMG electives or, if following a specialization, select 2 courses from one of the specializations listed below.

Accounting Specialization

Take **two** of the following courses:

- ACCT 3220 - Intermediate Financial Accounting I
- ACCT 3230 - Intermediate Financial Accounting II
- ACCT 4054 - Accounting Information Systems
- ACCT 4780 - Accounting and Information Systems Processes and Controls

Finance Specialization

Take **two** of the following courses:

- FNCE 3500 - Management of Business Capital
- FNCE 3600 - Financial Markets and Institutions

- FNCE 3700 - Investment and Portfolio Management
- FNCE 4750 - Business Intelligence and Financial Modeling

Human Resource Management Specialization

Take **two** of the following courses:

- MGMT 3010 - Managing People for a Competitive Advantage
- MGMT 4420 - HR: Talent MGT
- MGMT 4430 - Human Resources Management: Training
- MGMT 4440 - Human Resource Management: Performance Management
- MGMT 4450 - Human Resources Management: Compensation

Management Specialization

Take **two** of the following courses:

- MGMT 4350 - Leading Organizational Change
- MGMT 4370 - Organization Design
- MGMT 4400 - Environments of International Business

Marketing Specialization

Take **two** of the following courses:

- MKTG 3100 - Marketing Research
- MKTG 3200 - Consumer Behavior
- MKTG 4050 - Applied Marketing Management
- MKTG 4760 - Customer Relationship Management

Notes

Not all Information Systems courses are offered every semester - so contact advising to plan ahead.

Students also have the opportunity to continue their education with an MS in Information Systems. The ISMG 4+1 program allows students to potentially complete the BS and MS degrees in as little as five years through substituting two graduate courses for two undergraduate courses. The graduate courses count towards both the BS and MS degrees.

If you are considering this 4+1 program, contact your advisor immediately so that you can appropriately plan your coursework. Email undergrad.advising@ucdenver.edu

INTERNATIONAL BUSINESS MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

Increasingly, businesses are reorienting their thinking, planning and operations to capitalize on opportunities that exist in the world marketplace. Every phase of business is affected by this reorientation. For individuals with the appropriate skills, training and interest, international business provides excellent career opportunities.

The international business curriculum is designed to enhance and build on thorough training in basic business skills and to provide students with additional skills and knowledge appropriate to international business.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

Take **all** of the following Foundation courses:

- MGMT 4370 - Organization Design
- MKTG 4050 - Applied Marketing Management
- FNCE / INTB 4370 - International Financial Management
- INTB 4400 - Environments of International Business
- INTB 4410 - Operations of International Business
- INTB 4200 - International Marketing

International Business Majors must take one upper division business elective to replace the International Studies requirement.

Note

- A second major in Business is highly recommended. In addition, serious consideration should be given to advanced study of a foreign language and a minor in International Studies, offered by College of Liberal Arts and Sciences.

INTERNATIONAL STUDIES BA

Introduction

Please click [here](#) to see International Studies department information.

In a world where the forces of politics, commerce, culture, and technology are multifaceted and interconnected, the International Studies major provides students with a much-needed global perspective. International Studies is an interdisciplinary liberal arts degree that prepares students for international careers and graduate study. The International Studies major offers students a deep understanding of complex international issues and the underlying drivers that are shaping our world. Employers seek the qualities of International Studies graduates: historical knowledge, research ability, cross-cultural competence, teamwork and leadership experience, and the ability to analyze, model, and solve real-world problems. The INTS major provides students with the methodological tools necessary to analyze various regions of the world and global issues from different academic disciplines. Students can take courses from departments including Anthropology, Business, Communication, Economics, Ethnic Studies, Geography, History, Modern Languages, Political Science, and Religious Studies, among others. This combination of coursework, flexibility, and customization provides International Studies majors a distinctive and valuable degree for today's world.

Degree requirements are subject to periodic revision by the academic program, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

International Studies students are expected to develop both a regional zone of expertise and thematic specialization. Students should choose courses from the introductory, zone, and theme lists that contribute to developing both a broad and deep understanding of international issues.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 48 credit hours from the approved courses.
2. Students must complete a minimum of 24 upper-division (3000-level and above) credit hours in the major from the approved courses.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.5. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 24 credit hours with CU Denver faculty from the approved courses.

Program Restrictions, Allowances and Recommendations

1. No more than 56 credits accepted toward graduation.
2. Program Honors = 3.5 GPA within the major.
3. Students may use up to 6 internship credits toward international studies graduation requirements.

4. Students may use up to 6 credits of independent study toward international studies graduation requirements.
5. All International Studies majors must demonstrate proficiency in a language other than English. Non-native English speakers may use English for their language proficiency. Language requirements may be fulfilled by successful completion of the fourth semester of a foreign language course sequence or by passing an equivalent proficiency exam.
6. Both 3000- and 4000-level language courses may be counted toward the Zone or Focus Theme.
7. Two 2000-level courses in a relevant language may be used toward the Zone but must be in addition to the 4 upper division courses in the Zone. Students using two 2000 level language courses will count 6 total courses toward the Zone.
8. 1000-level language courses cannot be counted toward the major but may be used to fulfill other graduation requirements.
9. Generally, students majoring in International Studies may choose MATH 1010-Math for Liberal Arts. Students wishing to focus on Focus Themes with a heavier Economics component (such as Global Development, Global Environmental Studies, and International Political Economy) should consider MATH 2830 - Introductory Statistics. Please meet with the major advisor to discuss your interests.

Take the following introductory courses:

- INTS 2020 - Foundations of International Studies
- ECON 2012 - Principles of Economics: Macroeconomics

- PSCI 3042 - Introduction to International Relations **or**
- PSCI 3022 - Political Systems of the World

- HIST 4032 - Globalization in World History Since 1945

- COMM 4720 - Dynamics of Global Communication **or**
- ANTH 2102 - Culture and the Human Experience

Take **one** High Impact Practice course:

- INTS 3939 - Internship
- INTS 4840 - Independent Study
- INTS 4880 - Directed Research
- Any travel study or study abroad

Take the following International Studies Capstone course:

- INTS 4990 - International Studies Capstone (taken in a student's final year of the program)

Take 9 elective courses drawn from one Zone of Expertise and one Focus Theme, according to the categories below. A minimum of 8 courses must be at the 3000 or 4000 level:

- At least four courses from one Zone of Expertise.
- At least four courses from one Focus Theme.
- Students must take courses in at least two different disciplines within both their Zone of Expertise and Focus Theme.

Complete at least four courses from one Zone of Expertise, in at least two different disciplines:

Zones of Expertise:

- Africa (Sub-Saharan; French or other relevant language)
- Asia (Chinese or other relevant language)
- Colonial, Neo-Colonial, & Post-Colonial Worlds (English for nonnative speakers, French, German, Spanish, or other relevant language)
- Europe (English for nonnative speakers, French, German, Spanish, or other relevant language)
- Global (any language, English for nonnative speakers)
- Islamic World (Arabic or other relevant language)
- Latin America (Spanish or other relevant language)
- North America (English for nonnative speakers, French, Spanish, or other relevant language)

Note: Various Global Education/Study Abroad courses may not appear on the lists below. Please consult with an International Studies advisor for current offerings.

AFRICA (SUB-SAHARAN)

- ETST 4730 - Peoples and Cultures of Sub-Saharan Africa
- FREN 3200 - The Francophone World in the Post-Colonial Era
- HIST 3451 - Introduction to African History
- HIST 3500 - African History in Novels and Films
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4451 - Southern Africa
- HIST 4455 - African Struggle for Independence
- PSCI 3050 - Islamophobia
- PSCI 4195 - Political Systems of Sub-Saharan Africa

ASIA

- HIST 3470 - Intro to East Asia: Since 1800
- PSCI 4505 - Political System of Russia and Its Neighbors
- RLST 3410/ PHIL 3410 - Asian Philosophies and Religions
- CHIN 3200 - Contemporary Chinese Society and Culture
- CHIN 3300 - Special Topics on Chinese Film
- CHIN 3840 - Independent Study: CHIN
- CHIN 3995 - Global Study Topics
- CHIN 4880 - Directed Research
- COMM 3230 - Chinese Communication & Culture in Context
- FINE 4750 - Arts of China
- GEOG 3160 - Geography of China
- HIST 4420 - Traditional China: China to 1600
- HIST 4421 - Modern China
- PSCI 4615 - Politics and Government of China
- RLST 3660 / PHIL 3981 - Chinese Philosophy and Culture
- PSCI 4726 - Seminar on U.S. and China Relations
- FINE 4770 - Art of India and Southeast Asia
- HIST 4475 - The Vietnam War
- PSCI 4605 - Politics and Governments of South Asia
- RLST 3500 - Religions of India
- FINE 4730 - Arts of Japan
- HIST 4431 - Modern Japan
- ETST 3297 - Social History of Asian Americans
- ETST 3307 - Selected Topics: Asian Americans
- ETST 3357 - Asian American Literature
- ETST 3567 - Asian American Women
- ETST 3697 - Contemporary Asian American Experience
- HIST 3297 - Social History of Asian Americans

COLONIAL, NEO-COLONIAL, & POSTCOLONIAL WORLDS

- FREN 3140 - Contemporary Francophone Cultures
- FREN 3200 - The Francophone World in the Post-Colonial Era
- HIST 3232 - The American Colonies to 1750
- HIST 3350 - Colonial Latin America
- HIST 3451 - Introduction to African History
- HIST 3460 - Modern Latin American History

- HIST 3500 - African History in Novels and Films
- HIST 4051 - Britain and The Empire
- HIST 4416 - The Age of Imperialism
- HIST 4451 - Southern Africa
- HIST 4455 - African Struggle for Independence
- PSCI 3050 - Islamophobia
- PSCI 4115 - Third World Politics
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4605 - Politics and Governments of South Asia
- RLST 3500 - Religions of India
- SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial
- UNHL 3870 - History and Culture of Spanish-Speaking World

EUROPE

- GEOG 3120 - Geography of Europe
- HIST 3480 - Introduction to European History
- HIST 3706 - Age of Revolution
- HIST 4027 - Enlightenment and Revolution
- HIST 4028 - Nations and Classes: 19th Century Europe
- HIST 4029 - Age of Anxiety in Europe
- HIST 4303 - Sex and Gender in Modern Britain
- PSCI 4105 - Comparative Politics: Europe
- WGST 4345 - Gender, Science, and Medicine: 1600 to the Present
- HIST 4051 - Britain and The Empire
- HIST 4046 - Victorians and Victorianism
- UNHL 3825 - Irish Music, Peace, Politics, and Popular Culture
- WGST 4303 - Sex and Gender in Modern Britain
- FREN 3112 - Survey of French Literature I
- FREN 3120 - French Cultural Identities: Myths and Realities
- FREN 3122 - Survey of French Literature II
- FREN 3130 - Current Topics of the French-Speaking World
- FREN 4200 - French Civilization Through the Nineteenth Century
- FREN 4210 - French Civilization - Twentieth and Twenty-First Centuries
- FREN 4310 - Seventeenth Century Literature
- FREN 4360 - Eighteenth Century Novel, Theater and Poetry
- FREN 4430 - Nineteenth Century French Novel

- FREN 4480 - Twentieth Century French Novel
- FREN 4490 - Twentieth Century French Theater
- FREN 4510 - French Women Writers
- FREN 4600 - History of the French Language
- HIST 4062 - Modern France, 1789 to the Present
- GRMN 3110 - Introduction to German Literature I
- GRMN 3130 - Current Topics of the German-Speaking World
- GRMN 3200 - Current German Society and Culture
- GRMN 3230 - German Civilization I: From Medieval Through Age of Idealism
- GRMN 3240 - German Civilization II: The Modern Age
- GRMN 3310 - Techniques of Translation
- GRMN 3512 - Faust in Literature and Music
- GRMN 3540 - German Cinema and Society
- GRMN 4050 - Advanced German Phonetics and Language History
- HIST 4071 - Modern Germany
- HIST 4074 - Post-War Germany
- HIST 4086 - Eastern Europe
- PSCI 4505 - Political System of Russia and Its Neighbors
- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3199 - Topics in Spanish Literature
- SPAN 3221 - Culture and Civilization of Spain I
- SPAN 3222 - Culture and Civilization of Spain II
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3400 - Survey of Spanish Literature I
- SPAN 3410 - Survey of Spanish Literature II
- SPAN 3782 - Introduction to Translation I
- SPAN 3792 - Introduction to Translation II
- SPAN 4010 - History of the Spanish Language
- SPAN 4020 - Spanish Sociolinguistics
- SPAN 4110 - Contemporary Spanish Literature
- SPAN 4130 - Medieval Spanish Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4170 - Golden Age Drama
- SPAN 4180 - Modernism
- SPAN 4190 - Nineteenth-Century Spanish Novel
- SPAN 4300 - Generation of 1898
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain
- SPAN 4330 - Modern Culture of Spain through Film and Narrative

- SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature
- SPAN 4350 - Don Quijote
- SPAN 4360 - Women and the Spanish Civil War
- SPAN 4380 - Romanticism in Spain
- SPAN 4399 - Special Topics: Spanish Peninsular Literature
- SPAN 4501 - Borges: An Introduction to His Labyrinths

GLOBAL

- ANTH 3000 - Globalization, Migration and Transnationalism
- ANTH 3008 - Contemporary World Problems: An Anthropological Perspective
- ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers
- ANTH 4350 - Anthropology of Globalization
- CMDT 4682 - Commodity Valuation and Investment
- COMM 2082 - Introduction to Environmental Communication
- ECON 3415 - Issues in International Trade and Finance
- ENGL 4460 - Contemporary World Literature
- RISK 4950 - Special Topics: Cyber Risk Management & Cyber Warfare
- ECON 3770 - Issues in Economic Development
- FNCE 3600 - Financial Markets and Institutions
- GEOG 3412 - Globalization and Regional Development
- GEOG 4710 - Disasters, Climate Change, and Health
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- HIST 3616 - Global History of Energy
- HIST 4416 - The Age of Imperialism
- HIST 4417 - Commodities and Globalization
- HIST 4462 - Islam in Modern History
- HIST 4490 - Weapons of Mass Destruction
- HIST 4621 - Explorers and Exploration
- HIST 4622 - Oceans In History
- INTB 3000 - Global Perspectives
- MGMT 3830 - Business and Sustainability
- PBHL 3020 - Introduction to Environmental Health
- PSCI 3050 - Islamophobia
- PSCI 4025 - Local Governance and Globalization
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization

- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4365 - Global Ecological Crises
- SOCY 3720 - Global Perspectives on Social Issues

ISLAMIC WORLD

- HIST 4461 - The Modern Middle East
- HIST 4462 - Islam in Modern History
- PSCI 3050 - Islamophobia
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4736 - The Middle East in World Affairs
- RLST 3120 - Islamic Traditions

LATIN AMERICA

- ANTH 4320 - Archaeology of Mexico and Central America
- ETST 3129 - Contemporary Latin American Literature
- FINE 4610 - Pre-Columbian Art
- FINE 4630 - History of Latin American Art:1520-1820
- GEOG 3130 - Central America and the Caribbean
- GEOG 3140 - Geography of South America
- HIST 3350 - Colonial Latin America
- HIST 4411 - Modern Mexico
- HIST 4414 - Nationalism and State Building in Latin America, 1750-1850
- HIST 4415 - Social Revolutions in Latin America
- HIST 3460 - Modern Latin American History
- HIST 4414 - Nationalism and State Building in Latin America, 1750-1850
- HIST 4415 - Social Revolutions in Latin America
- SPAN 3212 - Spanish American Culture and Civilization
- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 4512 - Contemporary Argentine Short Stories
- SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial
- SPAN 4522 - Mexican Literature II: 19th to 21st Centuries
- SPAN 4525 - Orientalisms In The Hispanic Tradition
- SPAN 4541 - Unexpected Lives: Ibero-American Queer Cinema
- SPAN 4550 - Garcia Marquez: Words of Magic
- SPAN 4590 - Ibero-American Thought

- UNHL 3870 - History and Culture of Spanish-Speaking World

NORTH AMERICA

- GEOG 3110 - Geography of North America
- GEOG 3130 - Central America and the Caribbean
- GEOG 4350 - Environment and Society in the American Past
- HIST 3232 - The American Colonies to 1750
- HIST 3366 - Nature and Power in American History
- HIST 4411 - Modern Mexico
- HIST 4493 - United States History, 1945-1973
- HIST 4494 - Red and Blue America: U.S. History, 1973-Present
- PSCI 4444 - Contemporary Culture and Politics in America
- ETST 3110 - Indigenous Studies
- ETST 4726 - North American Indian Art
- HIST 3364 - Native Americans and Spaniards in North America
- HIST 3396 - History of the American Indian
- PSCI 3214 - Federal Law and American Indians
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- HIST 4220 - U.S. Foreign Policy Since 1912
- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4280 - The Politics of War Law
- EDFN 3000 - Undocumented Mexican Immigration
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 4412 - Mexico and the United States: People and Politics on the Border
- PSCI 3050 - Islamophobia
- PSCI 4545 - Immigration Politics
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 4076 - Spanish in Colorado
- SPAN 4080 - Spanish in the United States
- SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial
- SPAN 4522 - Mexican Literature II: 19th to 21st Centuries
- SPAN 4525 - Orientalisms In The Hispanic Tradition
- ETST 2024 - Race and Ethnic Relations
- ETST 3211 - Hip Hop Music & Culture

- ETST 3297 - Social History of Asian Americans
- ETST 3307 - Selected Topics: Asian Americans
- ETST 3357 - Asian American Literature
- ETST 3394 - Literature of Social Protest from an Ethnic Perspective
- ETST 3567 - Asian American Women
- ETST 3697 - Contemporary Asian American Experience
- ETST 4030 - Race, Religion and Belonging in the United States
- ETST 4220 - African-American Literature
- ETST 4515 - The African American in Politics
- ETST 4768 - Chicano/Chicana Narrative and Social History
- FREN 4520 - Voices of Haiti and the Caribbean
- HIST 3297 - Social History of Asian Americans
- HIST 3347 - African-American History, 1619-Present
- HIST 3348 - The African-American Protest Tradition, 1865 - Present
- HIST 3349 - Social Movements in 20th Century America
- HIST 3365 - Aztlan in the United States: Chicano History from 1821
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4225 - Urban America: Colonial Times to the Present
- HIST 4308 - Crime, Policing, and Justice in American History
- PSCI 4554 - Chicano and Latino Politics
- UNHL 3830 - Jazz in American Culture

Complete at least four courses from one Focus Theme, in at least two different disciplines:

Focus Themes:

- Activism, Resistance, & Social Justice
- Environmental Studies
- Ethnicity, Nationalism, & Migration
- Feminist Theory & Gender Studies
- Global Arts & Cultures
- Global Development Studies
- Global Health Studies
- International Business, Communication, & Media
- International Political Economy
- Peace, Human Rights, & Security

Note: Various Global Education/Study Abroad courses may not appear on the lists below. Please consult with an International Studies advisor for current offerings

ACTIVISM, RESISTANCE, AND SOCIAL JUSTICE

- ANTH 2400 - Exploring Culture through Social Media
- ANTH 3410 - Anthropology of Work
- ANTH 4070 - Culture of Development and Globalization
- ANTH 4230 - Anthropology and Community Based Participatory Research
- COMM 4040 - Communication, Prisons, and Social Justice
- COMM 4268 - Communication and Diversity in U.S. History
- COMM 3660 - Social Media for Social Change
- ECON 3100 - Economics of Race and Gender
- FINE 4450 - Social Engagement by Design
- HIST 3347 - African-American History, 1619-Present
- HIST 3348 - The African-American Protest Tradition, 1865 - Present
- HIST 3364 - Native Americans and Spaniards in North America
- HIST 4051 - Britain and The Empire
- HIST 4415 - Social Revolutions in Latin America
- HIST 4622 - Oceans In History
- PBHL 3070 - Perspectives in Global Health
- PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers
- PHIL 3200 - Social and Political Philosophy
- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PMUS 3110 - Social and Political Implications of American Music
- PSCI 3050 - Islamophobia
- PSCI 4914 - Community Organizing and Community Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4025 - Local Governance and Globalization
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4555 - International Women's Resistance
- PSCI 4807 - Political Violence
- SOCY 4460 - Hate Groups and Group Violence
- UNHL 3910 - Ideology and Revolution

ENVIRONMENTAL STUDIES

- ANTH 3006 - Sustainable Development and Equity
- ANTH 3210 - Urban Food Systems and Sustainability
- ANTH 4040 - Anthropology of Food and Nutrition

- ANTH 4070 - Culture of Development and Globalization
- ANTH 4150 - Human Biocultural Adaptability
- ANTH 4170 - Culture and the Environment
- ANTH 4260 - Human Reproductive Ecology
- ANTH 4450 - Development and Conservation: Contemporary Issues
- ANTH 4460 - Development and Conservation: Theory and Practice
- ANTH 4570 - Landscape Archaeology
- ECON 4530 - Economics of Natural Resources
- ECON 4540 - Environmental Economics
- ECON 4770 - Development Economics
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3412 - Globalization and Regional Development
- GEOG 3440 - Ecotourism
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4335 - Contemporary Environmental Issues
- HIST 3366 - Nature and Power in American History
- HIST 3616 - Global History of Energy
- PHIL 3430 - Environmental Ethics
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4365 - Global Ecological Crises
- UNHL 3625 - Food Justice: Urban Agriculture, Place, and Culture

ETHNICITY, NATIONALISM & MIGRATION

- ANTH 3000 - Globalization, Migration and Transnationalism
- ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers
- EDFN 3000 - Undocumented Mexican Immigration
- ENGL 3795 - Race and Ethnicity in American Literature
- ETST 3108 - Chicano/a and Latino/a History
- ETST 3110 - Indigenous Studies
- ETST 3357 - Asian American Literature
- ETST 3394 - Literature of Social Protest from an Ethnic Perspective
- ETST 3396 - History of the American Indian
- ETST 3567 - Asian American Women
- ETST 3616 - Selected Topics: American Indians
- ETST 3697 - Contemporary Asian American Experience

- ETST 3704 - Culture, Racism and Alienation
- ETST 4030 - Race, Religion and Belonging in the United States
- ETST 3838 - History of the Mexican American in Colorado
- ETST 4726 - North American Indian Art
- FREN 3120 - French Cultural Identities: Myths and Realities
- FREN 4520 - Voices of Haiti and the Caribbean
- GRMN 3200 - Current German Society and Culture
- HIST 3297 - Social History of Asian Americans
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3347 - African-American History, 1619-Present
- HIST 3348 - The African-American Protest Tradition, 1865 - Present
- HIST 3364 - Native Americans and Spaniards in North America
- HIST 3365 - Aztlan in the United States: Chicano History from 1821
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4461 - The Modern Middle East
- PSCI 3050 - Islamophobia
- PSCI 3214 - Federal Law and American Indians
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4554 - Chicano and Latino Politics
- SOCY 3020 - Race and Ethnicity in the U.S.
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain
- UNHL 3630 - Migration and Development

FEMINIST THEORY AND GENDER STUDIES

- ANTH 4200 - Gender in Cross-Cultural Perspective
- COMM 4020 - Feminist Perspectives on Communication
- ETST 3567 - Asian American Women
- ETST 4555 - International Women's Resistance
- ETST 4827 - Women and the Law
- FREN 4510 - French Women Writers
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PSCI 3035 - Political Movements: Race and Gender
- PSCI 4248 - Gender, Globalization and Development
- SPAN 4360 - Women and the Spanish Civil War

- WGST 4215 - Women's Rights, Human Rights: Global Perspectives
- WGST 4248 - Gender, Globalization and Development
- WGST 4303 - Sex and Gender in Modern Britain

GLOBAL ARTS & CULTURES

- ANTH 3142 - Cultural Diversity in the Modern World
- ANTH 4180 - The Nature of Power
- ARCH 3230 - Architectural History II
- CHIN 2970 - Contemporary Chinese Cinema
- CHIN 3300 - Special Topics on Chinese Film
- ENGL 4460 - Contemporary World Literature
- ENGR 3600 - International Dimensions of Technology and Culture
- ETST 3129 - Contemporary Latin American Literature
- ETST 4726 - North American Indian Art
- FINE 4450 - Social Engagement by Design
- FINE 4610 - Pre-Columbian Art
- FINE 4630 - History of Latin American Art:1520-1820
- FINE 4730 - Arts of Japan
- FINE 4750 - Arts of China
- FINE 4770 - Art of India and Southeast Asia
- FREN 4310 - Seventeenth Century Literature
- FREN 4360 - Eighteenth Century Novel, Theater and Poetry
- FREN 4430 - Nineteenth Century French Novel
- FREN 4480 - Twentieth Century French Novel
- FREN 4490 - Twentieth Century French Theater
- FREN 4510 - French Women Writers
- FREN 4520 - Voices of Haiti and the Caribbean
- GRMN 3512 - Faust in Literature and Music
- GRMN 3540 - German Cinema and Society
- HIST 4462 - Islam in Modern History
- PHIL 4650 - Differing Concepts of God
- PSCI 4057 - Religion and Politics
- PSCI 4146 - Indigenous Politics
- PSCI 4185 - Corruption in the U.S. and Abroad
- RLST 2660 - World Religions
- RLST 4000 - Religion and Cultural Diversity
- RLST 4420 - Goddess Traditions

- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3230 - Ibero-American Cultures through Film
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 3400 - Survey of Spanish Literature I
- SPAN 3410 - Survey of Spanish Literature II
- SPAN 3510 - Survey of Spanish American Literature II
- SPAN 4080 - Spanish in the United States
- SPAN 4110 - Contemporary Spanish Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4170 - Golden Age Drama
- SPAN 4180 - Modernism
- SPAN 4190 - Nineteenth-Century Spanish Novel
- SPAN 4300 - Generation of 1898
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain
- SPAN 4330 - Modern Culture of Spain through Film and Narrative
- SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature
- SPAN 4360 - Women and the Spanish Civil War
- SPAN 4380 - Romanticism in Spain
- FITV 3550 - World Theatre
- UNHL 3825 - Irish Music, Peace, Politics, and Popular Culture
- UNHL 3830 - Jazz in American Culture

GLOBAL DEVELOPMENT STUDIES

- ANTH 3006 - Sustainable Development and Equity
- ANTH 4070 - Culture of Development and Globalization
- ANTH 4450 - Development and Conservation: Contemporary Issues
- ANTH 4460 - Development and Conservation: Theory and Practice
- ECON 3400 - Economics of Sex and Drugs
- ECON 3770 - Issues in Economic Development
- ECON 4530 - Economics of Natural Resources
- ECON 4770 - Development Economics
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 3412 - Globalization and Regional Development
- GEOG 3440 - Ecotourism

- GEOG 4265 - Sustainability in Resources Management
- PSCI 4084 - Local Government and Administration
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- UNHL 3630 - Migration and Development

GLOBAL HEALTH STUDIES

- ANTH 3420 - Anthropology and Politics of the Global Tobacco Epidemic
- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4030 - Ethnobiology
- ANTH 4040 - Anthropology of Food and Nutrition
- ANTH 4060 - Evolutionary Medicine
- ANTH 4080 - Global Health Practice
- ANTH 4090 - Drug Syndemic
- ANTH 4150 - Human Biocultural Adaptability
- ANTH 4260 - Human Reproductive Ecology
- ANTH 4300 - Migrant Health
- ETST 3002 - Ethnicity, Health and Social Justice
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3501 - Geography of Health
- GEOG 4235 - GIS Applications in the Health Sciences
- HIST 4348 - Mind and Malady: A History of Mental Illness
- PBHL 3020 - Introduction to Environmental Health
- PBHL 2052 - Global Demography and Health
- PBHL 3041 - Health, Culture and Society
- PBHL 3070 - Perspectives in Global Health
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PBHL 4020 - Global Health: Comparative Public Health Systems
- PBHL 4080 - Global Health Practice
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PSCI 4365 - Global Ecological Crises

INTERNATIONAL BUSINESS, COMMUNICATION, & MEDIA

- ANTH 3121 - Language, Culture, and Communication
- ANTH 3142 - Cultural Diversity in the Modern World
- CHIN 1071 - Mandarin Chinese for the Professions
- COMM 3271 - Communication and Diversity

- COMM 4270 - Intercultural Communication
- COMM 4430 - Communication, China, and the US
- COMM 3660 - Social Media for Social Change
- COMM 4720 - Dynamics of Global Communication
- ENGL 3798 - International Perspectives in Literature and Film
- ENGR 3600 - International Dimensions of Technology and Culture
- ENGR 3995 - Global Technology, Business & Culture
- ETST 3272 - Global Media
- FREN 3140 - Contemporary Francophone Cultures
- FREN 3200 - The Francophone World in the Post-Colonial Era
- INTB 3000 - Global Perspectives
- INTB 4400 - Environments of International Business
- INTB 4950 - Special Topics in International Business
- MGMT 3000 - Managing Individuals and Teams
- MGMT 4410 - Operations of International Business
- MGMT 4834 - Global Sports & Entertainment Management
- MKTG 3000 - Principles of Marketing
- MKTG 4200 - International Marketing
- MKTG 4220 - Asian Business Development and Marketing
- MKTG 4580 - International Transportation
- PSCI 3347 - Film and Politics
- SPAN 3700 - Spanish for International Business I
- SPAN 3710 - Spanish for International Business II
- SPAN 3730 - Special Topics in Spanish for the Professions

INTERNATIONAL POLITICAL ECONOMY

- ACCT 2200 - Financial Accounting and Financial Statement Analysis
- ANTH 4090 - Drug Syndemic
- ECON 3400 - Economics of Sex and Drugs
- ECON 3415 - Issues in International Trade and Finance
- ECON 4081 - Intermediate Macroeconomic Theory
- ECON 4410 - International Trade
- ECON 4420 - International Finance
- FNCE 3000 - Principles of Finance
- FNCE 4370 - International Financial Management
- GEOG 3430 - Geography of Tourism
- INTB 3000 - Global Perspectives
- INTB 4028 - Global Study Topics

- INTB 4028/ ENTP 4028 - Global Study Topics
- INTB 4028/ PSCI 4995 - Global Study Topics
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4645 - Comparative Political Leadership
- RLST 4010 - Comparative Religious Systems

PEACE, HUMAN RIGHTS, & SECURITY

- ANTH 4180 - The Nature of Power
- ETST 2115 - Genocide in the 21st Century: Darfur and Beyond
- GEOG 4305 - Water Quality and Resources
- HIST 3121 - The World at War, 1914-1945
- HIST 3616 - Global History of Energy
- HIST 4220 - U.S. Foreign Policy Since 1912
- HIST 4490 - Weapons of Mass Destruction
- HIST 4471 - The Second World War
- HIST 4472 - The 1950s: Korean War, the Cold War and Social Transformation
- HIST 4475 - The Vietnam War
- PHIL 3280 - War and Morality
- PSCI 3050 - Islamophobia
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4216 - International Politics: Human Rights
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4236 - American Foreign Policy
- PSCI 4266 - International Law
- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4280 - The Politics of War Law
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4545 - Immigration Politics
- PSCI 4554 - Chicano and Latino Politics
- PSCI 4555 - International Women's Resistance
- PSCI 4807 - Political Violence
- SPAN 4360 - Women and the Spanish Civil War
- UNHL 3825 - Irish Music, Peace, Politics, and Popular Culture
- WGST 4215 - Women's Rights, Human Rights: Global Perspectives

Management Major - BS in Business Administration

Introduction

Please click [here](#) to see Business School information.

The management curriculum provides the foundation for careers in supervision and general management in a wide variety of organizations. It develops skills in management practice through an understanding of general management principles, individual and group behavior, organizational change and design and human resources management.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

Take **all** of the following required courses:

- MGMT 3010 - Managing People for a Competitive Advantage
- MGMT 4330 - Mastering Management
- MGMT 4350 - Leading Organizational Change
- MGMT 4370 - Organization Design
- MKTG 4050 - Applied Marketing Management

Take **two** of the following courses:

- ENTP 3200 - Essentials in Entrepreneurship
- Upper division MGMT elective (one or two may be taken for this requirement)

Note

Students also have the option to complete a management major with a specialization in Information Systems. [Click here to view this option.](#)

MANAGEMENT MAJOR - BS IN BUSINESS ADMINISTRATION WITH SPECIALIZATION IN INFORMATION SYSTEMS

Introduction

Please [click here](#) to see Business School information.

The management curriculum provides the foundation for careers in supervision and general management in a wide variety of organizations. It develops skills in management practice through an understanding of general management principles, individual and group behavior, organizational change and design and human resources management.

Information technology is the prime driver of business strategy. This specialization focuses on the strategic, technological, financial, and organizational issues involved with the effective management of information technology.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Take **all** of the following required courses:

- MGMT 3010 - Managing People for a Competitive Advantage
- MGMT 4330 - Mastering Management
- MGMT 4350 - Leading Organizational Change
- MGMT 4370 - Organization Design
- MKTG 4050 - Applied Marketing Management
- ISMG 3500 - Enterprise Data and Content Management
- ISMG 3600 - System Strategy, Architecture and Design
- ISMG 4900 - Project Management and Practice (also fulfills BGEN Experiential Learning requirement)

Take **two** of the following courses:

- ENTP 3200 - Essentials in Entrepreneurship
- Upper division MGMT elective (one or two may be taken for this requirement)

MARKETING MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please [click here](#) to see Business School information.

Marketing is concerned with directing the activities of the organization toward the satisfaction of customer wants and needs. This involves understanding customers, identifying those wants and needs that the organization can best serve, guiding the development of specific products or services, planning and implementing ways to take products or services to the market, securing the customer's order and finally, monitoring customer response in order to guide future activities.

In most organizations, marketing is a major functional area that provides a wide variety of career opportunities in such fields as personal selling and sales management, advertising and sales promotion, public relations, marketing research, physical distribution, product management, market management, marketing information systems and retail management. Increasingly, career opportunities exist in service businesses and nonprofit organizations.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Take **all** of the following required courses:

- MKTG 3100 - Marketing Research
- MKTG 4050 - Applied Marketing Management

Take any **six** upper-division MKTG prefixed courses, such as:

- MKTG 3200 - Consumer Behavior
- MKTG 3300 - Social Media in Business
- MKTG 4000 - Advertising
- MKTG 4200 - International Marketing
- MKTG 4250 - Sports Marketing
- MKTG 4251 - Music and Media Marketing
- MKTG 4620 - Customer Service Strategies
- MKTG 4700 - Personal Selling and Sales Management
- MKTG 4720 - Internet Marketing

- MKTG 4730 - New Product Development for Consumer and Sports Products
- MKTG 4760 - Customer Relationship Management
- MKTG 4780 - Preparing Business Plan
- MKTG 4950 - Special Topics

Note: Additional MKTG electives may be available. Please check the UCD Access course offerings each term.

For career paths in Marketing Strategy/Brand Management and Communications, the following courses are recommended:

- MKTG 3200 - Consumer Behavior
- MKTG 3300 - Social Media in Business
- MKTG 4000 - Advertising
- MKTG 4620 - Customer Service Strategies

Note

Students also have the option to complete a Marketing major with a specialization in Information Systems. [Click here to view this option.](#)

MANAGEMENT MAJOR - BS IN BUSINESS ADMINISTRATION WITH SPECIALIZATION IN INFORMATION SYSTEMS

Introduction

Please [click here](#) to see Business School information.

Marketing is concerned with directing the activities of the organization toward the satisfaction of customer wants and needs. This involves understanding customers, identifying those wants and needs that the organization can best serve, guiding the development of specific products or services, planning and implementing ways to take products or services to the market, securing the customer's order and finally, monitoring customer response in order to guide future activities.

In most organizations, marketing is a major functional area that provides a wide variety of career opportunities in such fields as personal selling and sales management, advertising and sales promotion, public relations, marketing research, physical distribution, product management, market management, marketing information systems, and retail management. Increasingly, career opportunities exist in service businesses and nonprofit organizations.

Within a specialization in Information Systems students can complement their individual interests as well as prior education and work experiences.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Requirements
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Take **all** of the following required courses:

- MKTG 3100 - Marketing Research
- MKTG 4050 - Applied Marketing Management
- ISMG 3500 - Enterprise Data and Content Management
- ISMG 3600 - System Strategy, Architecture and Design
- ISMG 4760 - Customer Relationship Management
- ISMG 4900 - Project Management and Practice (also fulfills the BGEN Experiential Learning requirement)

Take any **two** upper division MKTG prefixed courses:

- MKTG 3200 - Consumer Behavior
- MKTG 3300 - Social Media in Business

- MKTG 4000 - Advertising
- MKTG 4200 - International Marketing
- MKTG 4250 - Sports Marketing
- MKTG 4251 - Music and Media Marketing
- MKTG 4620 - Customer Service Strategies
- MKTG 4700 - Personal Selling and Sales Management
- MKTG 4720 - Internet Marketing
- MKTG 4730 - New Product Development for Consumer and Sports Products
- MKTG 4760 - Customer Relationship Management
- MKTG 4780 - Preparing Business Plan
- MKTG 4950 - Special Topics

For career paths in Marketing Strategy/Brand Management and Communications, the following courses are recommended:

- MKTG 3200 - Consumer Behavior
- MKTG 3300 - Social Media in Business
- MKTG 4000 - Advertising
- MKTG 4620 - Customer Service Strategies

MATHEMATICS - APPLIED OPTION BS

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 54 credit hours, including a minimum of 42 MATH credit hours and a minimum of 9 credit hours in ancillary coursework.
2. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must complete at least 15 of their upper-division level MATH credits with CU Denver faculty.
2. Students may not use any of the following MATH courses to count toward major requirements: MATH 3195, MATH 3511, MATH 3800, MATH 3999, and MATH 4830.

Take **one** of the following programming options:

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3200 - Elementary Differential Equations
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 4650 - Numerical Analysis I
- MATH 4733 - Partial Differential Equations
- MATH 4779 - Math Clinic

Take **two** approved MATH electives (at least six semester hours) above the 3000 level, excluding 3195, 3511, 3800, 3999, and 4830.

Take **three** additional courses (typically 3 courses), countable towards a major in one of the following subjects, at any level: Business, Biology, Chemistry, Computer Science, Economics, Geography and Environmental Science, Health and Behavioral Science, Physics or Sociology. Other areas allowable on a case-by-case basis.

MATHEMATICS - DATA SCIENCE OPTION BS

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 54 credit hours, including a minimum of 42 MATH credit hours and 9 credit hours in ancillary coursework.
2. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students may not use any of the following MATH courses to count toward major requirements: MATH 3195, MATH 3511, MATH 3800, MATH 3999, and MATH 4830.

Take **one** of the following programming requirements:

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics

- MATH 3191 - Applied Linear Algebra
- MATH 3376 - Data Wrangling & Visualization
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 4387 - Applied Regression Analysis
- MATH 4779 - Math Clinic

Take **three** approved MATH electives (at least nine semester hours) above the 3000 level, excluding 3195, 3511, 3800, 3999, and 4830.

Take **three** additional courses countable towards a major in one of the following subjects, at any level: Business, Biology, Economics, Health and Behavioral Sciences, Sociology. Other areas allowable on a case-by-case basis.

MATHEMATICS - PROBABILITY AND STATISTICS OPTION BS

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

2. Students must complete a total of 54 credit hours, including a minimum of 42 MATH credit hours and 9 credit hours in ancillary coursework.
3. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
4. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
5. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must complete at least 15 of their upper-division level MATH credits with CU Denver faculty.
2. Students may not use any of the following MATH courses to count toward major requirements: MATH 3195, MATH 3511, MATH 3800, MATH 3999, and MATH 4830.

Take **one of the following programming requirements:**

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I

- MATH 4387 - Applied Regression Analysis
- MATH 4810 - Probability

Take **one** of the following Mathematics courses:

- MATH 4779 - Math Clinic
- MATH 6330 - Workshop in Statistical Consulting

Take **one** of the following Probability and Statistics courses:

- MATH 4390 - Game Theory
- MATH 4394 - Experimental Designs
- MATH 4792 - Probabilistic Modeling
- MATH 5350 - Mathematical Theory of Interest
- ECON 4030 - Data Analysis with SAS

Take **two** approved MATH electives (at least six semester hours) above the 3000 level, excluding 3195, 3511, 3800, 3999, and 4830.

Take **three** additional courses (typically 9 credits) countable towards a major in one of the following subjects, at any level: Business, Biology, Economics, Health and Behavioral Sciences, Sociology. Other areas allowable on a case-by-case basis.

MATHEMATICS BS

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 45 credit hours, including a minimum of 42 MATH credit hours.
2. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must complete at least 15 of their upper-division level MATH credits with CU Denver faculty.
2. Students may not use any of the following MATH courses to count toward major requirements: MATH 3195, MATH 3511, MATH 3800, MATH 3999, and MATH 4830.

Take **one** of the following programming requirements:

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I

- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 4779 - Math Clinic

Take **five** approved MATH electives (at least fifteen semester hours) above the 3000 level, excluding MATH 3195, 3511, 3800, 3999, and 4830.

MECHANICAL ENGINEERING BS

Introduction

Please click [here](#) to see Mechanical Engineering department information.

The mechanical engineer is concerned with satisfying the needs of society using a combination of material, human and economic resources. Mechanical engineering covers a wide spectrum of activities in the engineering profession. These activities include the conversion and transmission of energy and associated power processes; the kinematic, dynamic, strength and wear considerations, as well as economic aspects of the development, design and use of materials, machines and processes; and the analysis, synthesis and control of entire engineering systems.

The program offered by the Department of Mechanical Engineering of the University of Colorado Denver can be completed in the afternoon and evening hours to accommodate both working and traditional students. The department seeks to graduate a diverse population of students with a bachelor's degrees who within a few years of graduation are able to:

1. be employed by a diverse group of industries, research laboratories and educational institutions
2. pursue careers in engineering, interdisciplinary areas, research and education
3. pursue postgraduate education and advanced degrees

The mechanical engineering curriculum begins with a strong emphasis on mathematics, physics and chemistry. It continues with a concentration in engineering sciences, including solid and fluid mechanics; thermodynamics, heat and mass transport; materials; and systems analysis and control. It concludes with laboratory and design courses that demonstrate the ways in which scientific knowledge is applied in the design and development of useful devices and manufacturing processes.

The mechanical engineering program may be roughly subdivided into two-year groupings. In the first two years, the program emphasizes the fundamentals of mathematics and basic science that are essential for an understanding of most branches of engineering. In the last two years of the program, the curriculum emphasizes engineering science and design and provides technical electives in the following areas:

- thermodynamics
- heat transfer
- fluid mechanics
- solid mechanics
- motorsports engineering
- power
- biomechanics
- dynamics and controls
- computer-aided design and manufacturing
- thermomechanical systems
- composite materials
- additive manufacturing

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Engineering, Design and Computing Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. CVEN 2121 and CVEN 3111 may be substituted for MECH 2023 and MECH 2033 respectively.
2. Not all courses may be offered every semester.

3. Students must maintain a minimum 2.0 GPA in all courses applying to major requirements.
4. Students must maintain a minimum 2.0 GPA in all MECH courses attempted.
5. Students must complete a minimum of 128 semester hours of course work.
6. The last 30 hours must be earned as a degree-seeking student in the College of Engineering, Design and Computing at CU Denver.

Take **all** of the following courses in Mechanical Engineering major:

- MECH 1025 - CAD and Graphics for Mechanical Engineering
- ENGR 1100 - Fundamentals of Computational Innovation
- ENGR 1200 - Fundamentals of Engineering Design Innovation

- MECH 2023 - Statics **or**
- CVEN 2121 - Analytical Mechanics I

- MECH 2033 - Dynamics **or**
- CVEN 3111 - Analytical Mechanics II

- ELEC 3030 - Electric Circuits and Systems
- MECH 1045 - Manufacturing Processes Design
- MECH 2024 - Introduction to Materials Science
- MECH 2034 - Properties of Engineering Materials
- MECH 3010 - Elementary Numerical Methods and Programming
- MECH 3012 - Thermodynamics
- MECH 3021 - Introduction to Fluid Mechanics
- MECH 3022 - Thermodynamics II
- MECH 3023 - System Dynamics I: Vibrations
- MECH 3027 - Measurements
- MECH 3028 - Laboratory of Mechanical Measurements
- MECH 3031 - Fluids/Thermal Laboratory
- MECH 3032 - Electric Circuits and Systems Lab
- MECH 3035 - Design of Mechanical Elements
- MECH 3042 - Heat Transfer
- MECH 3043 - Strength of Materials
- MECH 4035 - Senior Design I
- MECH 4045 - Senior Design II
- MECH 4142 - Thermal Systems Design

Take **6 semester hours** of Technical Electives:

- MECH 2208/4208/5208- Special Topics (Intro to Comp Fluid Dynamics, Buckling & Stability, Prototyping, Low Speed Aerodynamics, Feedback and Optimal Control, Tribology, Intermediate Controls, Road Vehicle Dynamics, IC Engines, Linear Optimal Control, Experimental Mechanics, Vehicle Instrumentation, LA Green Roof, Introduction to Aerodynamics, Vehicle Design, Polymer Viscoelasticity, Robotics).
- MECH 3045 - Principles of Additive Manufacturing
- MECH 3147 - Bioengineering
- MECH 3208 - Special Topics (Geometric Dimensioning/Tolerance)
- MECH 3939/5939 - Internship
- MECH 4020/5020 - Biomechanics
- MECH 4024 - Mechanical Behavior of Materials
- MECH 4025/5025 - Advanced Biomechanics
- MECH 4110 - Numerical Methods for Engineers
- MECH 4112 - Internal Combustion Engines
- MECH 4114 - Designing with Composites
- MECH 4116 - Robotics
- MECH 4120 - Methods of Engineering Analysis
- MECH 4141 - Fluid Mechanics
- MECH 4147 - Engineering Economy
- MECH 4155 - Air Conditioning Design
- MECH 4163 - Rigid-Body Dynamics
- MECH 4175 - Finite Element Analysis in Machine Design
- MECH 4176 - Introduction to Sports Engineering
- MECH 4177 - Energy Conversion
- MECH 4178 - Solar Engineering
- MECH 4179 - Introduction to Turbomachinery
- MECH 4228/5228 - Special Topic (New Product Design, New Product Development, Introduction to Turbulence)
- MECH 4238 - Special Topic (Road Vehicle Dynamics)

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3195 - Linear Algebra and Differential Equations

Take **all** of the following Science courses:

- CHEM 1130 - Engineering General Chemistry *
- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - General Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - General Physics Lab II

*ENGR 1130 is an acceptable substitute for CHEM 1130

MUSIC BUSINESS EMPHASIS, AUDITION TRACK, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The music business emphasis prepares musicians for careers in such fields as artist management, music publishing, concert promotion, record production, venue management, label promotion, distribution and entertainment law.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- The Bachelor of Science (BS) in Music has a competitive application process. Please refer to the Department of Music & Entertainment Industry Studies website for detailed guidelines and information.
- Students who wish to pursue the music business emphasis, audition track, are required to pass an entrance audition on their primary instrument or voice as part of the application process and to pass varying levels of performance proficiency as part of the curriculum. Please contact the College of Arts & Media at CAM@ucdenver.edu for further information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Musicianship course groups:

- PMUS 1100 - Music Theory I
- PMUS 1110 - Ear Training and Sight Singing I
- PMUS 1023 - Piano Class I

- PMUS 1200 - Music Theory II
- PMUS 1210 - Ear Training and Sight Singing II
- PMUS 1024 - Piano Class II

- PMUS 2100 - Music Theory III
- PMUS 2110 - Ear Training and Sight Singing III
- PMUS 1025 - Piano Class III

- PMUS 2200 - Jazz Theory
- PMUS 1026 - Piano Class IV

- PMUS 1____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital (1 semester hour)

- PMUS____ Ensemble (1 semester hour) **Note:** Students must complete PMUS 1470 - Performance Practice Ensemble during their first or second semester of Applied Instrument/Voice.
- PMUS 1____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital (1 semester hour)
- PMUS____ Ensemble (1 semester hour)
- PMUS 2____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital (1 semester hour)
- PMUS____ Ensemble (1 semester hour)
- PMUS 2____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital (1 semester hour)
- PMUS____ Ensemble (1 semester hour)

Take **all** of the following Musicianship courses:

- PMUS 3832 - Music in Culture
- PMUS____ Music History Elective
- PMUS or MUSC____ Music Elective (3 semester hours)
- PMUS____ Ensemble (1 semester hour)
- PMUS____ Ensemble (1 semester hour)

Take the following Music & Entertainment Industry Studies Core course:

- MUSC 1540 - Introduction to Audio Production

Take **all** of the following Music Business Emphasis courses:

- MUSC 2700 - Introduction to Music Business
- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management
- MUSC 3690 - Concert Promotion and Venue Management
- MUSC 3700 - Music and Entertainment Business in the Digital Age
- MUSC 3710 - CAM Records
- MUSC 3755 - Music Publishing
- MUSC 3720 - Law and the Music Industry
- MUSC 4740 - Music Business Analysis
- MUSC 4890 - Music Business Senior Seminar

Take **six** semester hours of Music Business elective.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

MUSIC BUSINESS EMPHASIS, NON-AUDITION TRACK, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The music business emphasis prepares undergraduates for careers in such fields as artist management, music publishing, concert promotion, record production, venue management, label promotion, distribution and entertainment law.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- The Bachelor of Science (BS) in Music has a competitive application process. Please refer to the Department of Music & Entertainment Industry Studies website for detailed guidelines and information.
- Students who wish to pursue the music business emphasis, non-audition track, are not required to complete an audition as part of the application process. Students will be assessed for varying levels of performance proficiency as part of the curriculum. Please contact the College of Arts & Media at CAM@ucdenver.edu for further information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Musicianship course groups:

- PMUS 1120 - Music Theory I
- PMUS 1119 - Ear Training and Sight Singing I
- PMUS 1500 - General Recital (2 semester hours)

Take **one** of the following Musicianship courses:

- PMUS 1023 - Piano Class I
- PMUS 1040 - Class Guitar

Take **one** of the following Musicianship courses:

- PMUS 1023 - Piano Class I
- PMUS 1024 - Piano Class II
- PMUS 1040 - Class Guitar
- PMUS 1041 - Class Guitar II
- PMUS 1050 - Voice Class I

Take **all** of the following Musicianship courses:

- PMUS 3832 - Music in Culture
- PMUS___ Music History Elective
- Music Elective (6 semester hours)

Take the following Music & Entertainment Industry Studies Core course:

- MUSC 1540 - Introduction to Audio Production

Take **all** of the following Music Business Emphasis courses:

- MUSC 2700 - Introduction to Music Business
- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management
- MUSC 3690 - Concert Promotion and Venue Management
- MUSC 3700 - Music and Entertainment Business in the Digital Age
- MUSC 3710 - CAM Records
- MUSC 3720 - Law and the Music Industry
- MUSC 3755 - Music Publishing
- MUSC 4740 - Music Business Analysis
- MUSC 4890 - Music Business Senior Seminar

Take **twenty-seven** semester hours of Music Business Emphasis electives.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approval electives and more information about this emphasis.

PERFORMANCE EMPHASIS, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The performance emphasis includes specialized courses in small performance ensembles, applied private study, contemporary improvisation, and analysis and history. Students gain a diverse set of performance skills in commercial, jazz, classical and experimental music styles.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click here to go to information about declaring a major.
- The Bachelor of Science (BS) in Music has a competitive application process. Please refer to the Department of Music & Entertainment Industry Studies website for detailed guidelines and information.
- Students who wish to pursue the performance emphasis are required to pass an entrance audition on their primary instrument or voice as part of the application process and to pass varying levels of performance proficiency as part of the curriculum. This includes passing a Sophomore Proficiency on their primary instrument or voice in order to maintain performance emphasis status. Each student is also required to successfully complete a junior recital and the 2-credit PMUS 4200 Senior Recital Project. Please contact the College of Arts & Media at CAM@ucdenver.edu for further information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- Click here for information about Academic Policies

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 2700 - Introduction to Music Business
- MUSC 1540 - Introduction to Audio Production

Take **one** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management

Take **all** of the following Musicianship courses:

- PMUS 3832 - Music in Culture
- PMUS ____ Music History elective

Take **all** of the following Musicianship course groups:

- PMUS 1100 - Music Theory I
- PMUS 1110 - Ear Training and Sight Singing I
- PMUS 1023 - Piano Class I

- PMUS 1200 - Music Theory II
- PMUS 1210 - Ear Training and Sight Singing II
- PMUS 1024 - Piano Class II

- PMUS 2100 - Music Theory III
- PMUS 2110 - Ear Training and Sight Singing III
- PMUS 1025 - Piano Class III

- PMUS 2200 - Jazz Theory
- PMUS 1026 - Piano Class IV

- PMUS 1____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital

- PMUS ____ Ensemble (1 semester hour) *Note:* Students must complete PMUS 1470 - Performance Practice Ensemble during their first or second semester of Applied Instrument/Voice.

- PMUS 1____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS ____ Ensemble (1 semester hour)

- PMUS 2____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS ____ Ensemble (1 semester hour)

- PMUS 2____ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital

- PMUS ____ Ensemble (1 semester hour)
- Take **all** of the following Performance Emphasis course groups:
 - PMUS 3__ Applied Instrument/Voice (2 semester hours)
 - PMUS ____ Ensemble (1 semester hour)
- PMUS 3__ Applied Instrument/Voice (2 semester hours)
- PMUS ____ Ensemble (1 semester hour)
- PMUS 4__ Applied Instrument/Voice (2 semester hours)
- PMUS ____ Ensemble (1 semester hour)
- PMUS 4__ Applied Instrument/Voice (2 semester hours)
- PMUS ____ Ensemble (1 semester hour)

Take **all** of the following Performance Emphasis courses:

- PMUS 2050 - The Holistic Musician
- PMUS 3210 - Introduction to Teaching Private Music Lessons
- PMUS 4060 - Music Theory Analysis
- PMUS 4200 - Senior Recital Project

Take **fourteen** semester hours of Music electives. Specific elective courses may be required depending on student's primary instrument.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

PHILOSOPHY BA

Introduction

Please click [here](#) to see Philosophy department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in

individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Degree Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 36 PHIL credit hours.
2. Students must complete a minimum of 27 upper-division (3000-level and above) PHIL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 PHIL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Courses taken at other institutions must either be transferred as direct equivalent to a CU Denver course or be approved by an advisor in the Philosophy Department for application towards the major.
2. For those students who major in philosophy and minor in ethics, philosophy or philosophy of science, up to two courses can satisfy the requirements for both.
3. For those students who qualify for and fulfill the requirements of graduation with Honors, a total of at least 39 hours is required.

4. Courses not specifically listed here but offered by the Department may count toward the degree upon the approval of the Department Undergraduate Advisor.

Take **all** of the following required courses:

- PHIL 2441 - Logic, Language and Scientific Reasoning
- **or**
- PHIL 3440 - Introduction to Symbolic Logic
- **or**
- PHIL 3441 - Philosophical Reasoning Skills

- PHIL 3002 - Ancient Greek Philosophy
- PHIL 3022 - Modern Philosophy
- PHIL 3760 - Kant

Take **one** of the following upper division Social/Political Philosophy courses:

- PHIL 3200 - Social and Political Philosophy
- PHIL 3280 - War and Morality
- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PHIL 4500 - Feminist Philosophy

Take **one** of the following upper division Ethics courses:

- PHIL 3150 - History of Ethics
- PHIL 3250 - Business Ethics
- PHIL 3280 - War and Morality
- PHIL 3500 - Ideology Culture
- PHIL 3430 - Environmental Ethics
- PHIL 3550 - Philosophy of Death and Dying
- PHIL 4242 - Bioethics
- PHIL 4260 - Philosophy of Law
- PHIL 4500 - Feminist Philosophy

Take **one** of the following upper division Continental Philosophy courses:

- PHIL 4780 - Heidegger
- PHIL 4790 - Nietzsche
- PHIL 4833 - Existentialism
- PHIL 4500 - Feminist Philosophy

Take **one** of the following upper division American or Analytic Philosophy courses:

- PHIL 3032 - Twentieth Century Analytic Philosophy
- PHIL 4101 - Pragmatism: Classical American Philosophy

- PHIL 4300 - Philosophy of Mind
- PHIL 4350 - Philosophy of Science
- PHIL 4900 - John Dewey

Take **one** of the following history of Philosophy courses:

- PHIL 3005 - Roman and Early Medieval Philosophy
- PHIL 3010 - Medieval Philosophy
- PHIL 3022 - Modern Philosophy
- PHIL 3030 - Philosophies of the Good Life & Happiness
- PHIL 3032 - Twentieth Century Analytic Philosophy
- PHIL 4000 - 19th and 20th Century Continental Philosophy
- PHIL 4040 - Skepticism
- PHIL 4101 - Pragmatism: Classical American Philosophy
- PHIL 4150 - Twentieth Century Ethics
- PHIL 4220 - Aesthetics and the Philosophy of Art
- PHIL 4230 - Postmodernism
- PHIL 4735 - Rationalism
- PHIL 4740 - Empiricism
- PHIL 4770 - Hegel
- PHIL 4780 - Heidegger
- PHIL 4790 - Nietzsche
- PHIL 4795 - Marx and Marxism
- PHIL 4800 - Plato
- PHIL 4810 - Aristotle
- PHIL 4820 - Hume
- PHIL 4833 - Existentialism
- PHIL 4900 - John Dewey
- PHIL 4920 - Philosophy of Media and Technology

In addition to the above requirements, take **three** additional Philosophy electives, with at least **one** being at the upper division (3000 or above).

PHOTOGRAPHY EMPHASIS, FINE ARTS BFA

Introduction

Please click [here](#) to see general Visual Arts information.

Students in the photography emphasis develop skills in traditional and digital photography while refining their creative and conceptual approaches to the medium. The photography curriculum emphasizes individual artistic development that integrates the history of photography, critical theory and contemporary practice. Through an exploration of photographic techniques, students are given the tools to create visually compelling images that communicate their artistic ideas.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

QUESTIONS

For more information, please contact CAM@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Arts & Media Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
2. All upper-division visual arts courses must be taken at CU Denver unless approved otherwise by Department of Visual Arts faculty.
3. At least 27 semester hours of visual arts credits (at any level) must be taken at CU Denver.
4. At least 24 semester hours of total visual arts courses must be upper-division.

Take **all** of the following Foundations courses:

- FINE 1100 - Drawing I
- FINE 1150 - Introduction to Darkroom Photography
- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2155 - Introduction to Digital Photography
- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II

• Take **all** of the following Photography Emphasis courses:

- FINE 3156 - Photography Studio and Lighting
- FINE 3160 - Color and the Constructed Image
- FINE 3161 - The Silver Fine Print
- FINE 3162 - The Digital Fine Print
- FINE 3171 - Concepts and Processes in Photography
- FINE 3172 - Photography and Community
- FINE 4195 - Advanced Photography I
- FINE 4196 - Advanced Photography II

Take **all** of the following Visual Arts courses:

- FINE 3630 - History of Photography
- FINE 3631 - Photography: Theory and Criticism
- FINE 3635 - Photography Now
- FINE 4990 - Contemporary Art: 1960 to Present

Take **three** semester hours of Pre-20th Century Art History elective.

Take **three** semester hours of Studio Arts elective in an area outside of photography.

Take **nine** semester hours of Studio Arts electives.

Take **six** semester hours of Visual Arts electives. These may include studio, lecture, internship or art history courses.

Take the following Capstone course:

- FINE 4950 - Studio BFA Thesis

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

PHYSICS - PURE AND APPLIED PHYSICS OPTION BS

Introduction

Please click [here](#) to see Physics department information.

Students are strongly encouraged to consult with the Physics advisor, meet physics faculty engaged in Pure & Applied Physics research, attend departmental seminars, and explore ways that Physics relates to research undertaken by faculty in other disciplines.

For more information, contact:

Bodhi Rogers (Physics advisor)

Michael.B.Rogers@ucdenver.edu

Office:North Classroom 3123B

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 63 credits, including a minimum of 47 PHYS credit hours and 16 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 PHYS upper-division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 12 PHYS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must declare their intention to major in Physics by the time they have completed 60 semester hours
2. The introductory labs, PHYS 2351 and PHYS 2361, are required for all physics majors. If the department is unable to offer one or both of these labs then PHYS 2321 may be substituted for PHYS 2351 and PHYS 2341 may be substituted for PHYS 2361, upon prior advisor approval.
3. Students earning a Physics major cannot earn a Physics minor. A senior thesis is required for all students wishing to graduate with departmental honors. For all other students, the faculty encourages a senior thesis or project.

Take **all** of the following required courses:

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2351 - Applied Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2361 - Applied Physics Lab II
- PHYS 2711 - Vibrations and Waves
- PHYS 2811 - Modern Physics I
- PHYS 3120 - Methods of Mathematical Physics
- PHYS 3711 - Junior Laboratory I
- PHYS 3811 - Quantum Mechanics

Take **all** of the following ancillary courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3195 - Linear Algebra and Differential Equations OR
- MATH 3191 - Applied Linear Algebra and
- MATH 3200 - Elementary Differential Equations

Take **all** of the following Pure and Applied Physics track courses:

- PHYS 3211 - Analytical Mechanics
- PHYS 3411 - Thermal Physics
- PHYS 3721 - Junior Laboratory II
- PHYS 4331 - Principles of Electricity and Magnetism
- PHYS 4711 - Senior Laboratory I

(or a course in computational physics approved by advisor)

Take **six** 3000-level or above PHYS credit hours, including up to 3 semester hours of directed research or independent study.

POLITICAL SCIENCE - PUBLIC POLICY OPTION, BA

Introduction

Please click [here](#) to see Political Science department information.

This option was designed for students who desire to pursue careers in public policy and/or public administration in the public or nonprofit sectors. This BA track emphasizes the specifically political aspects of public policy processes and is grounded in political science theory and familiarity with American, Comparative and International politics. Courses will emphasize key policy issues confronting U.S. local, state and national decision makers and citizens. A focus on politics and the policy-making process will prepare students conceptually and methodologically to move beyond partisan politics to address how leaders can best mobilize resources to achieve constituent goals consistent with the public interest.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in

individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 39 PSCI credit hours.
2. Students must complete a minimum of 21 upper division (3000-level and above) PSCI credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 15 PSCI credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students with significant pre-existing political or civic engagement experience in the community, or for whom the experiential-learning requirement poses a hardship may petition the chair to waive the experiential-learning requirement; the overall requirement of 39 credit hours for Political Science graduation will still apply.

Take **all** of the following courses:

- PSCI 1001 - Introduction to Political Science: The Quest for Freedom and Justice
- PSCI 1101 - American Political System
- PSCI 2011 - Logic of Political Inquiry

Take **one** of the following American Politics courses:

- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3214 - Federal Law and American Indians
- PSCI 3347 - Film and Politics
- PSCI 3914 - The Urban Citizen
- PSCI 4014 - Media and Politics
- PSCI 4024 - State Politics: Focus Colorado
- PSCI 4025 - Local Governance and Globalization
- PSCI 4034 - Political Parties and Pressure Groups
- PSCI 4044 - The Presidency
- PSCI 4074 - Urban Politics
- PSCI 4075 - Gentrification and Social Equity
- PSCI 4084 - Local Government and Administration
- PSCI 4094 - Seminar: American Politics
- PSCI 4124 - Denver Politics
- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4330 - U.S. Health Policy
- PSCI 4354 - Environmental Politics
- PSCI 4414 - Non-Profits and Social Change
- PSCI 4444 - Contemporary Culture and Politics in America
- PSCI 4477 - Constitutional Law I
- PSCI 4487 - Constitutional Law II
- PSCI 4494 - Judicial Politics
- PSCI 4535 - Labor and Working Class Politics
- PSCI 4545 - Immigration Politics
- PSCI 4554 - Chicano and Latino Politics
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4827 - Women and the Law
- PSCI 4837 - Contemporary Issues in Civil Liberties
- PSCI 4914 - Community Organizing and Community Development

Take **two** of the following Public Policy and Administration courses:

- PSCI 2365 - Politics of Climate Change

- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3214 - Federal Law and American Indians
- PSCI 4009 - Politics of the Budgetary Process
- PSCI 4024 - State Politics: Focus Colorado
- PSCI 4025 - Local Governance and Globalization
- PSCI 4034 - Political Parties and Pressure Groups
- PSCI 4084 - Local Government and Administration
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4124 - Denver Politics
- PSCI 4236 - American Foreign Policy
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4330 - U.S. Health Policy
- PSCI 4354 - Environmental Politics
- PSCI 4414 - Non-Profits and Social Change
- PSCI 4914 - Community Organizing and Community Development
- PSCI 4934 - CU at the Capitol

Take **one** of the following Comparative Politics and International Relations courses:

- PSCI 3022 - Political Systems of the World
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4236 - American Foreign Policy
- PSCI 4266 - International Law
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4914 - Community Organizing and Community Development
- PSCI 3042 - Introduction to International Relations
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3050 - Islamophobia
- PSCI 4025 - Local Governance and Globalization
- PSCI 4105 - Comparative Politics: Europe
- PSCI 4115 - Third World Politics
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4185 - Corruption in the U.S. and Abroad

- PSCI 4186 - East Asia in World Affairs
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4216 - International Politics: Human Rights
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4225 - Democracy and Democratization
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4235 - Politics and Markets in Latin America
- PSCI 4237 - American National Security
- PSCI 4240 - International Security
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4280 - The Politics of War Law
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4365 - Global Ecological Crises
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4555 - International Women's Resistance
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4645 - Comparative Political Leadership
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4736 - The Middle East in World Affairs
- PSCI 4807 - Political Violence
- PSCI 4808 - Strategies of Peacebuilding
- PSCI 4914 - Community Organizing and Community Development

Take any **two** additional courses from the three fields above, plus take any **one** other upper or lower-division PSCI course.

Take **one** of the following Political Theory courses:

- PSCI 4207 - Theories of Social and Political Change
- PSCI 4265 - Social Justice And Globalization
- PSCI 4407 - Early Political Thought
- PSCI 4417 - Modern Political Thought
- PSCI 4427 - Law, Politics and Justice

- PSCI 4457 - American Political Thought

Take **one** of the following courses:

- PSCI 3914 - The Urban Citizen
- PSCI 3939 - Internship
- PSCI 4934 - CU at the Capitol
- PSCI 4995 - Global Study Topics

Students must complete a capstone experience by enrolling in the following course, any time after completing 27 credit hours in the Major.

- PSCI 4960 - Capstone in Political Science

POLITICAL SCIENCE BA

Introduction

Please click [here](#) to see Political Science department information.

Courses are distributed among the primary fields as listed in this section, i.e., American politics, comparative politics, international relations, political theory and public policy and administration.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements

- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

2. Students must complete a minimum of 39 PSCI credit hours.
3. Students must complete a minimum of 21 upper division (3000-level and above) PSCI credit hours.
4. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
5. Students must complete a minimum of 15 PSCI credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Exceptions to the coursework requirement of the Experiential Learning Requirement
 - In lieu of taking one of the identified courses, students may complete a substantial experiential learning project in a different PSCI class. The course instructor must certify with a written submission to the departmental undergraduate advisor that the experiential learning project in that course fulfills the departmental experiential learning requirement.
 - Students with preexisting significant political or civic engagement experience in the community (i.e., community and civic leadership work, or work with government agencies, on political campaigns, or in non-governmental organizations) or for whom the experiential learning requirement poses a hardship may petition the undergraduate advisor to waive the requirement.
 - **Note:** In either of these cases of exception to the Experiential Learning coursework requirement, 39 total credit hours in political science are still required for graduation.

Take **all** of the following required courses:

- PSCI 1001 - Introduction to Political Science: The Quest for Freedom and Justice
- PSCI 1101 - American Political System
- PSCI 2011 - Logic of Political Inquiry *

*This course must be taken by all majors as part of their first 24 credit hours in the program. If this requirement poses a hardship due to such issues as late-declaring

majors, scheduling problems, or students transferring in multiple credits, please contact the Department undergraduate advisor to craft a solution.

Take **two** political theory courses:

- PSCI 4057 - Religion and Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4407 - Early Political Thought
- PSCI 4417 - Modern Political Thought
- PSCI 4427 - Law, Politics and Justice
- PSCI 4457 - American Political Thought

Take **one** of the following American Politics courses:

- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3214 - Federal Law and American Indians
- PSCI 3347 - Film and Politics
- PSCI 3914 - The Urban Citizen
- PSCI 4009 - Politics of the Budgetary Process
- PSCI 4014 - Media and Politics
- PSCI 4024 - State Politics: Focus Colorado
- PSCI 4025 - Local Governance and Globalization
- PSCI 4034 - Political Parties and Pressure Groups
- PSCI 4044 - The Presidency
- PSCI 4074 - Urban Politics
- PSCI 4075 - Gentrification and Social Equity
- PSCI 4084 - Local Government and Administration
- PSCI 4094 - Seminar: American Politics
- PSCI 4124 - Denver Politics
- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4330 - U.S. Health Policy
- PSCI 4354 - Environmental Politics
- PSCI 4414 - Non-Profits and Social Change
- PSCI 4444 - Contemporary Culture and Politics in America
- PSCI 4477 - Constitutional Law I
- PSCI 4487 - Constitutional Law II
- PSCI 4494 - Judicial Politics
- PSCI 4535 - Labor and Working Class Politics
- PSCI 4545 - Immigration Politics

- PSCI 4554 - Chicano and Latino Politics
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4827 - Women and the Law
- PSCI 4837 - Contemporary Issues in Civil Liberties
- PSCI 4914 - Community Organizing and Community Development

Take **one** of the following Comparative Politics courses:

- PSCI 3022 - Political Systems of the World
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4105 - Comparative Politics: Europe
- PSCI 4115 - Third World Politics
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4186 - East Asia in World Affairs
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4225 - Democracy and Democratization
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4555 - International Women's Resistance
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4645 - Comparative Political Leadership
- PSCI 4807 - Political Violence
- PSCI 4914 - Community Organizing and Community Development

Take **one** of the following International Politics courses:

- PSCI 3042 - Introduction to International Relations
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3050 - Islamophobia
- PSCI 4025 - Local Governance and Globalization
- PSCI 4105 - Comparative Politics: Europe
- PSCI 4115 - Third World Politics

- PSCI 4126 - Introduction to International Political Economy
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4185 - Corruption in the U.S. and Abroad
- PSCI 4186 - East Asia in World Affairs
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4216 - International Politics: Human Rights
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4225 - Democracy and Democratization
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4235 - Politics and Markets in Latin America
- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4240 - International Security
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4266 - International Law
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4280 - The Politics of War Law
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4365 - Global Ecological Crises
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4555 - International Women's Resistance
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4736 - The Middle East in World Affairs
- PSCI 4807 - Political Violence
- PSCI 4808 - Strategies of Peacebuilding

- PSCI 4878 - War, Film, and International Law

Take **one** of the following Experiential Learning courses (see exception policy, above):

- PSCI 2939 - Internship
- PSCI 3000 - Topics: Conference Participation
- PSCI 3840 - Independent Study: PSCI
- PSCI 3914 - The Urban Citizen
- PSCI 3939 - Internship
- PSCI 4840 - Independent Study: PSCI
- PSCI 4880 - Directed Research
- PSCI 4914 - Community Organizing and Community Development
- PSCI 4934 - CU at the Capitol
- PSCI 4995 - Global Study Topics

Take the following course:

- PSCI 4960 - Capstone in Political Science (Students can only enroll in this course after they have completed at least 27 credit hours in the major)

Take **three** additional Political Science(PSCI) elective courses

PSYCHOLOGY BA

Introduction

Please click [here](#) to see Psychology department information.

The College of Liberal Arts and Sciences also offers a Psychology BS degree.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus and online program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 37 PSYC credit hours.
2. Students must complete a minimum of 16 upper division (3000-level and above) PSYC credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 16 upper division (3000-level and above) PSYC credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. PSYC 3939, Internship/Cooperative Education, does NOT count toward the 37- hour minimum or the 16-hour upper-division requirement, but it does count as elective psychology credit.
2. Topics courses (PSYC 3600): See your advisor to determine if they count as Group A or Group B courses.
3. Many courses have prerequisites. Refer to the course descriptions for prerequisite information.
4. Students may not apply more than 56 PSYC credit hours to their degree.

Take **all** of the following required courses:

- PSYC 1000 - Introduction to Psychology I
- PSYC 1005 - Introduction to Psychology II
- PSYC 2090 - Statistics and Research Methods
- PSYC 2220 - Biological Basis of Behavior
- PSYC 3090 - Research Methods in Psychology
- PSYC 4511 - History of Psychology

Group A: Two Group A courses are required.

Take **one** of the following:

- PSYC 3222 - Principles of Learning and Behavior
- PSYC 3144 - Human Cognition

Take **one** of the following to reach a total of **two** Group A courses:

- PSYC 3104 - Behavioral Genetics
- PSYC 3144 - Human Cognition (if not taken above)
- PSYC 3222 - Principles of Learning and Behavior (if not taken above)
- PSYC 3254 - Introduction to Animal Behavior
- PSYC 3262 - Health Psychology
- PSYC 3263 - Hormones and Behavior
- PSYC 3264 - Exercise, Brain and Behavior
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3385 - Psychology of Mindfulness
- PSYC 3724 - Developmental Psychobiology
- PSYC 3810 - Neuropsychology
- PSYC 3822 - Aging, Brain and Behavior
- PSYC 3832 - Neural Basis of Learning
- PSYC 4054 - Behavioral Neuroscience
- PSYC 4164 - Psychology of Perception

Group B: Three Group B courses required.

Take **two** of the following courses:

- PSYC 3205 - Human Development I: Child Psychology
- PSYC 3305 - Abnormal Psychology
- PSYC 3415 - Experimental Social Psychology

Take **one** of the following to reach a total of **three** Group B courses:

- PSYC 3145 - Industrial and Organizational Psychology
- PSYC 3205 - Human Development I: Child Psychology (if not taken above)
- PSYC 3215 - Human Development II: Adolescence and Adulthood
- PSYC 3235 - Human Sexuality
- PSYC 3305 - Abnormal Psychology (if not taken above)
- PSYC 3405 - Family Psychology
- PSYC 3415 - Experimental Social Psychology (if not taken above)

- PSYC 3505 - Psychology and the Law
- PSYC 3610 - Psychological Trauma
- PSYC 3611 - Psychology of Women
- PSYC 3612 - Domestic Abuse
- PSYC 3615 - Positive Psychology
- PSYC 4455 - Theories of Personality
- PSYC 4485 - Psychology of Cultural Diversity
- PSYC 4500 - Psychotherapy
- PSYC 4730 - Clinical Psychology: Ethics and Issues

Take **one** additional course from either Group A or Group B not already taken to fulfill that group requirement.

PSYCHOLOGY BS

Introduction

Please click [here](#) to see Psychology department information.

The College of Liberal Arts and Sciences also offers a Psychology BA degree.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum

- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 54-58 credit hours, including a minimum of 31 PSYC credit hours and 23-27 credit hours in ancillary course work.
2. Students must complete a minimum of 16 upper division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 16 upper division (3000-level and above) PSYC credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. An experiential learning component is required and must be approved by the Bachelor of Science academic advisor. To fulfill the experiential learning requirement a student must have a minimum overall GPA of 2.5 or higher. Fulfilling this requirement with a project outside of the Psychology Department requires prior approval by the Bachelor of Science academic advisor. Independent study or internship credit hours taken outside of the Psychology Department will not count as Psychology credit hours.
2. A maximum of 56 semester hours of PSYC coursework will count toward graduation.

Take **all** of the following required courses:

- PSYC 1000 - Introduction to Psychology I
- PSYC 1005 - Introduction to Psychology II
- PSYC 2090 - Statistics and Research Methods
- PSYC 2220 - Biological Basis of Behavior
- PSYC 3090 - Research Methods in Psychology
- PSYC 4054 - Behavioral Neuroscience

Take **one** of the following courses:

- PSYC 3205 - Human Development I: Child Psychology
- PSYC 3305 - Abnormal Psychology
- PSYC 3415 - Experimental Social Psychology

Take **two** of the following courses:

- PSYC 3104 - Behavioral Genetics
- PSYC 3222 - Principles of Learning and Behavior
- PSYC 3254 - Introduction to Animal Behavior
- PSYC 3262 - Health Psychology
- PSYC 3263 - Hormones and Behavior
- PSYC 3264 - Exercise, Brain and Behavior
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3724 - Developmental Psychobiology
- PSYC 3810 - Neuropsychology
- PSYC 3822 - Aging, Brain and Behavior
- PSYC 3832 - Neural Basis of Learning
- PSYC 4164 - Psychology of Perception

Take **3 semester hours** from the following (all require consultation with BS advisor AND permission of instructor):

- PSYC 3939 - Internship (2.75 GPA required)
- PSYC 4111 - Senior Seminar in Psychology: Career Capstone
- PSYC 4840 - Independent Study: PSYC (2.5 GPA required)
- PSYC 4880 - Directed Research : PSYC (2.5 GPA required)

Honors Project in Psychology (3.5 GPA required): See honors project requirements

Take **all** of the following required courses:

- BIOL 2051 - General Biology I
- BIOL 2061 - General Biology II
- BIOL 2071 - General Biology Laboratory I
- BIOL 2081 - General Biology Laboratory II
- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II

Take **two** of the following courses:

- BIOL 3225 - Human Physiology
- BIOL 3244 - Human Anatomy
- BIOL 3445 - Introduction to Evolution
- BIOL 3611 - General Cell Biology
- BIOL 3621 - Introduction to Immunology

- BIOL 3654 - General Microbiology
- BIOL 3832 - General Genetics
- BIOL 4134 - Human Genetics
- BIOL 4165 - Neurobiology
- CHEM 3810 - Biochemistry
- CHEM 4810 - General Biochemistry I
- CHEM 4820 - General Biochemistry II

PUBLIC HEALTH BA

Introduction

Please click [here](#) to see Health and Behavioral Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

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[Click here](#) for BS in Public Health

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements

- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 43 credit hours, including a minimum of 29 PBHL credit hours and a minimum of 14 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 upper-division (3000-level and above) PBHL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 26 PBHL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must complete PBHL 3020, 3001, 3030, 3070, 4040 and 4099 with CU Denver faculty.

Take **all** of the following required courses:

- PBHL 2001 - Introduction To Public Health
- PBHL 3020 - Introduction to Environmental Health
- PBHL 3001 - Introduction to Epidemiology
- PBHL 3030 - Health Policy
- PBHL 3070 - Perspectives in Global Health
- PBHL 4040 - Social Determinants of Health
- PBHL 4099 - Capstone Experience in Public Health

Take **one** of the following Quantitative Methods courses, or another statistics course that has been approved by the undergraduate program director/advisor in advance:

- ANTH 4050 - Quantitative Methods in Anthropology
- BIOL 3763 - Biostatistics
- MATH 2830 - Introductory Statistics
- MATH 4830 - Applied Statistics
- PSYC 2090 - Statistics and Research Methods

Take **two** PBHL electives from the following list:

- PBHL 3002 - Ethnicity, Health and Social Justice

- PBHL 2052 - Global Demography and Health
- PBHL 3010 - Human Sexuality and Public Health
- PBHL 3021 - Fundamentals of Health Promotion
- PBHL 3031 - Health, Human Biology and Behavior
- PBHL 3041 - Health, Culture and Society
- PBHL 3051 - Mental Illness and Society
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers
- PBHL 3440 - Medical Sociology
- PBHL 3939 - Internship
- PBHL 3999 - Special Topics in Public Health
- PBHL 4020 - Global Health: Comparative Public Health Systems
- PBHL 4021 - Community Health Assessment
- PBHL 4031 - Ethnographic Research In Public Health
- PBHL 4060 - Evolutionary Medicine
- PBHL 4080 - Global Health Practice
- PBHL 4090 - Drug Syndemic
- PBHL 4110 - Public Health Perspectives On Family Violence
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PBHL 4999 - Topics in Public Health

Take **one** elective from either the PBHL list (above) or the following list:

- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4080 - Global Health Practice
- ANTH 4290 - Anthropology and Public Health
- ANTH 4600 - Medical Anthropology
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4575 - Designing Health Messages
- COMM 4620 - Health Risk Communication
- ECON 5660 - Health Economics
- ENVS 1342 - Environment, Society and Sustainability
- ETST 3002 - Ethnicity, Health and Social Justice
- GEOG 3501 - Geography of Health
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4235 - GIS Applications in the Health Sciences
- HEHM 3100 - Introduction to Health Humanities
- HEHM 3570 - Death & Dying: Social & Medical Perspectives
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
- PHIL 4242 - Bioethics

- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3822 - Aging, Brain and Behavior
- SOCY 3440 - Medical Sociology
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- SOCY 4110 - Sociology of Health Care
- SOCY 4220 - Population Change and Analysis
- SOCY 4290 - Aging, Society and Social Policy

Biological Sciences Ancillary Courses

Option 1) Take **two** of the following Biological Sciences ancillary courses:

- BIOL 1550 - Basic Biology: Ecology and the Diversity of Life
- BIOL 1560 - Basic Biology: From Cells to Organisms
- ANTH 1303 - Introduction to Biological Anthropology

-OR-

Option 2) Take **all** of the following courses:

- BIOL 2051 - General Biology I
- BIOL 2071 - General Biology Laboratory I
- BIOL 2061 - General Biology II
- BIOL 2081 - General Biology Laboratory II

PUBLIC HEALTH BS

Introduction

Please click [here](#) to see Health and Behavioral Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

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[Click here for BA in Public Health](#)

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Degree Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences General Degree Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 73 credit hours, including a minimum of 26 PBHL credit hours and a minimum of 47 credit hours in ancillary coursework.
2. Students must complete a minimum of 16 upper-division (3000-level and above) PBHL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 26 PBHL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must complete PBHL 3020, 3001, 3030, 3070, 4040 and 4099 with CU Denver faculty.

2. Intro Experimental Physics labs I and II (PHYS 2321 and PHYS 2341) are specifically designed for students in non-Physics majors and can be paired with either College Physics (PHYS 2010 and PHYS 2020) or General Physics (PHYS 2311 and PHYS 2331) lectures. Students pursuing a second major in Physics should complete General Physics lectures (PHYS 2311 and PHYS 2331) and Applied Physics Labs (PHYS 2351 and PHYS 2361).

Take **all** of the following courses (five of the following courses must be taken at the University of Colorado Denver):

- PBHL 2001 - Introduction To Public Health
- PBHL 3020 - Introduction to Environmental Health
- PBHL 3001 - Introduction to Epidemiology
- PBHL 3030 - Health Policy
- PBHL 3070 - Perspectives in Global Health
- PBHL 4040 - Social Determinants of Health
- PBHL 4099 - Capstone Experience in Public Health

Take **one** of the following Quantitative Methods courses, OR another statistics course that has been approved by the undergraduate program director/advisor in advance:

- ANTH 4050 - Quantitative Methods in Anthropology
- BIOL 3763 - Biostatistics
- MATH 2830 - Introductory Statistics
- MATH 4830 - Applied Statistics
- PSYC 2090 - Statistics and Research Methods

Take **one** PBHL elective from the following list:

- PBHL 3002 - Ethnicity, Health and Social Justice
- PBHL 2052 - Global Demography and Health
- PBHL 3010 - Human Sexuality and Public Health
- PBHL 3021 - Fundamentals of Health Promotion
- PBHL 3031 - Health, Human Biology and Behavior
- PBHL 3041 - Health, Culture and Society
- PBHL 3051 - Mental Illness and Society
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers
- PBHL 3440 - Medical Sociology
- PBHL 3939 - Internship
- PBHL 3999 - Special Topics in Public Health
- PBHL 4020 - Global Health: Comparative Public Health Systems

- PBHL 4021 - Community Health Assessment
- PBHL 4031 - Ethnographic Research In Public Health
- PBHL 4060 - Evolutionary Medicine
- PBHL 4080 - Global Health Practice
- PBHL 4090 - Drug Syndemic
- PBHL 4110 - Public Health Perspectives On Family Violence
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PBHL 4999 - Topics in Public Health

Take **one** elective from either the PBHL list (above), from the following list or another course that has been approved by the undergraduate program director/advisor in advance:

- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4080 - Global Health Practice
- ANTH 4290 - Anthropology and Public Health
- ANTH 4600 - Medical Anthropology
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4575 - Designing Health Messages
- COMM 4620 - Health Risk Communication
- ECON 5660 - Health Economics
- GEOG 3501 - Geography of Health
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4235 - GIS Applications in the Health Sciences
- HEHM 3100 - Introduction to Health Humanities
- HEHM 3570 - Death & Dying: Social & Medical Perspectives
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
- PHIL 4242 - Bioethics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3822 - Aging, Brain and Behavior
- SOCY 3440 - Medical Sociology
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- SOCY 4220 - Population Change and Analysis
- SOCY 4290 - Aging, Society and Social Policy

Take **all** of the following lecture/lab courses:

- BIOL 2051 - General Biology I
- BIOL 2071 - General Biology Laboratory I
- BIOL 2061 - General Biology II
- BIOL 2081 - General Biology Laboratory II

Take **all** of the following additional math and science ancillary courses:

- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II
- CHEM 3411 - Organic Chemistry I
- CHEM 3418 - Organic Chemistry Lab I
- CHEM 3421 - Organic Chemistry II
- CHEM 3428 - Organic Chemistry Lab II
- MATH 1401 - Calculus I

Take **one** of the following sequences, referring to note 2 under Program Restrictions, Allowances and Recommendations for alternative Physics lab information:

Sequence A

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II

Or Sequence B

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II

PUBLIC SERVICE, BA

Introduction

The Bachelor of Arts in Public Service, offered by the School of Public Affairs, prepares the next generation of civic-minded leaders to take active roles in organizations that promote the common good, such as local, state, and federal government agencies and nonprofit and nongovernmental organizations. Coursework explores the history and values of public service while building real-world capacity in areas such as managing people and resources, designing and evaluating programs, collaborating with others and across sectors, making ethical decisions, and communicating effectively in diverse environments. All courses are available online, providing students with the flexibility to schedule courses around the reality of family and work demands while also engaging both local and fully online students in public service opportunities in their own communities. The BAPS program has been ranked #9 overall by SR Education Group's 2018 Best and Most Affordable Online Colleges, based upon a mix of #3 for quality and #22 for affordability. Students who choose to focus on nonprofit management also have the option to earn the nationally recognized Certified Nonprofit Professional (CNP) designation through the Nonprofit Leadership Alliance. As workforce demand increases in the government and nonprofit sectors, students will be ready to apply critical thinking and analytical skills to make a difference in the world.

Program Delivery

- Courses are offered on campus, online, and in hybrid formats.

Declaring This Major

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Bachelor of Arts in Public Service required 45 credit hours of coursework. Students must complete a minimum of 45 upper-division credit hours, 12 of which must be Public Service courses offered by the School of Public Affairs.
2. A maximum of 12 transfer credits may be applied to the major.

3. Students must receive a minimum C- grade in each undergraduate course applied to satisfy major or minor degree requirements and must maintain a 2.0 GPA overall in major or minor courses.

Complete all of the following required courses:

- PUAD 1001 - Introduction to Leadership and Public Service *
- PUAD 2001 - Management for Public Service
- PUAD 3001 - Financial Management for Public Service
- PUAD 3002 - Program Design, Evaluation, and Decision-Making
- PUAD 4001 - Ethics in Public Service
- PUAD 4002 - Leading for the Public Good
- PUAD 4003 - Effective Communication for Public Service

*This class also fulfills a Social Science requirement of the CU Denver core curriculum

Electives

Complete a total of 24 credit hours of electives, 12 of which must be Public Administration courses offered by the School of Public Affairs**, and 12 of which may be taken from other departments with advisor approval.

Public Administration Electives:

- PUAD 3005 - Collaboration Across Sectors
- PUAD 3110 - Seminar in Nonprofit Management
- PUAD 4006 - Organizational Development
- PUAD 4008 - Current Issues in Public Sector Organizations
- PUAD 4009 - Human Service Organizations
- PUAD 4010 - Public Service in Emergency Management and Homeland Security
- PUAD 4020 - Social Entrepreneurship
- PUAD 4140 - Nonprofit Financial Management
- PUAD 4145 - Philanthropy
- PUAD 4160 - Nonprofit Boards and Executive Leadership
- PUAD 4325 - Public Private Partnerships
- PUAD 4600 - Special Topics in Public Service
- PUAD 4630 - Economic Development
- PUAD 4740 - Sustainable Energy Policy
- PUAD 4939 - Public Service Internship

*The internship PUAD 4939, is required as one of the electives for the major unless officially waived by the BAPS Program Director, in which case a regular PUAD

elective may substitute. Students should direct questions and concerns to their Academic Advisor. See SPA Graduation Requirements for more information.

****Please consult your advisor for any other PUAD course you are considering as an elective in advance of enrolling in the course.**

Other Electives:

All courses taken from another department that you would like to count as an elective must be approved by your advisor in advance. Please contact your advisor directly to discuss any class you may be considering for elective credit that is not listed above.

PUBLIC SERVICE, BA WITH EMERGENCY MANAGEMENT CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

The Emergency Management concentration within the Bachelor of Arts in Public Service degree program allows students to learn how emergency management aims to reduce the harmful effects of all hazards, including disasters. Public servants respond to emergencies but also focus on preparedness, mitigation, resilience, and recovery. Students will be prepared to apply this knowledge in careers with government and nonprofit agencies.

Program Delivery

- All courses are offered online; certain courses are also offered on campus.

Declaring This Concentration

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. A concentration in Emergency Management requires 15 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the concentration.
3. A minimum grade of C- must be earned in each undergraduate course applied to satisfy the concentration requirements.

Complete **all** of the following required courses:

- PUAD 4010 - Public Service in Emergency Management and Homeland Security
- GEOG 2202 - Hazards to Disasters: Perception and Management
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment (Prerequisite: GEOG 2202)

Complete **2** electives (the mapping/GIS series is highly recommended):

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 4080 - Introduction to GIS
- CRJU 4450 - Homeland Security
- Other 3000- and 4000-level electives approved by the concentration director.

PUBLIC SERVICE, BA WITH ENVIRONMENTAL POLICY AND MANAGEMENT CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

The Environmental Policy and Management concentration within the Bachelor of Arts in Public Service degree program allows students to study the laws, regulations, and policy mechanisms that the government and organizations use to manage environmental issues. Environmental policy balances protection, conservation, and sustainability of natural resources with affordable energy and economic growth while understanding how human activities affect the environment. Students will be prepared to apply this specialized knowledge in careers with government and nonprofit agencies.

Program Delivery

- All courses are offered online; certain courses are also offered on campus

Declaring This Concentration

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. A concentration in Environmental Policy and Management requires 15 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the concentration.
3. A minimum grade of C- must be earned in each undergraduate course applied to satisfy the concentration requirements.

Complete **all** of the following required courses:

- PUAD 3500 - Managing and Leading in Environmental Organizations
- ENVS 1044 - Introduction to Environmental Sciences (Co-requisite: ENVS 1045 Lab)
- ENVS 1342 - Environment, Society and Sustainability

Complete **2** electives from the following list:

- ENVS 3082 - Energy and the Environment
- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 4080 - Introduction to GIS (Prereq: GEOG 2080)
- GEOG 4260 - Energy and Natural Resource Planning
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4305 - Water Quality and Resources
- GEOG 4335 - Contemporary Environmental Issues
- GEOG 4440 - Science, Policy and the Environment
- PSCI 4354 - Environmental Politics
- COMM 4282 - Environmental Communication

PUBLIC SERVICE, BA WITH INTERNATIONAL DEVELOPMENT CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

The International Development concentration within the Bachelor of Arts in Public Service degree program allows students to learn about the history of international development paradigms and understand the relationships among development actors and how they address persistent global problems such as poverty, human trafficking, trade, and human rights, as examples. International development explores economic growth, alleviating poverty, and improving living conditions in less developed countries. Students will be prepared to apply this knowledge in careers with government and nonprofit organizations.

Program Delivery

- All courses are offered online; certain courses are also offered on campus

Declaring This Concentration

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. A concentration in International Development requires 15 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the concentration.
3. A minimum grade of C- must be earned in each undergraduate course applied to satisfy the concentration requirements.

Students must complete the following required courses:

- PUAD 3600 - Managing and Leading in International Organizations
- PSCI 3042 - Introduction to International Relations - OR - PSCI 3022 - Political Systems of the World
- COMM 4270 - Intercultural Communication - OR - COMM 4720 - Dynamics of Global Communication (study abroad course)
- INTS 2020 - Foundations of International Studies

Students take **one** additional 3000- or 4000-level elective course. Examples of acceptable electives include but are not limited to:

- ANTH 4460 - Development and Conservation: Theory and Practice
- ECON 3415 - Issues in International Trade and Finance
- ETST 4146 - Indigenous Politics
- GEOG 3412 - Globalization and Regional Development
- GEOG 4301 - Population, Culture, and Resources
- HIST 4032 - Globalization in World History Since 1945
- HIST 4220 - U.S. Foreign Policy Since 1912
- IWKS 3600 - Innovating for the Developing World
- INTB 3000 - Global Perspectives
- PSCI 4266 - International Law
- PSCI 4365 - Global Ecological Crises
- PBHL 3070 - Perspectives in Global Health
- PBHL 4080 - Global Health Practice
- SOCY 3720 - Global Perspectives on Social Issues
- SOCY 4020 - Race, Culture and Immigration

PUBLIC SERVICE, BA WITH NONPROFIT MANAGEMENT CONCENTRATION

Introduction

Please click [here](#) to see School of Public Affairs information.

The Nonprofit Management concentration within the Bachelor of Arts in Public Service degree program prepares students for a wide variety of careers in the exciting world of nonprofit organizations. Students learn about the history and context of nonprofit organizations while gaining practical skills needed to manage and lead in this sector. The School of Public Affairs' affiliation with the Nonprofit Leadership Alliance gives students the opportunity to earn the nationally-recognized Certified Nonprofit Professional credential through completion of the concentration coursework, additional required extracurricular activities, and an examination. Contact cnp@ucdenver.edu for more information about this credential.

Program Delivery

- All courses are offered online; certain courses are also offered on campus.

Declaring This Concentration

- Please contact spa.advising@ucdenver.edu

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. A concentration in Nonprofit Management requires 15 credit hours of coursework.

2. A maximum of 6 transfer credits may be applied to the concentration.
3. A minimum grade of C- must be earned in each undergraduate course applied to satisfy the concentration requirements.

Complete the following required courses:

- PUAD 3110 - Seminar in Nonprofit Management
- PUAD 4140 - Nonprofit Financial Management

Choose 3 courses from the following list of Nonprofit electives:

- PUAD 3005 - Collaboration Across Sectors
- PUAD 4160 - Nonprofit Boards and Executive Leadership
- PUAD 4020 - Social Entrepreneurship
- PUAD 4600 - Special Topics in Public Service: Study Abroad in East Africa
- PUAD 4600 - Special Topics in Public Service: Social Problems and Policies in the Urban Environment

Certified Nonprofit Professional Designation:

- Students completing the Nonprofit Management concentration may choose to simultaneously earn the national Certified Nonprofit Professional designation from the Nonprofit Leadership Alliance by completing additional extracurricular requirements. Contact spa.advising@ucdenver.edu for more information.

RECORDING ARTS EMPHASIS, AUDITION TRACK, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The recording arts emphasis focuses on contemporary analog and digital technology as it is used in music recording, sound reinforcement and media applications (Internet, video games, interactive art installations, etc.). While mastering technology skills and formats, musicians also study the artistic and aesthetic applications of technology to recording, reinforcement, composition and performance.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- The Bachelor of Science (BS) in Music has a competitive application process. Please refer to the Department of Music & Entertainment Industry Studies website for detailed guidelines and information.
- Students who wish to pursue the recording arts emphasis, audition track, are required to pass an entrance audition on their primary instrument or voice as part of the departmental application process, and to pass varying levels of performance proficiency as part of the curriculum. Students must also gain admission to the recording arts emphasis before being able to take any of the upper-division (3000/4000 level) recording arts course work. Please see the recording arts website and contact the College of Arts & Media at CAM@ucdenver.edu for further information and any updates.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Musicianship course groups:

- PMUS 1100 - Music Theory I
- PMUS 1110 - Ear Training and Sight Singing I

- PMUS 1023 - Piano Class I

- PMUS 1200 - Music Theory II
- PMUS 1210 - Ear Training and Sight Singing II
- PMUS 1024 - Piano Class II

- PMUS 2100 - Music Theory III
- PMUS 2110 - Ear Training and Sight Singing III
- PMUS 1025 - Piano Class III

- PMUS 2200 - Jazz Theory
- PMUS 1026 - Piano Class IV

- PMUS 1___ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS___ Ensemble (1 semester hour) *Note:* Students must complete PMUS 1470 - Performance Practice Ensemble during their first or second semester of Applied Instrument/Voice.

- PMUS 1___ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS___ Ensemble (1 semester hour)

- PMUS 2___ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS___ Ensemble (1 semester hour)

- PMUS 2___ Applied Instrument/Voice (1 semester hour)
- PMUS 1500 - General Recital
- PMUS___ Ensemble (1 semester hour)

Take **all** of the following Musicianship courses:

- PMUS 3832 - Music in Culture
- PMUS ___ Music History Elective
- PMUS or MUSC___ Music Elective (3 semester hours)
- PMUS ___ Ensemble (1 semester hour)
- PMUS ___ Ensemble (1 semester hour)

Take **all** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 2700 - Introduction to Music Business
- MUSC 1541 - Audio Production I
- PMUS 1542 - Applied Bass Clarinet
- MUSC 1560 - Audio Production II

Take **one** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management

Take the following course:

- MUSC 1800 - Acoustics for Audio Production

Take **all** of the following Recording Arts Emphasis courses (available only to students accepted to emphasis):

- MUSC 2550 - Critical Listening for Recording Arts
- MUSC 2580 - Audio Production III
- MUSC 2590 - Mastering & Advanced Digital Audio
- MUSC 3505 - Introduction to Audio Post Production
- MUSC 3530 - Live Sound Reinforcement
- MUSC 4580 - Audio Production Seminar

Take **six** semester hours of Recording Arts Emphasis electives.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

RECORDING ARTS EMPHASIS, NON-AUDITION TRACK, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The recording arts emphasis focuses on contemporary analog and digital technology as it is used in music recording, sound reinforcement and media applications (Internet, video games, interactive art installations, etc.). While mastering technology skills and formats, students also study the artistic and aesthetic applications of technology to recording, reinforcement, composition and performance.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click here to go to information about declaring a major.
- Students who wish to pursue the recording arts emphasis, non-audition track, are not required to complete an audition as part of the departmental application process. Students will be assessed for varying levels of performance proficiency as part of the curriculum. Please see the recording arts website and contact the College of Arts & Media at CAM@ucdenver.edu for further information and any updates.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- Click here for information about Academic Policies

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Musicianship course groups:

- PMUS 1120 - Music Theory I
- PMUS 1119 - Ear Training and Sight Singing I

- PMUS 1211 - Ear Training and Sight Singing II

- PMUS 1500 - General Recital (2 semester hours)

- Take **all** of the following Musicianship courses:
 - PMUS 3832 - Music in Culture
 - PMUS ____ Music History Elective
 - PMUS or MUSC ____ Music Elective (3 semester hours)

- Take **one** of the following Musicianship courses (1 semester hour):
 - PMUS 1040 - Class Guitar
 - PMUS 1023 - Piano Class I

Take **one** of the following Musicianship courses:

- PMUS 1023 - Piano Class I
- PMUS 1024 - Piano Class II
- PMUS 1040 - Class Guitar
- PMUS 1041 - Class Guitar II
- PMUS 1050 - Voice Class I

Take **all** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 2700 - Introduction to Music Business
- MUSC 1541 - Audio Production I
- MUSC 1542 - Audio Production Lab
- MUSC 1560 - Audio Production II

Take **one** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management

Take the following course:

- MUSC 1800 - Acoustics for Audio Production

Take **all** of the following Recording Arts Emphasis courses:

- MUSC 2550 - Critical Listening for Recording Arts
- MUSC 2580 - Audio Production III
- MUSC 2590 - Mastering & Advanced Digital Audio
- MUSC 3530 - Live Sound Reinforcement
- MUSC 3505 - Introduction to Audio Post Production
- MUSC 4580 - Audio Production Seminar

Take **twenty eight** semester hours of Recording Arts Emphasis electives.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

RISK MANAGEMENT AND INSURANCE MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) for more information on this program.

The risk management and insurance major provides students with the fundamental knowledge needed to accurately measure and manage risk.

Recent crisis situations suggest that understanding risk and how to manage it, and ultimately, how risk management can be used to increase firm value, is essential in the current business environment. The RISK major will provide an overall perspective on risk, with a specific focus on insurance products and their use in mitigating risk in business and personal situations. The insurance industry recognizes many high-level certifications as a sign of expertise, and the RISK course work will provide the knowledge base so that students can proceed to acquire certification in their specific choice of insurance specialty.

Potential job opportunities include positions in the insurance industry and those that require a thorough understanding of risk, such as corporate risk officer or risk manager. In addition, students who choose to work in the insurance industry can make a seamless transition into underwriting, ratemaking, and policy approval. The program will be supported by a unique internship and special project opportunities in the insurance industry, and is the first program of its kind in the region.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. A grade of C or higher must be earned in all courses that are used as prerequisites. These are noted with an asterisk.

Take **all** of the following required courses:

- FNCE 3500 - Management of Business Capital *
- RISK 3809 - Introduction to Risk Management
- RISK 4809 - Property & Casualty Insurance
- RISK 4909 - Corporate Risk Management

Take **three** of the following courses:

- FNCE 3600 - Financial Markets and Institutions
- FNCE 3700 - Investment and Portfolio Management *
- FNCE 4500 - Corporate Financial Decisions *
- RISK 4129 - Practical Enterprise Risk Management
- RISK 4209 - Cyber Risk Management
- RISK 4309 - Strategic Risk Management
- RISK 4509 - Global Risk Management
- RISK 4609 - Claims Management
- RISK 4709 - Life & Health Insurance
- RISK 4950 - Special Topics: Cyber Risk Management & Cyber Warfare

Note

All RISK majors are required to complete RISK 3949 (internship) to fulfill BGEN Experiential Learning.

All RISK courses have a fixed tuition rate. However, students have the option to apply for RMI scholarships for each RISK course they take (one scholarship per semester).

SINGER/SONGWRITER EMPHASIS, MUSIC BS

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

Students in the singer/songwriter emphasis complete specialized courses in songwriting and arranging repertoire while developing their performance skills through small performance ensembles and applied private study of voice, accompanying instrument and songwriting.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major.
- The Bachelor of Science (BS) in Music has a competitive application process. Please refer to the Department of Music & Entertainment Industry Studies website for detailed guidelines and information.
- Students who wish to pursue the singer/songwriter emphasis are required to pass a singer/songwriter audition on their accompanying instrument AND voice as part of the application process, and to pass varying levels of performance proficiency as part of the curriculum. This includes passing a Sophomore Proficiency in order to maintain singer/songwriter emphasis status. Each student is also required to successfully complete a junior recital and the 2-credit PMUS 4200 - Senior Recital Project. Please contact the College of Arts & Media at CAM@ucdenver.edu for further information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Arts & Media Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To earn a BS in Music, students must complete musicianship courses, Music & Entertainment Industry Studies core courses and requirements from one of the four emphasis areas: performance, singer/songwriter, music business or recording arts.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

Take **all** of the following Music & Entertainment Industry Studies Core courses:

- MUSC 1540 - Introduction to Audio Production
- MUSC 2700 - Introduction to Music Business
- MUSC 3210 - Music and Entertainment Marketing
- MUSC 3220 - Artist Management
- MUSC 3755 - Music Publishing

Take **all** of the following Musicianship course groups:

- PMUS 1100 - Music Theory I
 - PMUS 1110 - Ear Training and Sight Singing I
 - PMUS 1023 - Piano Class I

 - PMUS 1200 - Music Theory II
 - PMUS 1210 - Ear Training and Sight Singing II
 - PMUS 1024 - Piano Class II

 - PMUS 2100 - Music Theory III
 - PMUS 2110 - Ear Training and Sight Singing III
 - PMUS 1025 - Piano Class III
- Take **one** of the following Musicianship courses:

- PMUS 1026 - Piano Class IV
- PMUS 2750 - Functional Guitar Skills: Acoustic Guitar Styles
- PMUS 2751 - Functional Guitar Skills: Electric Guitar Styles

- Take **all** of the following Musicianship courses:
- PMUS 3832 - Music in Culture
- PMUS__ Music History Elective

- PMUS 2050 - The Holistic Musician
- Music Elective (2 semesters)

Take **all** of the following Singer/Songwriter Emphasis course groups:

- **Either** PMUS 1574 - Applied Guitar, Singer/Songwriter **or** PMUS 1644 - Applied Piano, Singer/Songwriter *Note:* Students must complete both semesters of applied instrument lessons on their primary audition instrument.
- PMUS 1500 - General Recital
- PMUS____ Ensemble (1 semester hour) **Note:** Students must complete PMUS 1470 - Performance Practice Ensemble during their first or second semester of Applied Music.

- **Either** PMUS 1574 - Applied Guitar, Singer/Songwriter **or** PMUS 1644 - Applied Piano, Singer/Songwriter *Note:* Students must complete both semesters of applied instrument lessons on their primary audition instrument.
- PMUS 1500 - General Recital
- PMUS____ Ensemble (1 semester hour)

- PMUS 1734 - Applied Voice, Singer/Songwriter
- PMUS 1500 - General Recital
- PMUS____ Ensemble (1 semester hour)

- PMUS 1734 - Applied Voice, Singer/Songwriter
- PMUS 1500 - General Recital
- PMUS____ Ensemble (1 semester hour)

- PMUS 3772 - Applied Singer/Songwriter
- PMUS____ Ensemble (1 semester hour)

- PMUS 3772 - Applied Singer/Songwriter
- PMUS____ Ensemble (1 semester hour)

- PMUS 4772 - Applied Singer/Songwriter
- PMUS____ Ensemble (1 semester hour)

- PMUS 4772 - Applied Singer/Songwriter
- PMUS____ Ensemble (1 semester hour)

Take **all** of the following Singer/Songwriter Emphasis courses:

- PMUS 2320 - Songwriting Analysis
- PMUS 3200 - Popular Music Performance Skills
- PMUS 3310 - Intermediate Songwriting
- PMUS 3320 - Popular Music Arranging
- PMUS 4310 - Advanced Songwriting
- PMUS 4200 - Senior Recital Project

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this emphasis.

SOCIOLOGY BA

Introduction

Please click [here](#) to see Sociology department information.

Sociology is the study of social relations, interactions, and institutions. Using quantitative and qualitative scientific methods, it offers a unique way of seeing and understanding the social world and how it shapes individual lives and history. Sociology's subject matter is broad and diverse. Some of the topics covered are criminology, religion, families, inequalities between social groups, childhood, youth, adulthood and old age, social stability and social change, urban issues, environment, technology, education, and health.

All prospective majors should contact the undergraduate advisor in Sociology as early in their academic careers as possible for information about the degree requirements. Transfer or returning students should consult with the undergraduate advisor in Sociology concerning completion of the core courses.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their Sociology advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.
- This program is also offered online.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 32 SOCY credit hours.
2. Students must complete a minimum of 16 upper-division (3000-level and above) SOCY credit hours.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 13 SOCY credit hours with CU Denver faculty.

Program Allowances and Restrictions:

1. The maximum number of hours allowed in sociology is 56.
2. Students must take a minimum of 3 credit hours in elective courses at the 4000 level.

Take **all** of the following courses:

- SOCY 1001 - Understanding the Social World
- SOCY 2001 - Inequalities in the Social World

- SOCY 3115 - Quantitative Methods & Analysis
- SOCY 3119 - Qualitative Methods
- SOCY 3140 - Sociological Theory
- SOCY 4830 - Senior Capstone: Worklife Practices & Policies

Take a minimum of **12** and a maximum of 36 SOCY elective credit hours. At least 3 credit hours must be completed at 4000-level or higher.

SOCIOLOGY BA - GENDER AND SOCIETY CONCENTRATION

Introduction

Please click [here](#) to see Sociology department information.

A concentration in Gender and Society provides students with an understanding of the role of gender in the experiences of females, males, and gender non-conforming individuals. The interdisciplinary nature of the concentration enables students to develop the skills to critically evaluate the ways in which inequality, oppression, and social structure contribute to various social problems such as the pay gap, sexual assault, domestic violence, and human trafficking. The Gender and Society concentration equips students for jobs in a variety of areas such as advocacy, counseling, public health, policy-making and government, business, and criminal justice.

All prospective majors should contact the undergraduate advisor in Sociology as early in their academic careers as possible for information about the degree requirements. Transfer or returning students should consult with the undergraduate advisor in Sociology concerning completion of the core courses.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their Sociology advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 38 credit hours, including a minimum of 20 SOCY credit hours and 18 ancillary courses.
2. Students must complete a minimum of 16 upper-division (3000-level and above) credit hours from the approved courses.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 13 SOCY credit hours with CU Denver faculty.

Program Allowances and Restrictions:

1. The maximum number of SOCY credit hours allowed for the Sociology BA - Gender and Society concentration is 56.
2. Students must take four electives for the major. Three of these electives must be cross-listed as SOCY and WGST. The fourth elective must be a WGST course cross-listed with a department other than Sociology.
3. Students who pursue this concentration simultaneously earn a minor in Women's and Gender Studies.

Take **all** of the following courses:

- SOCY 1001 - Understanding the Social World
- WGST 1050 - Introduction to Women's and Gender Studies
- SOCY 2001 - Inequalities in Social World
- SOCY 3115 - Quantitative Methods & Analysis
- SOCY 3119 - Qualitative Methods

- SOCY 3140 - Sociological Theory
- WGST 4306 - Survey of Feminist Thought **OR** WGST 4308 - Contemporary Feminist Thought
- SOCY 4830 - Senior Capstone: Worklife Practices & Policies

Take three courses (9 credit hours) cross-listed as SOCY and WGST. These courses are examples. Students should check course descriptions and the schedule to find courses that meet this requirement.

- SOCY /WGST 3700 - Sociology of the Family
- SOCY /WGST 3080 - Sex and Gender
- SOCY /WGST 3010 - Sociology of Human Sexuality
- SOCY /WGST 4270 - Social Meanings of Reproduction
- SOCY /WGST 4780 - Violence in Relationships

Take one additional WGST elective course. These courses are examples. Students should check course descriptions and the schedule to find courses that meet this requirement.

- WGST 3343 - Women & Gender in US History
- WGST 3450 - Contemporary Women Writers
- WGST 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- WGST 4215 - Women's Rights, Human Rights: Global Perspectives
- WGST 4225 - Urban America: Colonial Times to the Present
- WGST 4230 - Women in the West
- WGST 4248 - Gender, Globalization and Development
- WGST 4303 - Sex and Gender in Modern Britain
- WGST 4306 - Survey of Feminist Thought
- WGST 4307 - History of Sexuality
- WGST 4308 - Contemporary Feminist Thought
- WGST 4345 - Gender, Science, and Medicine: 1600 to the Present
- WGST 4420 - Goddess Traditions
- WGST 4500 - Feminist Philosophy
- WGST 4510 - Whores and Saints: Medieval Women
- WGST 4511 - French Women Writers
- WGST 4540 - Race, Class, and Gender in Spanish Golden Age Literature
- WGST 4555 - International Women's Resistance
- WGST 4564 - Gender and Politics
- WGST 4610 - Communication, Media, and Sex
- WGST 4660 - Queer Media Studies
- WGST 4710 - Women and Religion

- WGST 4827 - Women and the Law
- WGST 4933 - Philosophy of Eros

SPANISH LANGUAGE, LITERATURE AND CULTURE BA

Introduction

Please click [here](#) to see Modern Languages department information.

The Spanish program studies the language, linguistics, literature, culture and civilization of Spain, Spanish America and the Spanish-speaking areas of the United States.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major
- To be admitted to major status in Spanish, students must have an overall GPA of C+ (2.3).

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 36 SPAN credit hours.
2. Students must complete a minimum of 36 upper division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.5. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 SPAN credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Spanish majors are advised to take MATH 1010 or 2830 for their CU Denver Core Curriculum Mathematics requirement.
2. Courses taken at other institutions while a student is enrolled at CU Denver may be applied to the major only with departmental approval before enrollment in those courses.
3. Before enrolling in their final semester in the language, Spanish majors must be evaluated by the faculty in oral and written skills. Students must see their Spanish advisor for specific information.
4. Students must complete at least 12 SPAN credit hours at the 4000 level.
5. Students must complete a minimum of 30 credit hours in courses taught in Spanish.
6. Up to 6 credit hours of the 36 upper division level credit hours may be taken in related fields.

Take the following **required** courses:

- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3060 - Hispanic Phonetics: Theory and Practice

Take **at least one** Spanish Literature course

- SPAN 3199 - Topics in Spanish Literature
- SPAN 3400 - Survey of Spanish Literature I
- SPAN 3410 - Survey of Spanish Literature II
- SPAN 4110 - Contemporary Spanish Literature
- SPAN 4130 - Medieval Spanish Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4300 - Generation of 1898
- SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature
- SPAN 4380 - Romanticism in Spain

- SPAN 4399 - Special Topics: Spanish Peninsular Literature

Take **at least one** Spanish-American literature course:

- SPAN 3510 - Survey of Spanish American Literature II
- SPAN 4180 - Modernism
- SPAN 4401 - Survey of Spanish-American Literature I: Pre-1898
- SPAN 4450 - Masterpieces of Spanish-American Literature

Take **two** additional courses on Language Skills and Theory:

- SPAN 3010 - Spanish Composition I
- SPAN 3020 - Spanish Composition II
- SPAN 3030 - Spanish Oral Proficiency
- SPAN 3050 - Advanced Spanish Grammar

Take **two** of the following Culture and Civilizations of Spain or Spanish America courses:

- SPAN 3212 - Spanish American Culture and Civilization
- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3221 - Culture and Civilization of Spain I
- SPAN 3222 - Culture and Civilization of Spain II
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3230 - Ibero-American Cultures through Film
- SPAN 3240 - Food Metaphors: Ibero-American Cuisine and Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 4330 - Modern Culture of Spain through Film and Narrative

Take **four upper division (3000-level and above)** electives. **Up to two** of these electives may be taken outside the SPAN subject code

- ANTH 3121 - Language, Culture, and Communication
- ANTH 4320 - Archaeology of Mexico and Central America
- CHIN 3--- Any upper-division course in Chinese
- CHIN 4--- Any upper-division course in Chinese
- ENGL 3160 - Language Theory
- ENGL 3798 - International Perspectives in Literature and Film
- ENGL 4601 - Principles and Practices of Second Language Acquisition

- ENGL 4460 - Contemporary World Literature
- ETST 3108 - Chicano/a and Latino/a History
- ETST 3350 - Colonial Latin America
- ETST 3408 - Social Psychology of Latinos/as
- ETST 3838 - History of the Mexican American in Colorado
- ETST 4616 - Selected Topics: Chicanos/as and Latinos/as
- ETST 4768 - Chicano/Chicana Narrative and Social History
- FREN 3--- Any upper-division course in French
- FREN 4--- Any upper-division course in French
- GEOG 3130 - Central America and the Caribbean
- GEOG 3140 - Geography of South America
- GRMN 3--- Any upper-division course in German
- GRMN 4--- Any upper-division course in German
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3350 - Colonial Latin America
- HIST 3365 - Aztlan in the United States: Chicano History from 1821
- HIST 3460 - Modern Latin American History
- HIST 4411 - Modern Mexico
- HIST 4412 - Mexico and the United States: People and Politics on the Border
- HIST 4415 - Social Revolutions in Latin America
- HIST 4417 - Commodities and Globalization
- LING 3100 - Language in Society
- MLNG 4690 - Methods of Teaching Modern Languages
- MLNG 4691 - Methods of Teaching Modern Languages II
- PSCI 4235 - Politics and Markets in Latin America
- PSCI 4545 - Immigration Politics
- PSCI 4554 - Chicano and Latino Politics

SPANISH, INTERNATIONAL LANGUAGE AND CULTURE FOR THE PROFESSIONS OPTION BA

Introduction

Please click [here](#) to see Modern Languages department information.

This option in the Spanish major offers career possibilities, both in government and private industry, at home and abroad. Languages are useful in business, industry, commerce, civil service, law, library science, media, science, economics, health and social sciences. Students who follow this course of study could also qualify as teachers of general business subjects in bilingual as well as traditional school systems. (However, students who wish to be certified to teach Spanish in the public schools should consult the department for information concerning the undergraduate language licensure program.)

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click [here](#) to go to information about declaring a major
- International Spanish for the Professions is a controlled-enrollment major that takes two years to complete. Interested students should contact the Spanish advisor in the Department of Modern Languages to declare the major. This should be done as early as possible in the student's academic career, but not later than the second semester of the sophomore year.
- To be admitted to major status in Spanish, students must have an overall GPA of C+ (2.3).
- Prerequisites: *(These courses do not count toward the major total of 45 semester hours)*
 - ECON 2012 - Principles of Economics: Macroeconomics
 - ECON 2022 - Principles of Economics: Microeconomics
 - MATH 1070 - Algebra for Social Sciences and Business **or**
 - MATH 1110 - College Algebra **or**
 - higher level math course

 - SPAN 2110 - Second Year Spanish I **or**
 - SPAN 2120 - Second Year Spanish II

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 45 credit hours, including a minimum of 30 SPAN credit hours and 15 credit hours in ancillary coursework.
2. Students must complete a minimum of 30 upper division (3000-level and above) credit hours in the major.
3. Students must earn a minimum grade of C-(1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.5. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 SPAN credit hours with CU Denver faculty.

Program Allowances and Restrictions

1. Spanish majors are advised to take MATH 1010 or 2830 for their CU Denver Core Curriculum Mathematics requirement.
2. Courses taken at other institutions while a student is enrolled at CU Denver may be applied to the major only with departmental approval before enrollment in those courses.
3. Before enrolling in their final semester in the language, Spanish majors must be evaluated by the faculty in oral and written skills. Students must see their Spanish advisor for specific information.
4. Students must complete least 6 SPAN credit hours at the 4000 level.
5. Students must complete a minimum of 30 credit hours in courses taught in Spanish.

Take **all** of the following Spanish courses:

- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3700 - Spanish for International Business I
- SPAN 3710 - Spanish for International Business II

- SPAN 3782 - Introduction to Translation I **or**
- SPAN 3792 - Introduction to Translation II

Take **two** of the following language skills and theory courses:

- SPAN 3010 - Spanish Composition I
- SPAN 3020 - Spanish Composition II
- SPAN 3030 - Spanish Oral Proficiency
- SPAN 3050 - Advanced Spanish Grammar
- SPAN 3060 - Hispanic Phonetics: Theory and Practice

Take **one** of the following courses.

- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3223 - Contemporary Spanish Culture and Institutions

Take **one** of the following courses:

- SPAN 3212 - Spanish American Culture and Civilization
- SPAN 3213 - Contemporary Latin American Culture and Institutions (if not taken for the above requirement)
- SPAN 3221 - Culture and Civilization of Spain I
- SPAN 3222 - Culture and Civilization of Spain II
- SPAN 3223 - Contemporary Spanish Culture and Institutions (if not taken for the above requirement)
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3230 - Ibero-American Cultures through Film
- SPAN 3240 - Food Metaphors: Ibero-American Cuisine and Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact

Take **two** SPAN electives at the 4000-level.

Take **all** of the following Business courses:

- ACCT 2200 - Financial Accounting and Financial Statement Analysis
- MGMT 1000 - Introduction to Business
- MGMT 3000 - Managing Individuals and Teams
- MGMT 4400 - Environments of International Business
- MKTG 3000 - Principles of Marketing

SPORTS BUSINESS MAJOR - BS IN BUSINESS ADMINISTRATION

Introduction

Please click [here](#) to see Business School information.

The Sports Business major offers students the opportunity to prepare for a competitive career in the sports industry. This program was developed with industry partners who are in need of qualified leaders in the field. Sports firms are currently hiring at the entry level and promoting from within. The Sports Business major will provide you with the knowledge and skills you need to begin your career in the exciting field of sports.

The program includes faculty who are active researchers in the field, prominent guest speakers, and the opportunity to participate in exciting internships with local leaders in the industry. Some companies where students have interned include Broncos Football Club, Kroenke Sports and Entertainment, United States Olympic Committee and Anschutz Entertainment group.

Students completing the Sports Business major are also eligible to participate in the London Calling study abroad program. This unique opportunity provides students with a firsthand look at the global sports management field through behind-the-scenes visits to key sports and entertainment organizations and venues in London. The two-week elective includes visits to the UK's top sports facilities, including Arsenal FC, O2 Arena, Wimbledon, 2012 Olympic committee and more.

Students enrolled in the program will learn about diverse, cross-functional areas of the sports industry, including:

Sports industry trends & growth opportunities

Sports media trends & new media

Stadium financing & development

Naming rights & sponsorships

Sports specific marketing plans

Sports pricing & fan loyalty

Negotiating contracts with athletes

Team valuations

Labor law and collective bargaining agreements

Pro team and college athletics management

Money flow in teams - managing revenue streams

Outdoor sports industry - marketing & management

Community relations and event planning

Olympics bid process and finances

Program Delivery

This is an on-campus program.

Declaring This Major

[Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- Business School Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Take the following required course:

- MKTG 4250 - Sports Marketing

Take **two** of the following Business Practices courses:

- MKTG 4251 - Music and Media Marketing
- MKTG 4252 - The Business of Sports
- MKTG 4620 - Customer Service Strategies
- MKTG 4730 - New Product Development for Consumer and Sports Products

Take **one** of the following Research Skills courses:

- MKTG 3100 - Marketing Research
- MKTG 3200 - Consumer Behavior

Take **one** of the following Sales & Comm Skills courses:

- MGMT 4330 - Mastering Management
- MKTG 3300 - Social Media in Business
- MKTG 4000 - Advertising
- MKTG 4700 - Personal Selling and Sales Management

Take **one** of the following Application courses:

- MGMT 4900 - Project Management and Practice
- MKTG 4050 - Applied Marketing Management
- MKTG 4834 - Global Sports & Entertainment Management
- MKTG 3939 - Internship (Sports Business Internship)

Take **one** 4000-level MKTG or MGMT elective

Undergraduate Minors

ANTHROPOLOGY MINOR

Introduction

Please click [here](#) to see Anthropology department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus or online program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 18 ANTH credit hours.
2. Students must complete a minimum of 9 upper division (3000-level and above) ANTH credit hours. Most upper division courses have lower division prerequisites.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 ANTH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. All upper division core courses must be taken from CU Denver faculty in order to count for specific requirements. Upper division courses from other schools will only count as electives.

Take at least **three** of the following courses:

- ANTH 1302 - Introduction to Archaeology
- ANTH 1303 - Introduction to Biological Anthropology
- ANTH 2102 - Culture and the Human Experience
- ANTH 3101 - Foundations of Cultural Anthropology
- ANTH 3301 - World Prehistory
- ANTH 3512 - Human Evolution

Take **9 semester hours** of Anthropology electives.

ART HISTORY MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

The art history minor familiarizes students with the principal traditions of art history and includes a selection of lecture courses in advanced studies. This program provides a strong introduction to historical developments while developing analytical skills in research, writing and visual culture.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Art History Minor courses:

- FINE 2600 - Art History Survey I
- FINE 2610 - Art History Survey II

Take **nine** semester hours of upper-division Art History electives.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for lists of approved electives and more information about this minor.

ASTROPHYSICS MINOR

Introduction

Please click [here](#) to see Physics department information.

Astrophysics is an important and well-represented subdiscipline of physics. It includes the study of the solar system, galactic and extragalactic astrophysics, as well as cosmology. A minor in this field combines a theoretical approach with observational analysis. There is also the opportunity to do research in this field.

The physics department offers minors in physics, biophysics, and astrophysics. However, it is not possible to receive a minor in more than one of these fields. Also, physics majors may elect to receive the astrophysics or biophysics minor from the department, but not the physics minor.

Students are strongly encouraged to consult with the astrophysics advisor, meet physics faculty engaged in Astrophysics research, attend departmental astrophysics-related seminars, and explore ways that astrophysics relates to research undertaken by faculty in other disciplines.

For more information, contact:

Alberto Sadun (Astrophysics Minor Advisor)

alberto.sadun@ucdenver.edu

Office: North Classroom 3809

Bodhi Rogers (Physics advisor)

michael.b.rogers@ucdenver.edu

Office: North Classroom 3123B

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 17 PHYS credit hours.

2. Students must complete a minimum of 6 upper-division (3000-level and above) PHYS credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHYS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Requirements for the minor in astrophysics may be used to fulfill the requirements of the major in physics.
2. A student majoring in physics who wants to minor in astrophysics cannot use the 3000-level and above courses applied to the Astrophysics minor for their Physics Major requirements.

Take the following **required** course:

- PHYS 1052 - General Astronomy I

Take **all** of the courses in one of the following four course Physics lecture/lab sequences:

- PHYS 2010 - College Physics I **and**
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II **and**
- PHYS 2341 - Intro Experimental Phys Lab II
- **or**
- PHYS 2311 - General Physics I: Calculus-Based **and**
- PHYS 2321 - Intro Experimental Phys Lab 1
- **or**
- PHYS 2351 - Applied Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based **and**
- PHYS 2341 - Intro Experimental Phys Lab II
- **or**
- PHYS 2361 - Applied Physics Lab II

Take **one** of the following courses:

- PHYS 3050 - General Astronomy II
- PHYS 3070 - Physical Cosmology
- PHYS 3082 - Energy and the Environment

- PHYS 3411 - Thermal Physics
- PHYS 3840 - Independent Study: PHYS
- PHYS 3939 - Internship
- PHYS 4510 - Optics
- PHYS 4550 - Astrophysics
- PHYS 4840 - Independent Study: PHYS
- PHYS 4920 - Advanced Undergraduate Seminar
- PHYS 4980 - Advanced Physics Topics

*Topics in these classes vary, as do the number of credits that can be earned. See departmental advisor for approval.

BEHAVIORAL COGNITIVE NEUROSCIENCE MINOR

Introduction

Please click [here](#) to see Psychology department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements

- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PSYC credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) credit hours in the minor.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PSYC credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. If a student is a Psychology major (either a Bachelor of Arts or Bachelor of Science), their PSYC 1000 and PSYC 2220 courses do not count toward this minor. Additionally, if a student is a Bachelor of Science Psychology major, the PSYC 4054 course does not count toward this minor, nor do the two upper division Psychology elective courses they are using to fulfill their Psychology Department major requirements. As a substitution, for these courses Psychology (B.S.) majors must take an additional 3 courses from either the Cognitive Neuroscience and/or Behavioral Neuroscience category lists.
2. To fulfill this minor a non-Psychology major must successfully complete a total of 5 courses, including PSYC 1000, 2220 and 3 of the upper division courses from the 2 lists, with at least one course from each of the lists. Psychology majors must complete a total of 5 courses from the two lists with a minimum of 1 from each category. None of the 5 courses used toward the minor can also be used toward their Psychology major requirements.
3. Students can take both PSYC 4054 Behavioral Neuroscience and BIOL 4165, but only one can count toward this minor.
4. Students must complete 9 upper-division (3000-level and above) credit hours with CU Denver faculty.

Take **all** of the following courses:

- PSYC 1000 - Introduction to Psychology I
- PSYC 2220 - Biological Basis of Behavior

Take **one** of the following Cognitive Neuroscience courses:

- PSYC 3144 - Human Cognition
- PSYC 3205 - Human Development I: Child Psychology
- PSYC 3222 - Principles of Learning and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3810 - Neuropsychology

Take **one** of the following Behavioral Neuroscience courses:

- PSYC 3104 - Behavioral Genetics
- PSYC 3254 - Introduction to Animal Behavior
- PSYC 3262 - Health Psychology
- PSYC 3263 - Hormones and Behavior
- PSYC 3264 - Exercise, Brain and Behavior
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3724 - Developmental Psychobiology
- PSYC 3822 - Aging, Brain and Behavior
- PSYC 3832 - Neural Basis of Learning
- PSYC 4054 - Behavioral Neuroscience
- PSYC 4164 - Psychology of Perception
- BIOL 4165 - Neurobiology

Take **one** additional course from either the Cognitive Neuroscience or Behavioral Neuroscience lists above.

BIOLOGY MINOR

Introduction

Please click [here](#) to see Integrative Biology department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 28-31 credit hours, including a minimum of 20-23 BIOL credit hours and 8 credit hours in ancillary coursework.
2. Students must complete a minimum of 9 upper-division (3000-level and above) BIOL credit hours.
3. Students must earn a minimum grade of C- (1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 upper division level BIOL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. All upper-division biology courses applied to the undergraduate biology major must be completed within 10 years of graduation.

Take **all** of the following required courses:

- BIOL 2051 - General Biology I **or**
- BIOL 2095 - Honors General Biology I

- BIOL 2071 - General Biology Laboratory I **or**
- BIOL 2096 - Honors General Biology Lab I

- BIOL 2061 - General Biology II **or**
- BIOL 2097 - Honors General Biology II

- BIOL 2081 - General Biology Laboratory II **or**
- BIOL 2098 - Honors General Biology Lab II

Take **two** of the following courses:

- BIOL 3411 - Principles of Ecology
- BIOL 3611 - General Cell Biology
- BIOL 3832 - General Genetics
- BIOL 3445 - Introduction to Evolution

Take **all** of the following ancillary courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**
- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

Take at least **two** upper division Biology courses, including at least one of the following labs:

- BIOL 3225 - Human Physiology
- BIOL 3244 - Human Anatomy
- BIOL 3413 - Ecology Laboratory
- BIOL 3612 - Cell Biology Laboratory
- BIOL 3654 - General Microbiology
- BIOL 3763 - Biostatistics
- BIOL 4125 - Molecular Biology Laboratory
- BIOL 4335 - Plant Science
- BIOL 4345 - Flora of Colorado
- BIOL 4640 - Mammalogy
- BIOL 4644 - Advanced Human Anatomy Laboratory
- BIOL 4880 - Directed Research
- BIOL 4910 - Field Studies

BIOPHYSICS MINOR

Introduction

Please click [here](#) to see Physics department information.

The minor in biophysics enables students with primary interests in biology, chemistry, health sciences, mathematics, anthropology, psychology, or other disciplines to explore the deep connections between fundamental physical processes and the functions and development of life. Using mathematical and computational models as well as precise experimental measurements and advanced instrumentation, biophysics explores living processes within a framework that builds upon fundamental physics concepts of mechanics, electrodynamics, statistical physics, and quantum physics. Students taking a minor in biophysics will be able to synthesize some or all of these areas of physics at a mature level of understanding into their primary field(s) of study, bringing an enriched array of intellectual and experimental tools to the pursuit of their professional goals.

Students must consult with the physics advisor, meet physics faculty engaged in biophysics research, attend departmental biophysics-related seminars, and explore ways that biophysics relates to research undertaken by faculty in other disciplines - including both fundamental science and clinical medicine. Opportunities also arise to connect biophysics studies to outreach into regional high schools so that pre-college students can benefit from undergraduates sharing their experiences with connecting studies across disciplines.

For more information, contact:

Masoud Asadi-Zeydabadi

(Biophysics Minor Advisor)

masoud.asadi-zeydabadi@ucdenver.edu

Office: North Classroom 3803

Bodhi Rogers (Physics advisor)

michael.b.rogers@ucdenver.edu

Office: North Classroom 3123B

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 16 PHYS credit hours.
2. Students must complete a minimum of 6 upper-division (3000-level and above) PHYS credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHYS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Requirements for the minor in biophysics may be used to fulfill the requirements of the major in physics.
2. A student majoring in physics who wants to minor in biophysics cannot use the 3000-level and above courses for the Biophysics minor for their Physics Major requirements.

Take **all** of the courses in one of the following four course Physics lecture/lab sequences:

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II
- **or**
- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I **or**

- PHYS 2351 - Applied Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II **or**
- PHYS 2361 - Applied Physics Lab II

Take **both** of the following upper division biophysics courses:

- PHYS 3151 - Biophysics Outlook I
- PHYS 3161 - Biophysics Outlook II

Take at least **one** of the following:

- PHYS 3251 - Biophysics of the Body
- PHYS 3252 - Biophysics of the Body NM

- PHYS 3451 - Biophysics of the Cell
- PHYS 3452 - Biophysics of the Cell NM

- PHYS 4351 - Bioelectromagnetism
- PHYS 4352 - Bioelectromagnetism NM

- PHYS 4840 - Independent Study: PHYS

- Additional biophysics-related special topics or elective courses may be approved by the department advisor. Such courses include topics such as Radiation Physics in Biomedicine, Computational Modeling in Biophysics, Nonlinear Dynamics in Biomedicine, and specialized courses in biophysics-related instrumentation.

- ****Note:** the courses containing "NM" are versions whose math and use of prior physics knowledge has been adjusted - in terms of grading and assignments - for students who have taken fewer math and physics courses than physics majors (NM stands for non-majors). Both versions are meant to be content rich and conceptually challenging, still require quantitative modeling, and are offered simultaneously by the same instructor. Students with strong math backgrounds are encouraged to take the "majors" (xx51) version. Either one or the other version can count toward the minor, *but not both*.

BUSINESS MINOR

Introduction

Please click [here](#) to see Business School information.

Business minors can give you an edge in your career.

By adding a business minor to a liberal arts, arts and media, architecture, or engineering degree you will gain an edge in the job market. The business minor allows you to focus on a specific area of business that fits your career goals.

The Business School offers all undergraduate students at CU Denver the opportunity to add a minor in business administration.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- As a CU Denver Undergraduate student, you need a 2.0 GPA to be accepted for a business minor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Please see an advisor regarding residency requirements.
2. If the student has already taken the equivalent of one or more of these courses, other higher-level business courses may be substituted with Business School approval.
3. Students must maintain or exceed a 2.0 GPA to graduate with the minor.

Take **all** of the following courses:

- MGMT 1000 - Introduction to Business **or**
- ISMG 2050 - Introduction to Business Problem Solving
- ACCT 2200 - Financial Accounting and Financial Statement Analysis *

* Finite Mathematics must be completed as a pre-requisite.

Take **three** of the following courses:

- BANA 3000 - Operations Management *
- BLAW 3050 - Business Law and Ethics
- ENTP 3200 - Essentials in Entrepreneurship
- FNCE 3000 - Principles of Finance *
- ISMG 3000 - Technology In Business
- MGMT 3000 - Managing Individuals and Teams
- MKTG 3000 - Principles of Marketing
- INTB 4400 - Environments of International Business *

Note

* The courses with an asterisk have several required prerequisites which must be completed prior to enrolling. Check with an advisor as early as possible if you are interested in taking any of these courses. Email: undergrad.advising@ucdenver.edu

CHEMISTRY MINOR

Introduction

Please click [here](#) to see Chemistry department information.

The objective of the chemistry minor is to provide broad introductory course work and laboratory experience to science majors without the more technical mathematical and chemical prerequisites required of the chemistry major. The chemistry minor is open to all CLAS students and should prove beneficial for science majors, pre-professional health science majors and students seeking science education certification.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To register your minor in chemistry, please visit the CLAS advising office in NC 4002. After establishing your minor status, you are encouraged to meet with the chemistry minor advisor, Dr. Priscilla Burrow.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 24 semester hours of chemistry courses.
2. Students must complete a minimum of 15 upper division level (3000-level and above) CHEM credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Take **all** of the following chemistry minor courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**
- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

- CHEM 3411 - Organic Chemistry I **or**
- CHEM 3481 - Honors Organic Chemistry I

- CHEM 3421 - Organic Chemistry II **or**
- CHEM 3491 - Honors Organic Chemistry II

Take **one** of the following upper division laboratory courses:

- CHEM 3018 - Inorganic Chemistry Laboratory
- CHEM 3118 - Analytical Chemistry Laboratory
- CHEM 3418 - Organic Chemistry Lab I
- CHEM 3488 - Honors Organic Chemistry Laboratory I
- CHEM 4828 - Biochemistry Lab

Take **one** of the following upper division courses:

- CHEM 3011 - Inorganic Chemistry
- CHEM 3111 - Analytical Chemistry

Take **one** of the following upper division electives:

- CHEM 3810 - Biochemistry
- CHEM 4810 - General Biochemistry I
- CHEM 5810 - Graduate Biochemistry I
- CHEM 4010 - Advanced Inorganic Chemistry
- CHEM 4110 - Advanced Analytical Chemistry
- CHEM 4121 - Instrumental Analysis
- CHEM 4221 - Practical Applications of Spectroscopy
- CHEM 4421 - Cannabis Chemistry
- CHEM 4510 - Computational Chemistry
- CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy
- CHEM 4700 - Environmental Chemistry
- CHEM 4840 - Independent Study: Chem (with prior permission from the Chemistry Minor Advisor)
- CHEM 4880 - Directed Research (with prior permission from the Chemistry Minor Advisor)
- CHEM 5010 - Advanced Inorganic Chemistry
- CHEM 5110 - Advanced Analytical Chemistry
- CHEM 5221 - Practical Applications of Spectroscopy
- CHEM 5310 - Advanced Organic Chemistry

*Only one biochemistry course may count towards the minor. Non-majors wishing to focus in biochemistry should consult the requirements for the Biochemistry Certificate program.

CHINESE STUDIES MINOR

Introduction

Please click [here](#) to see Modern Languages department information.

The Minor Program in Chinese Studies is an interdisciplinary program offering a specialized study of China through coursework in the related disciplines of language, anthropology, history, geography, philosophy, and political science. China's economic and political presence is increasingly prominent in the United States. CU Denver is uniquely positioned to make use of its location as the cultural, economic and political center of the Rocky Mountain region and of its diverse, well-trained and highly qualified faculty to offer a course of interdisciplinary studies related to China. Students may choose to focus either on General Chinese Studies or *Chinese Language and Culture*. On the one hand, *General Chinese Studies* encourages an interdisciplinary approach of accepting courses from various departments that focus on history, political science, art, philosophy, and more from China, Taiwan, Hong Kong, and Singapore. On the other hand, *Chinese Language and Culture* further develops students' linguistic competence and cultural awareness. The minor program offers a wide variety and levels of Mandarin Chinese language and culture courses that not only improve students' communication skills but also give a deeper look into different aspects of Chinese culture.

The program in Chinese studies offers a host of study abroad opportunities throughout the academic year and every summer. CU Denver has on-going programs at the China Agricultural University in Beijing, and programs in Taipei, as well as an association with Yunnan University in Kunming. Study abroad programs of five weeks to one year in length may be arranged, and program faculty can help students enroll in intensive Chinese language programs in Taiwan or on the mainland. Students pursuing the minor in Chinese language and area studies are encouraged to complete the program with a period of residence and study in China.

Program Director: Dr. I-hao Victor Woo

Advisor: Dr. I-hao Victor Woo

Email: i-hao.woo@ucdenver.edu

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses.
2. Students must complete a minimum of 6 upper-division (3000-level and above) credit hours in the minor, chosen from the approved courses below.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Program Restrictions, Allowances and Recommendations

1. Courses taken at other institutions may be applied to the minor but only with approval of a Chinese faculty advisor in the Department of Modern Languages.

Take the **following** required 2 courses:

- CHIN 1000 - China and the Chinese OR
- CHIN 1071 - Mandarin Chinese for the Professions
- AND
- CHIN 2110 - Second Year Chinese I

Take an additional **9-12** credits hours from the following courses, or any course approved in advance by the Chinese Studies Program Director. Students are encouraged to contact the program advisor to devise a study plan:

- ANTH 4000 - Special Topics in Anthropology
- CHIN 2120 - Second Year Chinese II
- CHIN 2970 - Contemporary Chinese Cinema
- CHIN 3010 - Advanced Intermediate Chinese

- CHIN 3130 - Special Topics in Chinese
- CHIN 3200 - Contemporary Chinese Society and Culture
- CHIN 3300 - Special Topics on Chinese Film
- COMM 3230 - Chinese Communication & Culture in Context
- COMM 4430 - Communication, China, and the US
- COMM 4995 - Global Study Topics
- FINE 4524 - Topics in Art History II: Modern and Contemporary Art
- FINE 4750 - Arts of China
- GEOG 3160 - Geography of China
- HIST 3470 - Intro to East Asia: Since 1800
- HIST 4420 - Traditional China: China to 1600
- HIST 4421 - Modern China
- HIST 4422 - Lvng thr Mao's China: Life, Mat. Cult, Movies, 1949-76
- LING 2000 - Foundations of Linguistics
- LING 3100 - Language in Society
- PSCI 4186 - East Asia in World Affairs
- PSCI 4615 - Politics and Government of China
- PSCI 4726 - Seminar on U.S. and China Relations
- PHIL 3410 - Asian Philosophies and Religions
- PHIL 3981 - Chinese Philosophy and Culture
- RLST 3410 - Asian Philosophies and Religions
- RLST 3660 - Chinese Philosophy and Culture

China-related travel study, taken under the following course numbers:

- ANTH 4995 - Global Study Topics
- CHIN 3995 - Global Study Topics
- PSCI 4995 - Global Study Topics

COMMUNICATION MINOR

Introduction

Please click [here](#) to see Communication department information.

Knowledge in most professional settings means little unless it can be communicated effectively. The minor in communication is designed to provide students who are not communication majors with knowledge and skills in communication that are useful in any discipline or profession.

These Minor requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their Minor advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This program is offered both on-campus and online.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 18 COMM credit hours (six courses).
2. Students must complete a minimum of 6 upper-division (3000-level and above) COMM credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 COMM credit hours with CU Denver faculty.

Take **all** of the following Communication courses:

- COMM 1011 - Fundamentals of Communication
- COMM 1021 - Introduction To Media Studies
- COMM 2020 - Communication, Citizenship, and Social Justice

Take **one** of the following Communication courses:

- COMM 1001 - Presentational Speaking
- COMM 2050 - Business and Professional Speaking

In addition to the four courses specified above, students must take **two** upper-division COMM courses (3000 level or above).

COMPUTER ENGINEERING MINOR

Introduction

Please click [here](#) to see electrical engineering department information.

The minor in computer engineering provides an opportunity to gain a more in-depth knowledge of computing technology, programming digital hardware, interfacing digital hardware, internet of things, microcontrollers and microprocessors, sensor technology, as well as computer vision and image processing. The calculus sequence required for most engineering programs is not a prerequisite for the computer engineering minor.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Contact the Department of Electrical Engineering for a Computer Engineering Minor Coursework form.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must meet all prerequisites for all ELEC courses taken.
2. The minimum GPA is 2.0 with no individual course grade below C-
3. The student's application is subject to department approval.

4. Students may apply minor courses toward their major when applicable.

Take **all** of the following required courses (13 credit hours)

- ELEC 1510 or CSCI 1510 - Logic Design (3 hours)
- ELEC 1520 - Programming for Electrical Engineers (3 hours)
- ELEC 2520 - Embedded Systems Engineering 2 (3 hours)
- ELEC 2531 - Logic Laboratory (1 hour)

Technical elective - complete at least one (3 hours)

- ELEC 3520 - Intelligent Systems: IoT & Cyber-Physical Systems
- ELEC 4511 - Hardware-Software Interface
- ELEC 4678 - Quantum Electronics
- ELEC 4727 - Computer Vision & Image Processing Acceleration
- ELEC 4800 - Special Topics (if related to computer engineering and with approval by the electrical engineering department chair)

COMPUTER SCIENCE MINOR

Introduction

Please click [here](#) to see Computer Science department information.

The Department of Computer Science and Engineering offers a minor in computer science. The requirements for the minor are listed below.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare the CS minor, students must complete and send a Minor Declaration Form to the engineering dean's office. Once declared, students are required to meet with a CS advisor to complete the CS minor coursework form. The CS Minor declaration must be completed to register for 3000 level courses.
- For more information or an advising appointment, contact the Department of Computer Science and Engineering at 303-315-1408 or visit the Lawrence Street Center (1380 Lawrence Street), suite 800.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Any undergraduate student currently enrolled in a CU Denver degree program with a major other than computer science may earn a minor in computer science.
2. A CS Minor plan of study must be completed and approved by a CS advisor.
3. A student must fulfill all prerequisites for the courses he/she selects. See the catalog course descriptions for prerequisite information for each course.
4. All courses taken for the minor must be completed with a grade of C- or better and must be taught by a CS faculty member.
5. At the time of graduation, the student must have a CU Denver cumulative GPA of 2.0 and must have a 2.0 GPA for the eight classes taken for the minor.

Take **all** of the following required courses:

- MATH 1401 - Calculus I
- CSCI 1410 - Fundamentals of Computing
- CSCI 1411 - Fundamentals of Computing Laboratory
- CSCI 2312 - Object Oriented Programming
- CSCI 2421 - Data Structures and Program Design

Take **four** additional CSCI courses: one of which may be at the 2000 level. All others must be at the 3000-level or higher.

CONSTRUCTION MANAGEMENT MINOR

Introduction

Please [click here](#) to see civil engineering department information.

Construction management involves the design, planning and management of the construction, maintenance and disposal of the built environment. This includes buildings, transportation systems, utilities and commercial, industrial, residential and environmental projects. Examples include highways, bridges, airports, buildings, dams, reservoirs, light and high-speed rail systems, hospitals, laboratories, residential communities, utilities and environmental restoration projects.

The construction management minor is designed for CU Denver undergraduates in engineering, architecture, business and other related disciplines who want to grow their skills and expertise in the fields of construction and engineering. The curriculum has been developed with the encouragement and review of a team of industry professionals and allows students to learn skills to facilitate entry into the construction industry.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To enroll in the construction management minor, complete the top portion of the Construction Management Minor Coursework form. Email the form to civilengineering@ucdenver.edu or bring it to the Department of Civil Engineering office, located in North Classroom 3037.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. All courses must be taken in residence CU Denver (no transfer hours). A minimum 2.0 GPA is required for courses applied to this minor with no individual course grade below C- (1.7).

Take **all** of the following required courses:

- CVEN 2212 - Engineering Surveying
- CEMT 1000 - Introduction to Construction Management

- CEMT 2100 - Construction Management Fundamentals
- CEMT 4231/5231 - Construction Materials and Methods * or ARCH 3130 and ARCH 3430
- CEMT 4232/5232 - Construction Planning and Control *

*One of the following courses can be substituted for CEMT 4231 or CEMT 4232:

- CEMT 4236/5236 - Project Management Systems
- CEMT 4233/5233 - Construction Cost Estimating
- CEMT 4234/5234 - Sustainable Construction
- CEMT 4240/5240 - Building Information Modeling (BIM)
- CEMT 4242/5242 - Construction Safety
- MGMT/ISMG 4900 - Project Management and Practice

CREATIVE WRITING MINOR

Introduction

Please click [here](#) to see English department information.

Students who are not majoring in English, and who have an interest in writing poetry or fiction, may enroll in the creative writing minor. The creative writing minor gives students the opportunity to complement their area of major study with experience writing and reading poetry or fiction.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and their CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

2. Students must complete a minimum of 15 ENGL credit hours.
3. Students must complete a minimum of 6 upper-division (3000-level and above) ENGL credit hours.
4. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
5. Students must complete a minimum of 9 ENGL credit hours with CU Denver faculty.

Take **all** of the following required courses:

- ENGL 2156 - Introduction to Creative Writing
- ENGL 2450 - Introduction to Literature

Take **one** of the following courses:

- ENGL 3020 - Poetry Workshop
- ENGL 3050 - Fiction Workshop

Take **one** of the following courses:

- ENGL 4025 - Advanced Poetry Workshop
- ENGL 4055 - Advanced Fiction Workshop
- ENGL 3020 or 3050 - Writing Workshop (not previously taken)

Students who have taken ENGL 3020, take **one** of the following Poetry courses:

- ENGL 4160 - Poetics
- ENGL 4166 - History of American Poetry
- ENGL 4320 - History of Poetry in English
- ENGL 4801 - Special Topics in Creative Writing: Poetry

Students who have taken ENGL 3050, take **one** of the following Fiction courses:

- ENGL 4200 - Survey of the English Novel to 1900
- ENGL 4230 - The American Novel
- ENGL 4236 - The American Short Story
- ENGL 4802 - Special Topics in Creative Writing: Fiction

CRIMINAL JUSTICE MINOR

Introduction

Please click [here](#) to see School of Public Affairs information.

A minor in Criminal Justice will provide students with foundational knowledge of criminology and criminal justice. Students majoring in sociology, psychology, political science, and related fields are likely to interact with the criminal justice system in their careers and would benefit from the addition of the CJ minor to their degree plan.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Minor

- Please contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Criminal Justice minor requires 18 credit hours of coursework.
2. A maximum of 9 transfer credits may be applied to the minor.
3. Students must receive a minimum C- grade in each course applied to satisfy the minor requirements.
4. Electives must be taken from outside the student's major.

Take **all** of the following required courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory

Take **two** of the following courses:

- CRJU 4042 - Corrections
- CRJU 4043 - Law Enforcement
- CRJU 4044 - Courts and Judicial Process

Take **two** additional upper-division elective courses in Criminal Justice or ancillary fields. For questions about approved elective please contact the Criminal Justice Minor Advisor prior to enrollment.

CULTURALLY AND LINGUISTICALLY DIVERSE EDUCATION MINOR

Introduction

Please click [here](#) to see School of Education and Human Development information.

The Culturally and Linguistically Diverse Education (CLDE) Minor is designed to provide students with an understanding of culturally and linguistically diverse students, families and communities, particularly in their relationship to public institutions. This minor is a powerful addition to majors in sociology, psychology, ethnic studies, gender studies, public health, communication, the humanities, and anyone in the field of education, as it provides professionals with a strong understanding of how to serve culturally and linguistically diverse students in school and community environments.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, and online courses.

Declaring This Minor

- If you are currently a CU Denver student please contact the Undergraduate Advisor in the School of Education & Human Development for specific meeting times to discuss the process.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To complete a minor in CLDE, a students must complete 15 credit hours of CLDE and other related courses with a minimum grade of C (2.0).
2. Of those CLDE courses, at least 9 credits must be completed at the University of Colorado Denver.
3. Transfer courses must be approved by faculty and/or advisor to apply to the minor.
4. Students will be able to create an emphasis that best suits their professional goals and needs. All CLDE minors must take a minimum of 3 CLDE courses from the list below. Students must select 2 additional courses either in CLDE or from other approved programs as listed below.

Take a minimum of **3 courses** from the following list (each course is 3 credit hours):

- CLDE 1000 - Language, Identity, & Power: International Perspectives
- CLDE 2000 - CLDE Foundations
- CLDE 3680 - Spanish for Educators
- CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM
- CLDE 3840 - Independent Study in CLDE
- CLDE 4020 - Responsive Classroom Communities
- CLDE 4700 - Social Studies for Multilingual Learners

Approved Courses from outside CLDE (each course is 3 credit hours):

- ECED 4650 - Dual Language Learners Learning and Development
- EDFN 4000 - Food Justice in City & Schools
- EDFN 4010: Social Foundations and Cultural Diversity in Urban Education
- HDFR 3250 - Families in Global Perspectives
- HDFR 4040 - Latino Families in School and Communities
- PSCI 1111 - First Year Seminar *Immigration: The Struggle for Social Justice*
- SPED 4740: Linguistically Responsive Special Education

Please contact the advisor for the complete course list.

DATA SCIENCES MINOR

Introduction

Please click [here](#) to see Mathematical and Statistical department information.

The demand for employees trained in data science has grown considerably in recent years. This minor will serve students by offering them specific training in data science.

Data science training should include components related to statistics, computing, and preferably, a specific field of application (e.g., business, biology, health, etc.). The minor is flexible in that it allows a student to get core training in data science programming and statistics, while allowing students to develop additional data science-related skills from other disciplines, or to focus on specific skills within data science.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 18 credit hours, including a minimum of 12 MATH credit hours.

2. Students must complete a minimum of 9 upper division (3000-level and above) MATH credit hours. Most upper-division courses have lower-division pre-requisites.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 upper-division level MATH credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Be aware of no co-credit policies. Here is a non-exclusive list of our most common no co-credit policies: no co-credit between (1) 3800 and 4810, (2) 3195 and 3200, (3) 3191 and 3195, (4) 4387 and 4830.

Take **one** of the following courses:

- MATH 2830 - Introductory Statistics
- MATH 3382 - Statistical Theory
- MATH 3800 - Probability and Statistics for Engineers

Take **one** of the following courses:

- MATH 4387 - Applied Regression Analysis
- MATH 4830 - Applied Statistics

Take **one** of the following courses:

- MATH 1376 - Programming for Data Science
- ISMG 4400 - Programming Fundamentals with Python

Take the following required course:

- MATH 3376 - Data Wrangling & Visualization

Take **two** courses from the following list of approved courses:

- MATH 3191 - Applied Linear Algebra
- MATH 3195 - Linear Algebra and Differential Equations
- MATH 3200 - Elementary Differential Equations
- MATH 3301 - Introduction to Optimization in Operations Research
- MATH 3302 - Simulation in Operations Research

- MATH 4390 - Game Theory
- MATH 4394 - Experimental Designs
- MATH 4408 - Applied Graph Theory
- MATH 4650 - Numerical Analysis I
- MATH 4660 - Numerical Analysis II
- MATH 4733 - Partial Differential Equations
- MATH 4791 - Continuous Modeling
- MATH 4792 - Probabilistic Modeling
- MATH 4793 - Discrete Math Modeling
- MATH 4794 - Optimization Modeling
- MATH 4810 - Probability
- MATH 6330 - Workshop in Statistical Consulting
- ECON 4030 - Data Analysis with SAS
- ECON 4811 - Introduction to Econometrics
- CSCI 3287 - Database System Concepts
- CSCI 3963 - Network Structures
- CSCI 4455 - Data Mining
- CSCI 4580 - Data Science
- CSCI 4788 - Bioinformatics
- CSCI 4930 - Machine Learning
- CSCI 4931 - Deep Learning
- CSCI 4951 - Big Data Systems
- ISMG 3000 - Technology In Business
- ISMG 3500 - Enterprise Data and Content Management
- GEOG 4070 - Remote Sensing II: Advanced Remote Sensing
- GEOG 4080 - Introduction to GIS
- GEOG 4081 - Cartography and Computer Mapping
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4091 - Open Source Software for Geospatial Applications
- GEOG 4092 - GIS Programming and Automation
- GEOG 4095 - Deploying GIS Functionality on the Web
- GEOG 4235 - GIS Applications in the Health Sciences

DIGITAL DESIGN MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

The digital design minor integrates creative thinking with experience using digital applications in the production of graphic design and motion graphics. Configured as an interdisciplinary arts and design laboratory, this minor offers a practical understanding of how digital technology can be applied to help solve human, social and business problems.

Program Delivery

- This is an on-campus program

Declaring This Minor

- Students who are declaring a Digital Design minor must complete two introductory Digital Design courses with a grade of C or better, as described below. Students who meet the requirements will be eligible to register for certain upper-division studio Digital Design courses.

ELIGIBILITY

The student has completed, or is in the process of completing, the following courses with a grade of C (2.0) or better in each:

- FINE 2405 - Introduction to Digital Design
- FINE 2415 - Typography Studio
- FINE 2405 and 2415 are both offered typically only in the fall term at CU Denver.

QUESTIONS

- For general inquiries see the Digital design Program page here.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. All courses for this minor must be taken at CU Denver unless approved otherwise by the digital design faculty advisor.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will

not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to major requirements.

Take **all** of the following Digital Design Minor courses (entry level):

- FINE 2405 - Introduction to Digital Design
- FINE 2415 - Typography Studio

Take **all** of the following Digital Design Minor courses (available only to students after declaring):

- FINE 3414 - Motion Design I
- FINE 3415 - Design Studio I
- FINE 3424 - Interactive Media
- FINE 3434 - 3D Motion Design
- FINE 4600 - History of Modern Design:Industrial Revolution-Present

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and more information about this minor.

DIGITAL MEDIA DESIGN FOR LEARNING MINOR

Introduction

Please click [here](#) to see School of Education and Human Development information.

Using digital and social media platforms and technologies, you will design and produce accessible materials and learning experiences for people in school, organizational, and community settings. People with the Digital Media Design for Learning minor go on to be designers and producers of educational software in publishing and software companies; designers and producers of online training and training materials for organizations; designers and producers of educational exhibits in art and science museums; and designers and academic-technology consultants in K12 and college/university settings. When you select this completely online minor you become a part of an existing vibrant learning design community and professional network.

Program Delivery

- All of the courses for this minor are offered online.

Declaring this Minor

- If you are currently a CU Denver student please contact the Undergraduate Advisor in the School of Education and Human Development to set up a time to discuss the process.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To complete a minor in Digital Media Design for Learning, a student will need to complete 15 credit hours of Digital Media Design for Learning courses with a minimum grade of C+ (2.3).
2. Of those Digital Media Design for Learning courses, at least 12 credits must be completed at the University of Colorado Denver.
3. A transfer course must be approved by faculty and/or advisor to apply to the minor.
4. Your minor program of study is developed in consultation with an academic advisor and requires you to have previously completed a minimum of 15 credits of undergraduate courses.

Required Courses

- INTE 4100 - Planning and Designing for Instruction
- INTE 4340 - Learning with Digital Stories
- INTE 4680 - Producing Media for Learning
- INTE 4660 - Developing Self-Paced Online Modules
- INTE 4665 - Learning with Social Media and Networking **or** INTE 4000 - Maker Studio

ECONOMICS MINOR

Introduction

Please click [here](#) to see Economics department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 15 ECON credit hours.
2. Students must complete a minimum of 6 upper division (3000-level and above) ECON credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 ECON credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students may double count all but two upper division level courses toward other degree requirements
2. Only courses taken at CU Denver will apply in the GPA calculation.
3. All courses other than ECON 2012 and ECON 2022 require written department approval to be transferred in as satisfying minor requirements.

Take the following **required** courses:

- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics **and**
- Three upper-division electives in economics: **9 semester hours** (ECON 3100 - Economics of Race and Gender is acceptable)

EDUCATION STUDIES MINOR

Introduction

Please click [here](#) to see School of Education and Human Development information.

The Education Studies Minor is a 15-credit undergraduate course of study that explores cognition and learning theory, teaching methods, development across the life span, and working with culturally and linguistically diverse learners.

The Education Studies Minor is useful across many disciplines and career paths. It is customized for two major audiences - those who plan to move into the teacher education program at CU Denver and students going into fields outside of K-12 teaching. Students outside of the K-12 teaching pathway will be able to create an emphasis that best suits their professional goals and needs as the minor is designed to enhance many disciplinary or career paths where there may be an educational component.

Students who are becoming teachers and have Elementary, Early Childhood, or Special Education as a declared major are not eligible for the Education Minor

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, and online courses.

Declaring This Minor

- If you are currently a CU Denver student, please contact Undergraduate Advising in the School of Education & Human Development at 303-315-6300 for an appointment to discuss the process.

General Requirements

The Education Minor is combined with an existing major and degree. To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Pathway 1: Education Studies Minor for students moving into the K-12 teaching licensure pathways at CU Denver. Students must complete 15 credits below with a minimum grade of B- or better. (Consult with advisor for timing and specific requirements of this minor.)

- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education
- CLDE 4020 - Responsive Classroom Communities
- EDHD 3930 - Diverse Learners Field Experience & Seminar
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms (concurrent enrollment in EDHD 3930 required)
- One content course in area of licensure area of study (e.g. English, Mathematics, Science). Of those courses, at least 9 credits must be completed at the University of Colorado Denver. Transfer courses must be approved by faculty to apply to the minor.

Pathway 2: Education Studies Minor for non-K-12 teaching. Students must complete 15 credits below with a minimum grade C- or better. An overall minimum 2.0 is required for this minor. (Consult with advisor for timing and specific requirements of this minor.)

Foundations (Choose 1)

- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education
- EDFN 1000 - Equality, Rights & Education (Core Social Science course)
- CLDE 1000 - Language, Identity, & Power: International Perspectives (Core International Perspective course)

Pedagogy (Choose 2)

- LCRT 2000 - Rebels, Villains, & Superheroes: How Children's Literature Shapes Our Identities (Core Humanities course)
- INTE 2500 - Digital Media and Learning (Core Social Science course)
- INTE 2000 - Digital Teaching and Learning
- SPED 4400 - Universal Design for Learning (UDL)

- CLDE 2000 - CLDE Foundations
- HDFR 3050 - Children's Thinking and Assessment
- CLDE 3680 - Spanish for Educators
- ECED 4102 - Developmentally Appropriate Curriculum Methods and Techniques
- ECED 4060 - Working with Families, Professionals, and Communities
- SPED 4300 - Family, Professional, and Community Collaboration
- MTED 3040 - Mathematics for Elementary Teachers

Development (Choose 1)

- HDFR 2110 - Child Ecology
- HDFR 3020 - Black and Latino Children in Families and Schools (Core Cultural Diversity course)
- SPSY 2200 - Child and Adolescent Mental Health in Schools and Communities (Core Behavioral Science course)

Elective (Choose an additional course from the list above)

Please contact Undergraduate Advising in the School of Education & Human Development at 303-315-6300 for an appointment to discuss and plan your route through the Education Minor

ELECTRICAL ENGINEERING MINOR

Introduction

Please click [here](#) to see electrical engineering department information.

Electrical engineers use mathematics and physics tools and theory to develop systems ranging from smart electric grids, embedded systems and computer engineering products, integrated electronics, wired and wireless communications, networking sensing and imaging devices, and information technology. Students enrolled in the minor of electrical engineering will be given the opportunity to learn the fundamentals of electrical engineering as well as be introduced to some advanced applications. Students will be exposed to many real world applications and have hands-on engineering design experiences.

Students are encouraged to start this minor in their sophomore year of study.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Contact the Department of Electrical Engineering for an Electrical Engineering Minor Coursework form.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must meet all pre-requisites for any ELEC courses taken.
2. To receive the minor, the minimum GPA is 2.0 with no individual course grade below C-
3. The student's application is subject to department approval.
4. Students may apply minor courses toward their major when applicable.

Take **all** of the following required courses (9 credits)

- ELEC 2132 - Circuit Analysis I or ELEC 3030 - Electric Circuits and Systems
- ELEC 2142 - Circuit Analysis II
- ELEC 3316 - Signals and Systems

Junior Elective Courses - complete one of the following (3 credit hours)

- ELEC 3225 - Electronics II
- Note: Beginning Spring 2021 will be retitled to Electronics and worth 4 credits.
- ELEC 3164 - Energy Conversion
- ELEC 3133 - Electromagnetic Fields

Technical Electives - complete two of the following (6 credit hours)

- Any 3 hour 4000-level ELEC lecture course (excluding ELEC 4309/4319)
- Any 3 hour 5000-level ELEC lecture course

ENGLISH WRITING, RHETORIC, AND TECHNOLOGY MINOR

Introduction

Please click [here](#) to see English department information.

The English Writing, Rhetoric, and Technology minor allows students to complement their area of major study with systematic experience in writing.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This program is both an on-campus and online program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 15 ENGL credit hours.
2. Students must complete a minimum of 6 ENGL credit hours must be taken at the upper-division (3000- or 4000-) level.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA.
4. Students cannot complete minor or ancillary course requirements as pass/fail.

5. Students must complete a minimum of 9 ENGL credit hours with CU Denver English faculty.

Program Restrictions, Allowances and Recommendations

1. Core composition courses (English 1020 and 2030) do not count toward the minor, nor does CLEP or AP credit.
2. Courses counted in the minor cannot be counted toward any of the English majors.
3. Internships are available for students who have completed over 60 credit hours and count toward the upper-division elective in the minor. Visit CU Denver's Experiential Learning Center (ELC) for more information (Tivoli 260). A faculty sponsor is required for all internships.
4. Students are encouraged to take ENGL 1020 and ENGL 2030 before beginning the minor.
5. Courses counted in a minor cannot be counted toward any English Major or English Writing, Rhetoric, and Technology Major.

A. Required Course Areas (four courses) 12 hours:

Introduction to Writing and Rhetoric (take **ONE** as you begin the minor)

- ENGL 2060 - Introduction to Writing & Digital Studies
- ENGL 2070 - Grammar, Rhetoric and Style

Multimedia (take **ONE**):

- ENGL 3084 - Multimedia Composition
- ENGL 4701 - Multimedia in the Community

Language Study (take **ONE**):

- ENGL 3160 - Language Theory
- ENGL 4601 - Principles and Practices of Second Language Acquisition (by instructor's permission)
- ENGL 4651 - Second Language Writing
- (by instructor's permission)

Advanced Writing Experience (take **ONE**):

- ENGL 4190 - Advanced Topics in Writing & Digital Studies

B. Elective Course in Writing, Rhetoric, and Digital Studies (one course):

*** A course does not count here and in the Required Course Areas above. The exception is English 4190. One 4190 is required in the above section (A: Required Course Areas), and one additional 4190 can count below (in B: Elective Courses), if elected. (A maximum of two 4190s in total.)*

Elective Courses in Writing, Rhetoric, and Digital Studies (take one) 3 hours:

- ENGL 2060 - Introduction to Writing & Digital Studies
- ENGL 2070 - Grammar, Rhetoric and Style
- ENGL 3084 - Multimedia Composition
- ENGL 3154 - Technical Writing
- ENGL 3160 - Language Theory
- ENGL 3170 - Business Writing
- ENGL 3405 - Topics in Writing
- ENGL 3416 - Magazine Writing
- ENGL 3939 - Internship
- ENGL 4175 - Writing in the Sciences
- ENGL 4180 - Argumentation and Logic
- ENGL 4190 - Advanced Topics in Writing & Digital Studies
- ENGL 4280 - Proposal and Grant Writing
- ENGL 4601 - Principles and Practices of Second Language Acquisition (by instructor's permission)
- ENGL 4651 - Second Language Writing (by instructor's permission)
- ENGL 4701 - Multimedia in the Community
- ENGL 4740 - Honors in Writing
- ENGL 4995 - Senior Writing Project

TOTAL: 15 hours

ENTREPRENEURSHIP MINOR

Introduction

Please click [here](#) to see Business School information.

The Business School offers all undergraduate students at CU Denver the opportunity to add a minor in entrepreneurship.

Students enrolled in this minor have the benefit of following their passion with their undergraduate degree while adding the business knowledge and skills employers want and

entrepreneurs need. By adding a business minor to a liberal arts, arts and media, architecture, or engineering degree, you will gain an edge in the job market.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- As a CU Denver Undergraduate student, you need a 2.0 GPA to be accepted for an entrepreneurship minor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must take 9 of the 15 hours of required business courses in the minor while in residence at the University of Colorado Denver. If a student has already taken the equivalent of one or more of these courses at another university, other higher-level business courses may be substituted with the approval of the Business School.
2. Students must maintain or exceed a 2.0 GPA to graduate with the minor.

Take **all** of the following courses:

- ENTP 3200 - Essentials in Entrepreneurship
- ENTP 3230 - Small Business Accounting and Finance
- ENTP 3299 - Business Model Development & Planning
- Take **two** ENTP electives

ENVIRONMENTAL SCIENCES MINOR

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

The environmental sciences minor offers students exposure to the breadth of environmental issues. Students emphasize the natural/physical sciences, and may strategically incorporate the social sciences and humanities.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 17 credit hours from the approved courses below.
2. Students must complete a minimum of 9 upper-division (3000- level and above) credit hours in the minor chosen from the approved course list below.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty from the approved list below.

Program Restrictions, Allowances and Recommendations

1. Many of the upper-division courses have prerequisites; the student must check the catalog for prerequisite requirements for these courses.
2. The four upper-division elective courses for the Environmental Sciences minor cannot be from the student's major discipline, even if the particular course is not counted toward the major.
3. Undergraduate students may count up to 3 credit hours of independent study (any combination of ENVS 3840, 4840, 4880) towards elective credit in the minor as approved by the undergraduate coordinator.
4. The lecture/laboratory sequence can be part of the requirements for the major, but not in the student's major department (i.e., a biology major cannot use the general biology sequence, but could use the general chemistry sequence, which is also required for the biology major).

Take **two** of the following lecture/laboratory courses (see Program Requirement note 4, above):

- BIOL 2051 - General Biology I **and**
- BIOL 2071 - General Biology Laboratory I

- BIOL 2061 - General Biology II **and**
- BIOL 2081 - General Biology Laboratory II

- CHEM 2031 - General Chemistry I **and**
- CHEM 2038 - General Chemistry Laboratory I

- CHEM 2061 - General Chemistry II **and**
- CHEM 2068 - General Chemistry Laboratory II

- PHYS 2010 - College Physics I **and**
- PHYS 2030 - College Physics Lab I

- PHYS 2020 - College Physics II **and**
- PHYS 2040 - College Physics Lab II

Take **three** of the following courses outside of the student's major discipline (see Program Requirement note 2, above):

- BIOL 3411 - Principles of Ecology
- CHEM 4700 - Environmental Chemistry
- ECON 4540 - Environmental Economics

- ENVS 3082 - Energy and the Environment **or**
- PHYS 3082 - Energy and the Environment

- ENVS 4720 - Climate Change: Causes, Impacts and Solutions
- ENVS 4740 - Soil Science and Geography
- GEOG 3232 - Weather and Climate
- GEOG 3240 - Colorado Climates
- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4240 - Applied Geomorphology
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4270 - Glacial Geomorphology
- GEOG 4280 - Environmental Hydrology
- GEOG 4335 - Contemporary Environmental Issues
- GEOG 4420 - The Politics of Nature
- GEOG 4440 - Science, Policy and the Environment
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- GEOG 4731 - Mountain Biogeography
- GEOL 4030 - Environmental Geology
- PSCI 4354 - Environmental Politics

ETHICS MINOR

Introduction

Please click [here](#) to see Philosophy department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PHIL credit hours.
2. Students must complete a minimum of 6 upper-division (3000-level and above) PHIL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHIL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. For those students who major in philosophy, up to two courses can satisfy the requirements for both programs.
2. Religious Studies courses cannot be used to fulfill the requirements for the minor.
3. Courses taken at other institutions must either be transferred as direct equivalent to a CU Denver course or be approved by an advisor in the Philosophy Department for application towards the minor.
4. Courses not specifically listed here but offered by the Department may count toward the degree upon the approval of the Department Undergraduate Advisor.

Take the following **required** course:

- PHIL 1020 - Introduction to Ethical Reasoning

Take **four** of the following courses:

- PHIL 3002 - Ancient Greek Philosophy

- PHIL 3150 - History of Ethics
- PHIL 3200 - Social and Political Philosophy
- PHIL 3250 - Business Ethics
- PHIL 3280 - War and Morality
- PHIL 3430 - Environmental Ethics
- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PHIL 3550 - Philosophy of Death and Dying
- PHIL 4150 - Twentieth Century Ethics
- PHIL 4242 - Bioethics
- PHIL 4260 - Philosophy of Law
- PHIL 4500 - Feminist Philosophy
- PHIL 4700 - Seminar in a Major Philosopher
- PHIL 4812 - Special Topics in Philosophy
- PHIL 4833 - Existentialism

ETHNIC STUDIES MINOR

Introduction

Please click [here](#) to see Ethnic Studies department information.

The minor in ethnic studies offers students the opportunity to enhance and broaden the body of knowledge acquired in their chosen majors and to apply it in a variety of careers involving intercultural relations.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program and all courses are available online.

Declaring This Minor

- Please click [here](#) to go to information about declaring a minor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 18 ETST credit hours (6 courses).
2. Students must complete a minimum of 9 upper-division (3000-level and above) ETST credit hours.
3. Students must earn a minimum grade of C- (1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete all ETST course requirements for the Ethnic Studies minor with CU Denver faculty. Transfer courses do not apply.

Take the following **required** course:

- ETST 2000 - Introduction to Ethnic Studies

Take **four** ETST courses, one from each of the following focal U.S. racial/ethnic groups:

Asian-Americans

- ETST 3297 - Social History of Asian Americans
- ETST 3307 - Selected Topics: Asian Americans
- ETST 3357 - Asian American Literature
- ETST 3567 - Asian American Women
- ETST 3697 - Contemporary Asian American Experience

African-Americans

- ETST 2105 - African American Contemporary Social Issues
- ETST 2155 - African American History
- ETST 3230 - African American Family
- ETST 4220 - African-American Literature
- ETST 4515 - The African American in Politics

American Indians

- ETST 2496 - American Indian Literature
- ETST 2606 - The American Indian Experience
- ETST 3110 - Indigenous Studies
- ETST 3216 - Federal Law and American Indians
- ETST 3396 - History of the American Indian
- ETST 3616 - Selected Topics: American Indians
- ETST 4144 - Indigenous Political Systems
- ETST 4146 - Indigenous Politics
- ETST 4726 - North American Indian Art

Chicanos/as and Latinos/as

- ETST 2400 - Issues in Chicano/a Education
- ETST 3108 - Chicano/a and Latino/a History
- ETST 3129 - Contemporary Latin American Literature
- ETST 3350 - Colonial Latin America
- ETST 3365 - Aztlan in the United States: Chicano History from 1821
- ETST 3408 - Social Psychology of Latinos/as
- ETST 3838 - History of the Mexican American in Colorado
- ETST 4558 - Chicano and Latino Politics
- ETST 4616 - Selected Topics: Chicanos/as and Latinos/as

Take **one** ETST elective course of your choice.

FILM AND TELEVISION PERFORMANCE MINOR

Introduction

Please click [here](#) to see general Film & Television Department information.

Students in this minor will receive an introductory education and practical experience in the art of on-camera performance. Through guidance from faculty, students will be instructed on methods of acting for various types of film and television projects. This will include fiction, non-fiction, voice work and understanding on how an actor works with directors, camera crews, and audio personnel. Students may also have opportunities to perform in student film productions produced within the department.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

- To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.
- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Film and Television Performance Minor courses:

- FITV 2220 - Acting for Film and Television
- FITV 3220 - Advanced Acting Workshop for Film and Television
- FITV 3570 - Directing for Film and Television
- FITV 4200 - Advanced Directing for Film and Television
- FITV 4400 - Acting for Film and TV Practicum

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

FILM AND TELEVISION PRODUCTION MINOR

Introduction

Please click [here](#) to see general Film & Television Department information.

This minor gives students a hands-on experience in both production and post-production, providing a foundation of basic skills and procedures in the film and television industry.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Film and Television Production Minor courses:

- FITV 1035 - Introduction to Filmmaking
- FITV 1040 - Lighting, Grip, and Sound Introductory Workshop
- FITV 2050 - Production II Film and Television Techniques

Take **two** of the following Film and Television Production Minor courses:

- FITV 2040 - Introduction to Digital Effects
- FITV 2220 - Acting for Film and Television
- FITV 3040 - Live TV Multi-camera Directing
- FITV 3350 - Editing Aesthetics

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

FILM AND TELEVISION WRITING MINOR

Introduction

Please click [here](#) to see general Film & Television Department information.

Students gain writing skills (fiction and non-fiction) for the development of episodic television and film scripts. Students also learn the practices and mechanics expected of professional screenwriters.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **one** of the following Film and Television Writing Minor courses:

- FITV 1001 - Fundamentals of Film and Television
- FITV 1200 - The Culture of Television

Take **all** of the following Film and Television Writing Minor courses:

- FITV 1551 - Scriptwriting for Non-Majors
- FITV 1600 - Writing Short Film:Non Fiction
- FITV 3500 - Writing for Episodic Television
- FITV 3510 - Feature Screenwriting

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

FILM STUDIES MINOR

Introduction

The film studies minor offers students the opportunity to gain an informed understanding of the sophisticated medium of film, its language and history. Courses cover critical writing about cinema, creative screenwriting, the evolution of Hollywood movies, international cinema, and

film in its cultural context. The film studies minor makes a valuable complement to a range of undergraduate majors.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their minor advisor and their CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 ENGL credit hours for the film studies minor.
2. Students must complete a minimum of 6 upper-division (3000-level and above) ENGL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 ENGL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students are strongly advised to take ENGL 2250, Introduction to Film, before taking other film courses.

2. Students are advised to fulfill the liberal arts and sciences core curriculum writing requirements (ENGL 1020 & 2030) before enrolling in upper-division topics in film courses.
3. No more than two online film studies courses can be counted toward the minor.
4. Courses in a minor cannot be counted toward the English major or English Writing major; consult an English advisor for substitutions.

Take the following required courses:

- ENGL 2250 - Introduction to Film
- ENGL 3070 - Film History I
- ENGL 3080 - Global Cinema

Take **two** additional courses:

- ENGL 2415 - Introduction to Movie Writing
- ENGL 2450 - Introduction to Literature
- ENGL 3075 - Film Genres *
- ENGL 3085 - Film Directors *
- ENGL 3200 - From Literature to Film
- ENGL 3300 - Topics in Film *
- ENGL 4420 - Film Theory and Criticism
- ENGL 4001- Major Authors: Am. Lit
- ENGL 4002- Major Authors: Before 1650
- ENGL 4003- Major Authors: 1650-1900

*Courses are repeatable if taken as a different genre/director/topic.

FINANCE MINOR

Introduction

Please click [here](#) to see Business School information.

Students in other undergraduate schools and colleges at CU Denver wishing to complete the Finance minor need to complete the course work described below.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare the Finance minor, students must have a 3.0 GPA, either cumulative or from their last 24 completed semester hours.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain or exceed a 2.0 GPA to graduate with the minor.
2. A student must take 12 of the 15 hours of required business courses in the minor while in residence at the University of Colorado Denver. If a student has already taken the equivalent of one or more of these courses at another university, other higher-level business courses may be substituted with the approval of the Business School.
3. Students must have declared the Finance minor to register for any of the upper-division FNCE courses or petition separately to take each of these courses.

Take **all** of the following required prerequisite and proficiency courses:

- MATH 1060 - Finite Mathematics (talk to an advisor about substituting a higher level math)
- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- BANA 2010 - Business Statistics (BANA 2010 can be substituted with an upper division stats course such as ECON 3811 or MATH 3800)

Take **all** of the following courses:

- ACCT 2200 - Financial Accounting and Financial Statement Analysis
- FNCE 3000 - Principles of Finance

Take **three** of the following courses:

- FNCE 3500 - Management of Business Capital
- FNCE 3600 - Financial Markets and Institutions
- FNCE 3700 - Investment and Portfolio Management
- FNCE 4370 - International Financial Management
- FNCE 4500 - Corporate Financial Decisions
- FNCE Elective (Can be from list above or any other upper-division FNCE course)

FRENCH MINOR

Introduction

Please click [here](#) to see Modern Languages department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Students may declare a major in the CLAS advising office, but should see the French advisor to discuss course selections.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 15 FREN credit hours.
2. Students must complete a minimum of 15 upper-division (3000-level and above) FREN credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative GPA of 2.0. Students cannot complete minor requirements as pass/fail.
4. Students must complete a minimum of 9 FREN credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. The minor in French must include at least one language skills class, chosen from the classes listed below.
2. FREN 3200 is taught in English, and does not count toward the minor.
3. All upper-division level (3000-level and above) courses must be taught in French.

Take **one** of the following courses:

- FREN 3010 - French Phonetics and Pronunciation
- FREN 3020 - Conversation through Film
- FREN 3050 - Advanced Grammar and Composition
- FREN 3060 - Advanced French Language Skills

Take **four** additional upper-division FREN elective courses.

FUNDAMENTALS OF BUSINESS MINOR

Introduction

The Business School offers all undergraduate students at CU Denver the opportunity to add a minor in fundamentals of business.

Students enrolled in this minor have the benefit of following their passion with their undergraduate degree while adding the business knowledge and skills employers want and entrepreneurs need. By adding a business minor to a liberal arts, arts and media, architecture, or engineering degree, you will gain an edge in the job market.

Program Delivery

- This is an on-campus program

Declaring This Minor

- As a CU Denver undergraduate student, you need a 2.0 GPA to be accepted for a fundamentals of business minor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Program Requirements

1. Please see an advisor regarding residency requirements.
2. Students may only use transfer coursework in place of BMIN 1000. All remaining courses must be completed at CU Denver.
3. Students must maintain or exceed a 2.0 GPA to graduate with the minor.

Take **one** of the following courses:

- MGMT/ BMIN 1000 - Introduction to Business

Take **all** of the following courses:

- BMIN 3001 - Fundamentals of Management and Marketing
- BMIN 3002 - Fundamentals of Accounting and Finance
- BMIN 3004 - Principles of Strategic Management

Take **one** of the following electives:

- BLAW 3050 - Business Law and Ethics
- ENTP 3200 - Essentials in Entrepreneurship
- INTB 3000 - Global Perspectives
- ISMG 2050 - Introduction to Business Problem Solving

GENERAL MUSIC MINOR

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

The general music minor offers students the opportunity to gain an informed understanding of the field of music performance, its language and history. Courses cover applied lessons on a specific instrument and/or voice, music theory, ear training and general recital. Students will also take courses that deal with the function and operation of the music industry, including an introduction to the music business, audio production, and music in culture

Program Delivery

- This is an on-campus program.

Declaring This Major

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

- To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.
- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements. Contact the Music Department at MEIS.Dept@ucdenver.edu for more information on the minor.

Take **all** of the following General Music Minor Required courses (17 semester hours/8 courses total):

- PMUS 1105 - Music Theory I
- PMUS 1115 - Ear Training and Sight Singing I
- PMUS 1901-1923 - Applied Lessons (1 semester hour)
- PMUS 1500 - General Recital (1 semester hour)
- PMUS___ - Ensemble (1 semester hour)
- MUSC 2750 - Introduction to Music Business
- MUSC 1540 - Introduction to Audio Production

Take **One** of the following courses:

- PMUS 1021 - Piano Class For Non-Majors
- PMUS 1040 - Class Guitar
- PMUS 1045 - Class Guitar I for Non-Majors

Take **One** of the following courses:

- PMUS 2315 - Introduction to Songwriting
- PMUS 3832 - Music in Culture

GEOGRAPHY MINOR

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus or online program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 GEOG credit hours.
2. Students must complete a minimum of 9 upper-division (3000- level and above) GEOG credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded

attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.

4. Students must complete a minimum of 9 GEOG credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. The minor is flexible and does not have core requirements. A student can elect to take any GEOG courses as long as they are not being used to fulfill requirements in another degree program in the department.
2. Undergraduate students may count up to 3 credit hours of independent study (GEOG 3840, 4840, 4880/GEOL 3840, 4840, 4880) towards elective credit in the minor as approved by the undergraduate advisor.
3. Students may not double-count courses for the Geography minor and another degree program in the department, the Sustainability Minor, or the GISci Certificate.

HEALTH HUMANITIES MINOR

Introduction

Please click [here](#) to see Health Humanities department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor. Students declaring a minor in HEHM must have at least a 2.5 over GPA.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours taken from the approved courses.
2. Students must complete a minimum of 6 upper-division (3000-level and above) credit hours in the minor taken from the approved courses.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty taken from the approved courses.

Program Restrictions, Allowances and Recommendations

1. Students may only count ONE relevant transfer course toward their elective requirements for the minor.
2. Students may double count no more than two courses from their major or University General Education Core toward the minor elective requirements.

Take the following **required** course:

- HEHM 3100 - Introduction to Health Humanities

Take **three** upper-division (3000-level and above) elective courses from at least two different disciplines. The following list is not exhaustive and continues to be updated. One elective course can be a service learning course or independent study approved by an HEHM advisor.

- ANTH 4600 - Medical Anthropology
- ANTH 3666 - Anthropology of Death
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4558 - Digital Health Narratives
- COMM 4575 - Designing Health Messages
- ENGL 4755 - Illness & Disability Narrative
- ETST 3002 - Ethnicity, Health and Social Justice

- GEOG 3501 - Geography of Health
- GEOG 4235 - GIS Applications in the Health Sciences
- GEOG 4710 - Disasters, Climate Change, and Health
- HIST 4307 - History of Sexuality
- HIST 4503 - Topics in History of Science
- PBHL 3030 - Health Policy
- PBHL 3070 - Perspectives in Global Health
- PBHL 3041 - Health, Culture and Society
- PBHL 4040 - Social Determinants of Health
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PHIL 4242 - Bioethics
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- SOCY 3440 - Medical Sociology
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- COMM 4550 - Rhetorics of Medicine & Health
- ENGL 4290 - Rhetoric and the Body
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present

Take **one** capstone course, identified by an asterisk* in the above list. These courses incorporate substantial original writing or research projects designed to promote broad reflection about the role of culture, society, and ethics in medicine. Students should choose these courses at the culmination of their minor course work.

HISTORY MINOR

Introduction

Please click [here](#) to see History department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program and an online program. Students can complete the minor with all on-campus courses, all online courses, or a mix of on-campus and online courses.

Declaring This Minor

- To declare this minor, contact CLAS advising at CLAS_Advising@ucdenver.edu or visit the CLAS advising office in NC 1030. Students must be in a degree-seeking undergraduate program before they can declare this minor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 18 HIST credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) HIST credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 12 HIST credit hours with CU Denver faculty.

Take a minimum of **three** credit hours (one course) from each of the following areas:

- United States
- Europe
- World

US Distribution:

1361, 1362, 1381, 1400, 2001, 3230, 3121, 3232, 3235, 3297, 3343, 3345, 3347, 3348, 3349, 3360, 3366, 3396, 3601, 4133, 4201, 4209, 4210, 4212, 4213, 4216, 4217, 4219, 4220, 4222, 4223, 4225, 4226, 4227, 4228, 4229, 4230, 4231, 4232, 4234, 4235, 4236, 4238, 4240, 4242, 4243, 4244, 4245, 4306, 4308, 4475, 4491, 4492, 4493, 4494, 4504, 4645

Europe Distribution:

1211, 1212, 1400, 3121, 3480, 3481, 3482, 3484, 3485, 3486, 3487, 3488, 3706, 4027, 4028, 4029, 4030, 4031, 4034, 4035, 4046, 4051, 4062, 4071, 4074, 4081, 4082, 4083, 4303, 4306, 4307, 4346 , 4347, 4348, 4321, 4471, 4472, 4621

World Distribution:

1016, 1026, 3121, 3350, 3364, 3451, 3460, 3469, 3470, 3471 , 3483 , 3500, 3606, 3616, 4032, 4055, 4075, 4076, 4411, 4412, 4414, 4415, 4416, 4417, 4418, 4420, 4421, 4422, 4431, 4451, 4455, 4460 , 4461, 4462, 4490, 4501 , 4503, 4621, 4622

Take an additional **9** HIST elective credit hours. NOTE: Any courses listed above may be used to fulfill the elective requirements once the area distributions have been met.

HUMAN DEVELOPMENT AND FAMILY RELATIONS MINOR

Introduction

Please click [here](#) to see School of Education and Human Development information.

The Human Development and Family Relations (HDFR) minor prepares students to effectively serve and understand culturally and linguistically diverse family systems. For students who are interested in becoming family therapist, work in community based organizations or work as a university or college advisor/administrator this minor will provide excellent foundational courses in these areas. It also provides students with a family systems and ecological systems theories foundation of families and how they interact with community and educational contexts.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend and online courses.

Declaring This Minor

- If you are currently a CU Denver student please contact the Undergraduate Advisor in the School of Education and Human Development to set up an appointment to discuss the process.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. To earn a minor, students must complete 15 approved credit hours specific to the minor, maintain good academic standing in the courses, must complete their undergraduate degree concurrently, must satisfy all requirements in each of the areas below, in addition to their individual major requirements.
2. To complete a minor in HDFR, a student will need to complete 15 semester hours of HDFR courses with a minimum grade of C (2.0) including 1 required and 4 electives.
3. Of those HDFR courses at least 9 credits must be completed at the University of Colorado Denver.
4. Transfer courses must be approved by faculty and/or advisor to apply to the minor.

Take **one** of the following courses:

- HDFR 2000 - Introduction to Family and Community Services
- HDFR 2200 - Love, Family and Human Development

Take **four** HDFR elective courses in Human Development and Family Relations (or newly approved HDFR courses) or pick from the list below. Students will be encouraged to select courses that meet their interest and/or career aspirations. All course selections must be approved by an HDFR advisor or HDFR faculty. Please check the university catalog for when courses are offered. *Other HDFR courses will be added to the list as they are designed and approved.*

- HDFR 1000 - Global Human Development & Learning
- ECED 4030 - Nutrition, Health, and Safety
- ECED 4070 - Development and Education of Infant and Toddlers
- EDFN 1000 - Equality, Rights & Education
- EDFN 3000 - Undocumented Mexican Immigration
- EDFN 4000 - Food Justice in City & Schools
- EDHD 2050 - Current Topics in Education and Human Development
- EDHD 2840 - Independent Study in Education & Human Development
- EDHD 2910 - Service Learning in Education and Human Development

- EDHD 4050 - Special Topics in Education and Human Development
- LCRT 2000 - Rebels, Villains, & Superheroes: How Children's Literature Shapes Our Identities

HUMANITIES MINOR

Introduction

The Humanities Minor cultivates humanistic exploration through historically grounded texts and traditions. It teaches critical engagement with society's most pressing issues by developing a human-oriented perspective in which creativity and critical, theoretical thinking frame ethical being in the world.

These degree requirements are subject to periodic revision by the academic program, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from approved coursework.
2. Students must complete a minimum of 6 upper-division (3000-level and above) credit hours from approved coursework.

3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail. Students must complete a minimum of 12 credit hours with CU Denver faculty, from approved courses.
4. Students must complete a minimum of 12 credit hours with CU Denver faculty, from approved courses.

Program Allowances and Restrictions

1. Coursework must be approved by a Humanities Minor advisor.
2. Of the four elective courses, at least one course must be taken at 3000-level and at least one must be at the 4000-level.

Take the following introductory course:

- HUMN 1012 - The Humanistic Tradition: Modes of Expression
- Students may opt to complete or transfer in a comparable HUMN 1000- or 2000-level course with prior advisor approval.

Take **four** elective courses (12 credit hours) of coursework in Humanities disciplines and Humanities-related programs. These courses must focus on one of three available interdisciplinary pathways:

- Story-telling and Meaning: comprised of Humanities electives focused on how humans make ethical decisions and meaning in life through literature, philosophy, history, and religion.
 - Picturing Humanity: comprising Humanities courses emphasizing the aesthetic role of art, history, film, and visual studies in the constitution of diverse cultural and social perspectives
- OR**
- Theorizing Humanity: comprised of coursework focusing on the public role of social theory, philosophy, ethnic studies, and social justice in the formation of culture and society.

Story-telling and Meaning:

- ENGL 3070 - Film History I
- ENGL 3075 - Film Genres
- ENGL 4236 - The American Short Story
- ENGL 4510 - Whores and Saints: Medieval Women
- ENGL 4735 - Philosophy and Literature
- ETST 3224 - U.S. Middle East Culture and Religion
- ETST 3300 - Shamanic Traditions

- HUMN 4984 - Topics: Interdisciplinary Humanities
- PHIL 3280 - War and Morality
- PHIL 3410 - Asian Philosophies and Religions
- PHIL 3550 - Philosophy of Death and Dying
- PHIL 4270 - Philosophy of History
- PHIL 4470 - Concepts of the Soul
- PHIL 4480 - Perspectives on Good and Evil
- PHIL 4600 - Philosophy of Religion
- PHIL 4933 - Philosophy of Eros
- RLST 4340 - The Hero's Journey
- RLST 4460 - Death and Concepts of Afterlife

Picturing Humanity:

- ENGL 2250 - Introduction to Film
- ENGL 3070 - Film History I
- ENGL 3200 - From Literature to Film
- ETST 3036 - American Indian Cultural Images
- FINE 2600 - Art History Survey I
- FINE 4630 - History of Latin American Art:1520-1820
- FINE 4670 - Greek and Roman Art
- FINE 4680 - Art of the Middle Ages
- FINE 4700 - Italian Renaissance Art
- FINE 4750 - Arts of China
- FINE 4990 - Contemporary Art: 1960 to Present
- FINE 5610 - Pre-Columbian Art
- HIST 4228 - Western Art and Architecture
- HIST 4231 - History in Museums
- HIST 4232 - Historic Preservation
- PHIL 1700 - Philosophy and the Arts
- PHIL 4220 - Aesthetics and the Philosophy of Art

Theorizing Humanity:

- ETST 2024 - Race and Ethnic Relations
- ETST 3211 - Hip Hop Music & Culture
- ETST 3704 - Culture, Racism and Alienation
- HIST 3121 - The World at War, 1914-1945
- HIST 3230 - The American Presidency
- HIST 3231 - Famous U.S. Trials
- HIST 3235 - U.S. Labor History, 1800 to the Present
- HIST 3347 - African-American History, 1619-Present

- HIST 3364 - Native Americans and Spaniards in North America
- HIST 3365 - Aztlan in the United States: Chicano History from 1821
- HIST 3366 - Nature and Power in American History
- HIST 3601 - Colorado History
- HIST 4027 - Enlightenment and Revolution
- HIST 4028 - Nations and Classes: 19th Century Europe
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4076 - History of Modern Science
- HUMN 4251 - Introduction to Legal Studies
- HUMN 4984 - Topics: Critical Public Humanities
- HUMN 4984 - Topics: Spatial Humanities
- SJUS 2000 - Foundations in Social Justice
- SJUS 2010 - Social Justice: Theories, Narratives, and Technologies

If a student wants to deviate from these lists, they must have advisor approval prior to completing the substitute coursework.

ILLUSTRATION MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

The illustration minor is designed for students interested in broadening their visual communication skills and obtaining an introductory understanding of what is involved in the production of client-driven visual work. Undergraduates explore digital as well as hand-produced techniques and gain a basis for combining the two in a seamless manner in rendered illustrative works. This minor allows students to complement their major area of study with professionally effective visual communication skills.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Illustration Minor courses:

- FINE 1100 - Drawing I
- FINE 1400 - Two Dimensional Design
- FINE 2405 - Introduction to Digital Design
- FINE 3010 - Illustration I: Image Making
- FINE 3300 - Painting, Drawing and the Printed Image
- FINE 3410 - Illustration II: Digital Media
- FINE 3450 - Digital Painting
- FINE 3557 - Concepts in Illustration

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

INTERNATIONAL STUDIES MINOR

Introduction

Please [click here](#) to see International Studies department information.

As the globe becomes increasingly connected, students gravitate towards classes that provide the interdisciplinary skills and international awareness required for success in the 21st century.

The International Studies minor at CU Denver offers students a unique opportunity to create an individually tailored and relevant minor based upon a spectrum of Liberal Arts classes.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program, available to students at the Denver campus and International College of Beijing.

Declaring This Minor

- Denver students: please see your CLAS advisor
- ICB students: please see the International Studies advisor

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 18 credit hours from the approved courses.
2. Students must complete a minimum of 15 upper-division (3000-level and above) credit hours in the minor from the approved courses.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.5. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty from the approved courses.

Program Restrictions, Allowances and Recommendations

1. Please note: Students cannot take more than two upper-division courses from the same department for the minor.

2. The maximum amount of credit hours a student could receive through independent study courses is 6.
3. Students may be able to complete all 18 credits via online courses.
4. Students who did not select INTS 2020 Foundations of International Studies for their introductory course are permitted to take that course to fulfill one of the five upper-division courses slots.
5. Additional courses may be considered by individual request. Please contact Alison.Shah@ucdenver.edu

Take **one** introductory class from Political Science or History:

- INTS 2020 - Foundations of International Studies
- PSCI 3022 - Political Systems of the World
- PSCI 3042 - Introduction to International Relations
- HIST 4032 - Globalization in World History Since 1945

Take **five** upper division elective courses (3000-4000 level) with an international focus.

Courses on international and global topics may come from Anthropology, Communication, Economics, Ethnic Studies, Geography, History, or Political Science, or other departments.

Students are encouraged to select as one of their elective courses 3000- or 4000-level seminar in a discipline other than their major to ensure that high level work in another field is being performed. Representative seminar courses are listed below.

ACTIVISM, RESISTANCE, AND SOCIAL JUSTICE

- ANTH 3410 - Anthropology of Work
- ANTH 4230 - Anthropology and Community Based Participatory Research
- HIST 3364 - Native Americans and Spaniards in North America
- HIST 4415 - Social Revolutions in Latin America
- PBHL 3070 - Perspectives in Global Health
- PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers (also ANTH)
- PSCI 3050 - Islamophobia
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4025 - Local Governance and Globalization
- PSCI 4115 - Third World Politics
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4165 - Islamic Politics and Culture

- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4225 - Democracy and Democratization
- PSCI 4265 - Social Justice and Globalization
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4555 - International Women's Resistance
- PSCI 4808 - Strategies of Peacebuilding
- PSCI 4807 - Political Violence

ENVIRONMENTAL STUDIES

- ANTH 4450 - Development and Conservation: Contemporary Issues
- ECON 4530 - Economics of Natural Resources
- ECON 4540 - Environmental Economics
- ECON 4770 - Development Economics
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3412 - Globalization and Regional Development
- GEOG 3440 - Ecotourism
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4335 - Contemporary Environmental Issues
- HIST 3616 - Global History of Energy
- PHIL 3430 - Environmental Ethics
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4354 - Environmental Politics
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4365 - Global Ecological Crises

ETHNICITY, NATIONALISM & MIGRATION

- ANTH 3000 - Globalization, Migration and Transnationalism
- ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers
- EDFN 3000 - Undocumented Mexican Immigration
- ETST 3110 - Indigenous Studies
- ETST 4726 - North American Indian Art
- FREN 3120 - French Cultural Identities: Myths and Realities

- FREN 4520 - Voices of Haiti and the Caribbean
- GRMN 3200 - Current German Society and Culture
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4461 - The Modern Middle East
- PSCI 3050 - Islamophobia
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain

FEMINIST THEORY & GENDER STUDIES

- ANTH 4200 - Gender in Cross-Cultural Perspective
- COMM 4020 - Feminist Perspectives on Communication
- ETST 4555 - International Women's Resistance
- FREN 4510 - French Women Writers
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PSCI 4248 - Gender, Globalization and Development
- SPAN 4360 - Women and the Spanish Civil War
- WGST 4215 - Women's Rights, Human Rights: Global Perspectives
- WGST 4248 - Gender, Globalization and Development
- WGST 4303 - Sex and Gender in Modern Britain

GLOBAL ARTS & CULTURES

- ANTH 3142 - Cultural Diversity in the Modern World
- CHIN 3300 - Special Topics on Chinese Film
- ENGL 4460 - Contemporary World Literature
- ENGR 3600 - International Dimensions of Technology and Culture
- FINE 4610 - Pre-Columbian Art
- FINE 4630 - History of Latin American Art:1520-1820
- FINE 4730 - Arts of Japan
- FINE 4750 - Arts of China
- FINE 4770 - Art of India and Southeast Asia
- FREN 4480 - Twentieth Century French Novel
- FREN 4490 - Twentieth Century French Theater
- FREN 4510 - French Women Writers
- FREN 4520 - Voices of Haiti and the Caribbean
- GRMN 3512 - Faust in Literature and Music
- GRMN 3540 - German Cinema and Society

- HIST 4462 - Islam in Modern History
- PSCI 4057/RLST 4500 - Religion and Politics
- PSCI 4146 - Indigenous Politics
- RLST 2660 - World Religions
- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3230 - Ibero-American Cultures through Film
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 3410 - Survey of Spanish Literature II
- SPAN 4110 - Contemporary Spanish Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4170 - Golden Age Drama
- SPAN 4180 - Modernism
- SPAN 4190 - Nineteenth-Century Spanish Novel
- SPAN 4300 - Generation of 1898
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain
- SPAN 4330 - Modern Culture of Spain through Film and Narrative
- SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature
- SPAN 4360 - Women and the Spanish Civil War
- SPAN 4380 - Romanticism in Spain
- FITV 3550 - World Theatre

GLOBAL DEVELOPMENT STUDIES

- ANTH 4070 - Culture of Development and Globalization
- ANTH 4450 - Development and Conservation: Contemporary Issues
- ECON 3400 - Economics of Sex and Drugs
- ECON 3770 - Issues in Economic Development
- ECON 4530 - Economics of Natural Resources
- ECON 4770 - Development Economics
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 3412 - Globalization and Regional Development
- GEOG 3440 - Ecotourism
- GEOG 4265 - Sustainability in Resources Management
- HIST 3616 - Global History of Energy
- PSCI 4235 - Politics and Markets in Latin America
- PSCI 4025 - Local Governance and Globalization
- PSCI 4115 - Third World Politics
- PSCI 4155 - Political Systems of the Middle East and North Africa

- PSCI 4185 - Corruption in the U.S. and Abroad
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4365 - Global Ecological Crises
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4605 - Politics and Governments of South Asia

GLOBAL HEALTH STUDIES

- ANTH 3420 - Anthropology and Politics of the Global Tobacco Epidemic
- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4040 - Anthropology of Food and Nutrition
- ANTH 4060 - Evolutionary Medicine
- ANTH 4080 - Global Health Practice
- ANTH 4090 - Drug Syndemic
- ANTH 4300 - Migrant Health
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 4710 - Disasters, Climate Change, and Health
- HIST 4348 - Mind and Malady: A History of Mental Illness
- PBHL 3041 - Health, Culture and Society
- PBHL 3070 - Perspectives in Global Health
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PBHL 4020 - Global Health: Comparative Public Health Systems
- PBHL 4080 - Global Health Practice
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PSCI 4365 - Global Ecological Crises

INTERNATIONAL BUSINESS, COMMUNICATION & MEDIA

- ANTH 3121 - Language, Culture, and Communication
- ANTH 3142 - Cultural Diversity in the Modern World
- COMM 3271 - Communication and Diversity
- COMM 4430 - Communication, China, and the US
- COMM 4720 - Dynamics of Global Communication
- ENGL 3798 - International Perspectives in Literature and Film
- ENGR 3600 - International Dimensions of Technology and Culture
- ENGR 3995 - Global Technology, Business & Culture
- ETST 3272 - Global Media
- FREN 3140 - Contemporary Francophone Cultures

- FREN 3200 - The Francophone World in the Post-Colonial Era
- INTB 4400 - Environments of International Business
- INTB 4950 - Special Topics in International Business
- MGMT 4834 - Global Sports & Entertainment Management
- MKTG 4200 - International Marketing
- MKTG 4220 - Asian Business Development and Marketing
- MKTG 4580 - International Transportation
- SPAN 3700 - Spanish for International Business I
- SPAN 3710 - Spanish for International Business II

INTERNATIONAL POLITICAL ECONOMY

- ANTH 4090 - Drug Syndemic
- ECON 3400 - Economics of Sex and Drugs
- ECON 3415 - Issues in International Trade and Finance
- ECON 4081 - Intermediate Macroeconomic Theory
- ECON 4410 - International Trade
- ECON 4420 - International Finance
- FNCE 3000 - Principles of Finance
- FNCE 4370 - International Financial Management
- GEOG 3430 - Geography of Tourism
- INTB 3000 - Global Perspectives
- INTB 4028 - Global Study Topics
- PSCI 4025 - Local Governance and Globalization
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4645 - Comparative Political Leadership

PEACE, HUMAN RIGHTS, & SECURITY

- ANTH 4180 - The Nature of Power
- GEOG 4305 - Water Quality and Resources
- HIST 3121 - The World at War, 1914-1945
- HIST 3616 - Global History of Energy
- HIST 4220 - U.S. Foreign Policy Since 1912
- HIST 4490 - Weapons of Mass Destruction
- HIST 4471 - The Second World War
- HIST 4472 - The 1950s: Korean War, the Cold War and Social Transformation
- HIST 4475 - The Vietnam War
- PHIL 3280 - War and Morality

- PSCI 3050 - Islamophobia
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4216 - International Politics: Human Rights
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4236 - American Foreign Policy
- PSCI 4266 - International Law
- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4280 - The Politics of War Law
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4555 - International Women's Resistance
- PSCI 4807 - Political Violence
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4240 - International Security
- PSCI 4736 - The Middle East in World Affairs
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4225 - Democracy and Democratization
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4237 - American National Security
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- SPAN 4360 - Women and the Spanish Civil War
- WGST 4215 - Women's Rights, Human Rights: Global Perspectives

AFRICA (SUB-SAHARAN)

- ETST 4730 - Peoples and Cultures of Sub-Saharan Africa
- FREN 3200 - The Francophone World in the Post-Colonial Era
- HIST 3451 - Introduction to African History
- HIST 3500 - African History in Novels and Films
- HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.
- HIST 4451 - Southern Africa
- HIST 4455 - African Struggle for Independence
- PSCI 3050 - Islamophobia
- PSCI 4195 - Political Systems of Sub-Saharan Africa

ASIA

- HIST 3469 - Intro to East Asia: To 1800

- HIST 3470 - Intro to East Asia: Since 1800
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4186 - East Asia in World Affairs
- RLST 3410/PHIL 3410 - Asian Philosophies and Religions
- CHIN 3200 - Contemporary Chinese Society and Culture
- CHIN 3300 - Special Topics on Chinese Film
- CHIN 3840 - Independent Study: CHIN
- CHIN 3995 - Global Study Topics
- CHIN 4880 - Directed Research
- COMM 3230 - Chinese Communication & Culture in Context
- FINE 4750 - Arts of China
- GEOG 3160 - Geography of China
- HIST 4420 - Traditional China: China to 1600
- HIST 4421 - Modern China
- PSCI 4615 - Politics and Government of China
- RLST 3660/PHIL 3981 - Chinese Philosophy and Culture
- PSCI 4726 - Seminar on U.S. and China Relations
- FINE 4770 - Art of India and Southeast Asia
- HIST 4475 - The Vietnam War
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- FINE 4730 - Arts of Japan
- HIST 4431 - Modern Japan

COLONIAL, NEO-COLONIAL, AND POSTCOLONIAL WORLDS

- FREN 3140 - Contemporary Francophone Cultures
- FREN 3200 - The Francophone World in the Post-Colonial Era
- HIST 3232 - The American Colonies to 1750
- HIST 3350 - Colonial Latin America
- HIST 3451 - Introduction to African History
- HIST 3460 - Modern Latin American History
- HIST 3500 - African History in Novels and Films
- HIST 4416 - The Age of Imperialism
- HIST 4451 - Southern Africa
- HIST 4455 - African Struggle for Independence
- PSCI 3050 - Islamophobia
- PSCI 4115 - Third World Politics
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4195 - Political Systems of Sub-Saharan Africa

- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4146 - Indigenous Politics
- PSCI 4225 - Democracy and Democratization
- PSCI 4265 - Social Justice and Globalization
- PSCI 4736 - The Middle East in World Affairs
- RLST 3500 - Religions of India
- SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial

EUROPE

- GEOG 3120 - Geography of Europe
- HIST 3480 - Introduction to European History
- HIST 3706 - Age of Revolution
- HIST 4027 - Enlightenment and Revolution
- HIST 4028 - Nations and Classes: 19th Century Europe
- HIST 4029 - Age of Anxiety in Europe
- HIST 4303 - Sex and Gender in Modern Britain
- PSCI 4105 - Comparative Politics: Europe
- PSCI 3050 - Islamophobia
- WGST 4345 - Gender, Science, and Medicine: 1600 to the Present
- HIST 4046 - Victorians and Victorianism
- WGST 4303 - Sex and Gender in Modern Britain
- FREN 3112 - Survey of French Literature I
- FREN 3120 - French Cultural Identities: Myths and Realities
- FREN 3122 - Survey of French Literature II
- FREN 3130 - Current Topics of the French-Speaking World
- FREN 4200 - French Civilization Through the Nineteenth Century
- FREN 4210 - French Civilization - Twentieth and Twenty-First Centuries
- FREN 4310 - Seventeenth Century Literature
- FREN 4360 - Eighteenth Century Novel, Theater and Poetry
- FREN 4430 - Nineteenth Century French Novel
- FREN 4480 - Twentieth Century French Novel
- FREN 4490 - Twentieth Century French Theater
- FREN 4510 - French Women Writers
- FREN 4600 - History of the French Language
- HIST 4062 - Modern France, 1789 to the Present
- GRMN 3110 - Introduction to German Literature I
- GRMN 3130 - Current Topics of the German-Speaking World
- GRMN 3200 - Current German Society and Culture

- GRMN 3230 - German Civilization I: From Medieval Through Age of Idealism
- GRMN 3240 - German Civilization II: The Modern Age
- GRMN 3310 - Techniques of Translation
- GRMN 3512 - Faust in Literature and Music
- GRMN 3540 - German Cinema and Society
- GRMN 4050 - Advanced German Phonetics and Language History
- HIST 4071 - Modern Germany
- HIST 4074 - Post-War Germany
- HIST 4086 - Eastern Europe
- HIST 4083 - Russia Since 1917
- PSCI 4505 - Political System of Russia and Its Neighbors
- SPAN 3101 - Introduction to the Study of Literature
- SPAN 3199 - Topics in Spanish Literature
- SPAN 3221 - Culture and Civilization of Spain I
- SPAN 3222 - Culture and Civilization of Spain II
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3400 - Survey of Spanish Literature I
- SPAN 3410 - Survey of Spanish Literature II
- SPAN 3782 - Introduction to Translation I
- SPAN 3792 - Introduction to Translation II
- SPAN 4010 - History of the Spanish Language
- SPAN 4020 - Spanish Sociolinguistics
- SPAN 4110 - Contemporary Spanish Literature
- SPAN 4130 - Medieval Spanish Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4170 - Golden Age Drama
- SPAN 4180 - Modernism
- SPAN 4190 - Nineteenth-Century Spanish Novel
- SPAN 4300 - Generation of 1898
- SPAN 4320 - Interculturalism and Transnationalism in Modern Spain
- SPAN 4330 - Modern Culture of Spain through Film and Narrative
- SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature
- SPAN 4350 - Don Quijote
- SPAN 4360 - Women and the Spanish Civil War
- SPAN 4380 - Romanticism in Spain
- SPAN 4399 - Special Topics: Spanish Peninsular Literature

GLOBAL

- ANTH 3000 - Globalization, Migration and Transnationalism

- ANTH 3008 - Contemporary World Problems: An Anthropological Perspective
- ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers
- ANTH 4350 - Anthropology of Globalization
- ECON 3415 - Issues in International Trade and Finance
- ENGL 4460 - Contemporary World Literature
- RISK 4950 - Special Topics: Cyber Risk Management & Cyber Warfare
- ECON 3770 - Issues in Economic Development
- FNCE 3600 - Financial Markets and Institutions
- GEOG 3412 - Globalization and Regional Development
- GEOG 4710 - Disasters, Climate Change, and Health
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- HIST 3616 - Global History of Energy
- HIST 4416 - The Age of Imperialism
- HIST 4417 - Commodities and Globalization
- HIST 4462 - Islam in Modern History
- HIST 4490 - Weapons of Mass Destruction
- HIST 4621 - Explorers and Exploration
- HIST 4622 - Oceans In History
- INTB 3000 - Global Perspectives
- MGMT 3830 - Business and Sustainability
- PSCI 3022 - Political Systems of the World
- PSCI 3042 - Introduction to International Relations
- PSCI 3050 - Islamophobia
- PSCI 4025 - Local Governance and Globalization
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4266 - International Law
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4365 - Global Ecological Crises
- PSCI 4555 - International Women's Resistance
- PSCI 4808 - Strategies of Peacebuilding
- PSCI 4878 - War, Film, and International Law
- SOCY 3720 - Global Perspectives on Social Issues

ISLAMIC WORLD

- HIST 4461 - The Modern Middle East
- HIST 4462 - Islam in Modern History

- PSCI 3050 - Islamophobia
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4736 - The Middle East in World Affairs
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- RLST 3120 - Islamic Traditions
- RLST 3000 - Judaism, Christianity and Islam: Affinity and Difference

LATIN AMERICA

- ANTH 4320 - Archaeology of Mexico and Central America
- ETST 3129 - Contemporary Latin American Literature
- FINE 4610 - Pre-Columbian Art
- FINE 4630 - History of Latin American Art:1520-1820
- GEOG 3130 - Central America and the Caribbean
- GEOG 3140 - Geography of South America
- HIST 3350 - Colonial Latin America
- HIST 3460 - Modern Latin American History
- HIST 4411 - Modern Mexico
- HIST 4414 - Nationalism and State Building in Latin America, 1750-1850
- HIST 4415 - Social Revolutions in Latin America
- PSCI 4235 - Politics and Markets in Latin America
- SPAN 3212 - Spanish American Culture and Civilization
- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 4060 - Dialects of the Spanish-Speaking World
- SPAN 4512 - Contemporary Argentine Short Stories
- SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial
- SPAN 4522 - Mexican Literature II: 19th to 21st Centuries
- SPAN 4525 - Orientalisms In The Hispanic Tradition
- SPAN 4541 - Unexpected Lives: Ibero-American Queer Cinema
- SPAN 4550 - Garcia Marquez: Words of Magic
- SPAN 4590 - Ibero-American Thought

LAW ENFORCEMENT MINOR

Introduction

Please click [here](#) to see School of Public Affairs information.

The undergraduate minor in Law Enforcement provides a detailed, comprehensive, and advanced education in the field of law enforcement. This program is designed for students who are employed or will work in the field of law enforcement.

The CJLE program applies a multi-faceted approach to higher education that:

- Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
- Focuses on specific, yet comprehensive, substantive areas of law enforcement that students can apply to their current or future careers in the field.

Students completing the CJLE minor will have the knowledge and skills to evaluate and respond to a variety of situations in law enforcement professions that require technical, analytic, substantive, and ethical decision-making. They will understand the different environments and contexts in which law enforcement carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Minor

- Please contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Law Enforcement minor requires 18 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the minor.

3. Students must receive a minimum C- grade in each course applied to satisfy the minor requirements.

Take **all** of the following required courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory
- CRJU 4043 - Law Enforcement
- CRJU 4540 - Evidence-Based Approaches in Law Enforcement

Program Electives

There are two elective categories, Topic Area and Professional Setting. The Topic Area electives allows the student to explore a different aspect of law enforcement. The Professional Skills elective allows the student to hone skills related to law enforcement.

Topic Area (students **take one** of the following):

- CRJU 3310 - Contemporary Issues in Law Enforcement
- CRJU 3320 - Police-Community Relations
- CRJU 3520 - Juvenile Justice
- CRJU 3530 - Juvenile Delinquency
- CRJU 4410 - Criminal Law and Constitutional Procedures
- CRJU 4430 - Law and Society
- CRJU 4450 - Homeland Security
- PSCI 4427 - Law, Politics and Justice
- SOCY 4340 - Juvenile Delinquency
- SOCY 4700 - Sociology of Law
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment.

*Students must adhere to departmental prerequisites, if applicable.

Professional Skills (students **take one** of the following):

- ANTH 3550 - Forensic Anthropology
- CRJU 4310 - Leadership Roles in Criminal Justice
- CSCI 1001 - Computer Forensics I
- GEOG 4080 - Introduction to GIS
- CRJU 4939 - Internship (must be related to Law enforcement and be pre-approved)
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment.

*Students must adhere to departmental prerequisites, if applicable.

LAW STUDIES MINOR

Introduction

Please click [here](#) to see Law Studies department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To apply for this minor, students must complete and submit a major/minor change declaration form to the CLAS Advising Office in North Classroom, 1030.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 18 credit hours from the approved courses.
2. Students must complete a minimum of 18 upper-division (3000-level and above) credit hours in the minor from the approved courses.
3. Students must earn a minimum grade of C (2.0) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 3.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 18 credit hours with CU Denver faculty from the approved courses.

Program Restrictions, Allowances and Recommendations

1. All courses must be taken in residence at CU Denver from CU Denver faculty. No transfer courses apply.
2. Courses taken for the minor cannot serve to fulfill requirements of the university general education or the CLAS undergraduate core graduation requirements. Courses taken for a student's major cannot be used to fulfill any requirements for the minor unless prior permission is granted by the minor coordinator.
3. Every course used to complete minor requirements must be upper-division (3000-level and above).

Take the following Foundations courses:

- HUMN 4251 - Introduction to Legal Studies
- SSCI 4025 - Legal Advocacy and Social Engagement

Take **two** of the following Constitutional Thought courses:

- PSCI 4477 - Constitutional Law I
- PSCI 4487 - Constitutional Law II
- SSCI 4060 - Topics in Law Studies: Constitutional Thought
- SSCI 4325 - First Amendment: Theory and Context

Take **two** of the following Social Context of Law courses:

- COMM 3231 - Famous U.S. Trials
- CRJU 4430 - Law and Society
- ECON 4230 - Law and Economics
- HIST 4308 - Crime, Policing, and Justice in American History
- PHIL 4260 - Philosophy of Law
- PSYC 3505 - Psychology and the Law
- SOCY 4700 - Sociology of Law
- SSCI 4070 - Topics in Law Studies: Social Context of Law

LINGUISTICS MINOR

Introduction

Please click [here](#) to see information about the Department of Modern Languages.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

The minor in Linguistics is an interdisciplinary program awarded through the Department of Modern Languages. The minor is designed to guide students through an exact and structured discipline that examines various aspects of the nature of human language. A Linguistics minor may be of particular interest to students majoring in a Foreign Language, as well as majors in fields such as Anthropology, English, Communication, Education, Philosophy, and Sociology. The Linguistics minor is open to all undergraduate students at CU Denver.

Program Delivery

- This is an on campus program.

Declaring This Minor

- Please see your advisor. To be admitted to minor status in Linguistics, students must have an overall GPA of C+ (2.3)

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses below.
2. Students must complete a minimum of 6 upper-division (3000-level and above) credit hours in the minor, chosen from the approved courses below.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.5. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Program Restrictions, Allowances and Recommendations

1. Upon declaring a minor in Linguistics, each student will be assigned to a faculty advisor with whom the student should consult at least once per semester thereafter. It is especially important that students have their transcripts reviewed by their advisor before enrolling in their final 30 credit hours at CU Denver. Failure to do so may result in delay of graduation.
2. Courses taken at other institutions may be applied to the minor, but only with approval of a Linguistics faculty advisor in the Department of Modern Languages.

Take **both** of the following courses:

- LING 2000 - Foundations of Linguistics
- LING 3100 - Language in Society

Take **nine credit hours** from the following elective courses:

- ANTH 3121 - Language, Culture, and Communication
- CHIN 3130 - Special Topics in Chinese
- CLDE 1000 - Language, Identity, & Power: International Perspectives
- CLDE 4030 - Language Development of Multilingual Learners
- CLDE 4820 - Teaching Multilingual Learners
- ENGL 3160 - Language Theory
- ENGL 4080 - History of English Language
- ENGL 4601 - Principles and Practices of Second Language Acquisition
- ENGL 4651 - Second Language Writing
- FREN 3010 - French Phonetics and Pronunciation
- FREN 4600 - History of the French Language
- GRMN 3050 - Phonetics and Pronunciation of German
- GRMN 4050 - Advanced German Phonetics and Language History
- MLNG 4690 - Methods of Teaching Modern Languages
- MLNG 4691 - Methods of Teaching Modern Languages II
- PHIL 2441 - Logic, Language and Scientific Reasoning
- SPAN 3060 - Hispanic Phonetics: Theory and Practice
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 4010 - History of the Spanish Language
- SPAN 4020 - Spanish Sociolinguistics
- SPAN 4060 - Dialects of the Spanish-Speaking World
- SPAN 4070 - Spanish Applied Linguistics & Second Language Acquisition
- SPAN 4076 - Spanish in Colorado

- SPAN 4080 - Spanish in the United States
- SPAN 4099 - Special Topics in Linguistics

LITERATURE MINOR

Introduction

Please click [here](#) to see English department information.

This program is designed for students who are interested in the study of English literature but who have elected to major in another area. The recommended series of courses allows students to become acquainted with some of the methods of literary study and with a number of the most important literary works. The literature minor allows students to complement their area of major study with systematic experience in literature.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and their CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 15 ENGL credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) ENGL credit hours.

3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 ENGL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students must take ENGL 1020 before beginning the minor.
2. Courses in a minor cannot be counted toward the English major or English Writing major.
3. A minimum of 9 upper-division (3000- or 4000-level) ENGL credit hours must be taken with CU Denver English faculty.
4. Course requirements may not be met by independent study.

Note: Students are advised to fulfill the liberal arts and sciences core curriculum writing requirements (ENGL 1020 & 2030) before enrolling in upper-division literature courses.

Take the following **required** courses:

- ENGL 2450 - Introduction to Literature

Take **one** ENGL Literature/Film course at any level, from the list below:

- ENGL 1601 - Storytelling: Literature, Film, and Television
- ENGL 2250 - Introduction to Film
- ENGL 2510 - Greek and Roman Mythology
- ENGL 2520 - The Bible as Literature
- ENGL 2600 - Literary Classics
- ENGL 3001 - Critical Writing
- ENGL 3070 - Film History I
- ENGL 3075 - Film Genres
- ENGL 3080 - Global Cinema
- ENGL 3085 - Film Directors
- ENGL 3200 - From Literature to Film
- ENGL 3300 - Topics in Film
- ENGL 3330 - Topics in Literature
- ENGL 3450 - Contemporary Women Writers
- ENGL 3480 - Modern Drama
- ENGL 3520 - Religious Narratives
- ENGL 3661 - Shakespeare

- ENGL 3700 - American Literature to the Civil War
- ENGL 3750 - American Literature after the Civil War
- ENGL 3795 - Race and Ethnicity in American Literature
- ENGL 3798 - International Perspectives in Literature and Film
- ENGL 4000 - Studies of Major Authors
- ENGL 4160 - Poetics
- ENGL 4166 - History of American Poetry
- ENGL 4200 - Survey of the English Novel to 1900
- ENGL 4210 - History of the English Novel II
- ENGL 4220 - African-American Literature
- ENGL 4230 - The American Novel
- ENGL 4235 - Faulkner
- ENGL 4236 - The American Short Story
- ENGL 4240 - Topics in Contemporary American Literature
- ENGL 4250 - Twentieth Century Fiction
- ENGL 4300 - History of British Drama
- ENGL 4320 - History of Poetry in English
- ENGL 4350 - History of American Drama
- ENGL 4400 - Old English I
- ENGL 4410 - Old English II: Beowulf
- ENGL 4420 - Film Theory and Criticism
- ENGL 4460 - Contemporary World Literature
- ENGL 4500 - Medieval Literature
- ENGL 4510 - Whores and Saints: Medieval Women
- ENGL 4520 - English Renaissance
- ENGL 4530 - Milton
- ENGL 4540 - Restoration and the 18th Century
- ENGL 4560 - English Romanticism
- ENGL 4580 - The Victorian Age
- ENGL 4600 - Modernism
- ENGL 4730 - Chaucer
- ENGL 4735 - Philosophy and Literature
- ENGL 4745 - Humanistic Writing About Medicine and Biology
- ENGL 4770 - Topics in English: Film and Literature
- ENGL 4001- Major Authors: Am. Lit
- ENGL 4002- Major Authors: Before 1650
- ENGL 4003- Major Authors: 1650-1900
- ENGL 4771- Topics in English Film and Lit: Film

- ENGL 4772- Topics in English Film and Lit: Lit
- ENGL 4773- Topics in English Film and Lit: Am. Lit
- ENGL 4774- Topics in English Film and Lit: Before 1650
- ENGL 4775- Topics in English Film and Lit: 1650-1900

Take **three** ENGL 3000/4000 Literature/Film course from the list above.

*Courses are repeatable if taken as a different genre/author/topic.

Students are encouraged to cluster their courses around a special interest, such as:

- **Major Authors**
 - Chaucer, Shakespeare, Milton, Austen, Cather, Nobel Authors, etc.
- **Genre**
 - Any Drama, Speculative Fiction, Short Story, Young Adult Fiction, American or British Novel, American or History of English Poetry, Literature to Film, Memoir
- **Self and Social Identity**
 - Harlem Renaissance, Feminist Thought, Women Writers, African American Literature
- **The Modern World through Literature**
 - 20th Century Literature, Contemporary World Literature, Modernism, Major Authors-any 20th century, Modern Drama
- **History through Literature**
 - Medieval, Renaissance, Romantic, Victorian, American Literature
- **Modes of Narrative**
 - Storytelling
 - Poetics

MATHEMATICS MINOR

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in

individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 21 MATH credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) MATH credit hours.
3. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum 9 MATH upper-division level credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Be aware of no co-credit policies. Here is a non-exclusive list of our most common no co-credit policies: no co-credit between (1) 3800 and 4810, (2) 3195 and 3200, (3) 3191 and 3195, (4) 4387 and 4830.
2. For slash-listed courses: (1) MATH 3440/PHIL 3440. (2) Math 4408/CSCI 4408, (3) MATH 4650/CSCI 4650, and (4) Math 4660/CSCI 4660, one can take either the MATH section or the slash-listed section of the course. Either one count towards the minor in MATH.

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III

Take **three** upper-division level MATH courses worth three or more credit hours each, above 3000.

MUSIC INDUSTRY STUDIES MINOR

Introduction

Please click [here](#) to see general Music & Entertainment Industry Studies information.

Music is a rapidly evolving field that requires practitioners to have a broad understanding of the main functional areas and intimate knowledge of the creation and operation of music organizations. The music industry studies minor provides students with a strong foundation in the functional operations of the music industry. At the completion of the minor, students will have an in-depth knowledge of music marketing, artist management, concert promotion and music publishing.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements. Contact the Music Department at MEIS.Dept@ucdenver.edu for more information on the minor.

Take **all** of the following Music Industry Studies Minor courses (15 semester hours/5 courses total):

- MUSC 2750 - Introduction to Music Business
- MUSC 3250 - Music and Entertainment Marketing
- MUSC 3260 - Artist Management
- MUSC 3699 - Concert Promotion and Venue Management
- MUSC 3760 - Music Publishing

There is a recommended sequence for the Music Industry Studies course work. Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing and any prerequisite updates.

NONPROFIT MANAGEMENT MINOR

Introduction

A minor in Nonprofit Management is expected to be popular with students from fields in which nonprofit organizations play a significant role such as psychology, public health, environmental studies, and ethnic studies. Through this minor, a student can focus on the fundamentals of

nonprofit management, and also has the option to participate in extracurricular activities leading to the Certified Nonprofit Professional (CNP) designation through the Nonprofit Leadership Alliance. Contact spa.BAPS@ucdenver.edu for more information about earning the Certified Nonprofit Professional designation as part of the Nonprofit Management minor.

Program Delivery

- All courses are offered online; certain courses are also offered on campus.

Declaring This Minor

- Please contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Nonprofit Management minor requires 15 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the minor.
3. Students must receive a minimum C- grade in each course applied to satisfy the minor requirements.

Take the following required courses:

- PUAD 3110 - Seminar in Nonprofit Management
- PUAD 4140 - Nonprofit Financial Management

Choose **three** courses from the following list of Nonprofit electives:

- PUAD 3005 - Collaboration Across Sectors
- PUAD 4020 - Social Entrepreneurship
- PUAD 4600 - Special Topics in Public Service: Study Abroad in East Africa
- PUAD 4600 - Special Topics in Public Service: Social Problems and Policies in the Urban Environment

Certified Nonprofit Professional Designation

Students completing the Nonprofit Management minor may choose to simultaneously earn the national Certified Nonprofit Professional designation from the Nonprofit Leadership Alliance by completing additional extracurricular requirements. Contact spa.advising@ucdenver.edu for more information.

PAINTING AND DRAWING MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

The painting and drawing minor is designed for students interested in broadening their skills in the production of painterly and hand-drawn works of art. Undergraduates are introduced to a variety of techniques and ideas, exposed to several historical and contemporary art practices, and experience studio practice and participate in art dialogue. This minor allows students to complement their major area of study with applied visual problem-solving strategies and techniques, as well as with an ability to enhance their interests through studio art practice and discourse.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Painting and Drawing Minor courses:

- FINE 1100 - Drawing I
- FINE 2200 - Painting I
- FINE 3200 - Intermediate Painting and Drawing
- FINE 3556 - Concepts in Painting and Drawing

Take **two** of the following Painting and Drawing Minor courses:

- FINE 2030 - Life Drawing
- FINE 3030 - The Media of Drawing **OR** FINE 3995 - Travel Study "Drawing in Italy"
- FINE 3300 - Painting, Drawing and the Printed Image
- FINE 3450 - Digital Painting
- FINE 3556 - Concepts in Painting and Drawing (Note: course concept must be different than previously taken. The FINE 3556 Concepts in Painting and Drawing course encompasses rotating course topics and can be taken up to four times, with a different topic. These topics are as follows: Concepts in Painting and Drawing- Abstraction, Narrative and Pop Culture, and Figuration.)

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

PHILOSOPHY MINOR

Introduction

Please click [here](#) to see Philosophy department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PHIL credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) PHIL credit hours.
3. Students must earn a minimum grade of C-(2.0) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHIL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. For those students who major in philosophy, up to two courses can satisfy the requirements for both programs.
2. Religious Studies courses cannot be used to fulfill the requirements for the minor.

3. Courses taken at other institutions must either be transferred as direct equivalent to a CU Denver course or be approved by an advisor in the Philosophy Department for application towards the minor.
4. Courses not specifically listed here but offered by the Department may count toward the degree upon the approval of the Department Undergraduate Advisor.

Take **all** of the following required courses:

- PHIL 1012 - Introduction to Philosophy: Relationship of the Individual to the World
- PHIL 3002 - Ancient Greek Philosophy
- PHIL 3022 - Modern Philosophy (It is recommended but not required that PHIL 3002 be taken before PHIL 3022.)

Take **two** additional PHIL courses, one of which must be at the upper-division level.

PHILOSOPHY OF SCIENCE MINOR

Introduction

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PHIL credit hours.
2. Students must complete a minimum of 9 upper-division (3000-level and above) PHIL credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHIL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. For those students who major in philosophy, up to two courses can satisfy the requirements for both programs.
2. Religious Studies courses cannot be used to fulfill the requirements for the minor.
3. For a particular PHIL 4812/4980 (Special Topics) course to serve as an elective, the course material must be relevant to the minor and advisor approval to use the course as an elective is required.
4. It is possible to use PHIL courses not listed below to fulfill elective requirements but requires advisor approval.
5. Courses taken at other institutions must either be transferred as direct equivalent to a CU Denver course or be approved by an advisor in the Philosophy Department for application towards the minor.
6. Courses not specifically listed here but offered by the Department may count toward the degree upon the approval of the Department Undergraduate Advisor.

Take **all** of the following required courses:

- PHIL 2441 - Logic, Language and Scientific Reasoning
- PHIL 3340 - Investigating Nature: Introduction to the Philosophy of Science
- PHIL 4350 - Philosophy of Science

Take **six credit hours** from the following elective courses:

- PHIL 3032 - Twentieth Century Analytic Philosophy
- PHIL 3350 - Metaphysics
- PHIL 3360 - Epistemology
- PHIL 3430 - Environmental Ethics

- PHIL 3440 - Introduction to Symbolic Logic
- PHIL 3441 - Philosophical Reasoning Skills
- PHIL 4101 - Pragmatism: Classical American Philosophy
- PHIL 4242 - Bioethics
- PHIL 4300 - Philosophy of Mind
- PHIL 4740 - Empiricism
- PHIL 4920 - Philosophy of Media and Technology

PHOTOGRAPHY MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

Students in the photography minor develop a broad range of technical and conceptual skills that expand their knowledge of image-making. The curriculum of the minor emphasizes photography as a tool for creative expression while integrating the history of photography and contemporary artistic practices. Through an exploration of both digital and analog processes, students select intermediate level courses that enable them to successfully employ a variety of photographic strategies.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Students who wish to declare this minor should contact the College of Arts & Media at CAM@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Photography Minor courses (entry level):

- FINE 1150 - Introduction to Darkroom Photography
- FINE 2155 - Introduction to Digital Photography
- FINE 3630 - History of Photography

Take **three** of the following Photography Minor courses:

- FINE 3135 - Historic Photographic Processes in Italy
- FINE 3156 - Photography Studio and Lighting
- FINE 3160 - Color and the Constructed Image
- FINE 3161 - The Silver Fine Print
- FINE 3162 - The Digital Fine Print
- FINE 3171 - Concepts and Processes in Photography
- FINE 3172 - Photography and Community
- ARCH 3602 - Architecture Photography (available only to architecture majors)

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

PHYSICS MINOR

Introduction

Please click [here](#) to see Physics department information.

Students are strongly encouraged to consult with the Physics advisor, meet physics faculty engaged in Pure & Applied Physics research, attend departmental seminars, and explore ways that Physics relates to research undertaken by faculty in other disciplines.

For more information, contact:

Bodhi Rogers (Physics advisor)

Michael.B.Rogers@ucdenver.edu

Office: North Classroom 3123B

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 16 PHYS credit hours.
2. Students must complete a minimum of 6 upper-division (3000-level and above) PHYS credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PHYS credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. A student majoring in physics cannot earn a minor in physics.

Take **all** of the courses in one of the following four course Physics lecture/lab sequences:

- PHYS 2010 - College Physics I
- PHYS 2321 - Intro Experimental Phys Lab I
- PHYS 2020 - College Physics II
- PHYS 2341 - Intro Experimental Phys Lab II

or

- PHYS 2311 - General Physics I: Calculus-Based
- PHYS 2321 - Intro Experimental Phys Lab I **or**
- PHYS 2351 - Applied Physics Lab I
- PHYS 2331 - General Physics II: Calculus-Based
- PHYS 2341 - Intro Experimental Phys Lab II **or**
- PHYS 2361 - Applied Physics Lab II

Take **six** upper division (3000-level or higher) PHYS credit hours of electives.

POLITICAL SCIENCE MINOR

Introduction

Please click [here](#) to see Political Science department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is both an on-campus program and online program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PSCI credit hours.
2. Students must complete a minimum of 12 upper-division (3000-level and above) PSCI credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PSCI credit hours with CU Denver faculty.

Take **one** of the following courses:

- PSCI 1001 - Introduction to Political Science: The Quest for Freedom and Justice
- PSCI 1101 - American Political System

Take **one** of the following American Politics courses:

- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3214 - Federal Law and American Indians
- PSCI 3347 - Film and Politics
- PSCI 3914 - The Urban Citizen
- PSCI 4009 - Politics of the Budgetary Process
- PSCI 4014 - Media and Politics
- PSCI 4024 - State Politics: Focus Colorado
- PSCI 4025 - Local Governance and Globalization
- PSCI 4034 - Political Parties and Pressure Groups
- PSCI 4044 - The Presidency
- PSCI 4074 - Urban Politics
- PSCI 4075 - Gentrification and Social Equity
- PSCI 4084 - Local Government and Administration
- PSCI 4094 - Seminar: American Politics
- PSCI 4124 - Denver Politics

- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4330 - U.S. Health Policy
- PSCI 4354 - Environmental Politics
- PSCI 4414 - Non-Profits and Social Change
- PSCI 4444 - Contemporary Culture and Politics in America
- PSCI 4477 - Constitutional Law I
- PSCI 4487 - Constitutional Law II
- PSCI 4494 - Judicial Politics
- PSCI 4535 - Labor and Working Class Politics
- PSCI 4545 - Immigration Politics
- PSCI 4554 - Chicano and Latino Politics
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4827 - Women and the Law
- PSCI 4837 - Contemporary Issues in Civil Liberties
- PSCI 4914 - Community Organizing and Community Development

Take **one** of the following Comparative Politics courses:

- PSCI 3022 - Political Systems of the World
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4105 - Comparative Politics: Europe
- PSCI 4115 - Third World Politics
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4186 - East Asia in World Affairs
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4225 - Democracy and Democratization
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4555 - International Women's Resistance

- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4645 - Comparative Political Leadership
- PSCI 4807 - Political Violence
- PSCI 4914 - Community Organizing and Community Development

Take **one** of the following International Politics courses:

- PSCI 3042 - Introduction to International Relations
- PSCI 3064 - Power and Empowerment in the United States
- PSCI 3050 - Islamophobia
- PSCI 4025 - Local Governance and Globalization
- PSCI 4105 - Comparative Politics: Europe
- PSCI 4115 - Third World Politics
- PSCI 4126 - Introduction to International Political Economy
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today
- PSCI 4185 - Corruption in the U.S. and Abroad
- PSCI 4186 - East Asia in World Affairs
- PSCI 4195 - Political Systems of Sub-Saharan Africa
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspective
- PSCI 4216 - International Politics: Human Rights
- PSCI 4225 - Democracy and Democratization
- PSCI 4224 - Dictatorships in 21st Century
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4235 - Politics and Markets in Latin America
- PSCI 4236 - American Foreign Policy
- PSCI 4237 - American National Security
- PSCI 4240 - International Security
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice And Globalization
- PSCI 4266 - International Law
- PSCI 4274 - Conflict Resolution and Public Consent Building

- PSCI 4276 - Conflicts and Rights in International Law
- PSCI 4280 - The Politics of War Law
- PSCI 4286 - International Relations: War or Peace?
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4365 - Global Ecological Crises
- PSCI 4446 - Advanced Indigenous Peoples' Politics
- PSCI 4505 - Political System of Russia and Its Neighbors
- PSCI 4555 - International Women's Resistance
- PSCI 4605 - Politics and Governments of South Asia
- PSCI 4615 - Politics and Government of China
- PSCI 4726 - Seminar on U.S. and China Relations
- PSCI 4736 - The Middle East in World Affairs
- PSCI 4807 - Political Violence
- PSCI 4808 - Strategies of Peacebuilding
- PSCI 4878 - War, Film, and International Law

Take **one** of the following Political Theory courses:

- PSCI 4057 - Religion and Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4407 - Early Political Thought
- PSCI 4417 - Modern Political Thought
- PSCI 4427 - Law, Politics and Justice
- PSCI 4457 - American Political Thought
- PSCI 4564 - Gender and Politics

PSYCHOLOGY MINOR

Introduction

Please click [here](#) to see Psychology department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their minor advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus and online program.

Declaring This Minor

- Please see your CLAS advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 PSYC credit hours.
2. Students must complete a minimum of 6 upper-division (3000-level and above) PSYC credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor course requirements as pass/fail.
4. Students must complete a minimum of 9 PSYC credit hours with CU Denver faculty, at least 6 of which must be upper division (3000-level and above).

Program Restrictions, Recommendations and Allowances **minor is optional, there are no substitutions allowed to these requirements.**

1. Because the minor is optional, there are no substitutions allowed to these requirements.
2. Students cannot earn a Psychology minor, if they are also seeking a Psychology degree.

Take **all** of the following required courses:

- PSYC 1000 - Introduction to Psychology I
- PSYC 1005 - Introduction to Psychology II

Take **one** of the following courses:

- PSYC 3222 - Principles of Learning and Behavior
- PSYC 3144 - Human Cognition

Take **one** of the following courses:

- PSYC 3205 - Human Development I: Child Psychology
- PSYC 3305 - Abnormal Psychology
- PSYC 3415 - Experimental Social Psychology

Take **one** additional PSYC course as an elective (any PSYC course that is not already counting toward another requirement may be used). Students should see their minor advisor regularly to make sure they are completing the correct coursework.

PUBLIC HEALTH DEMOGRAPHY MINOR

Introduction

Please click [here](#) to see Health and Behavioral Sciences department information.

The undergraduate minor in Public Health Demography will introduce students to population-based approaches to health and wellbeing. Both demography and public health draw on theories and methods from across the social and behavioral sciences, to understand population level outcomes. Collectively, the courses in the minor will strengthen skills in analytical thinking, critical thinking, and quantitative reasoning, as related to topics including fertility, mortality, migration, maternal and child health, health disparities, and population health.

The minor in Public Health Demography will help to prepare students for graduate training in public health, demography, epidemiology, or biostatistics. Further, the minor will help to prepare students for jobs that require an understanding of population dynamics. Demographic skills are useful in fields including actuarial studies, marketing, consulting, non-profits, and various agencies in the local, state, and federal government.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 17 credits drawn from the approved course lists.
2. Students must complete a minimum of 6 upper-division PBHL (3000-level and above) credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 PBHL credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Due to substantial overlap in coursework, students who complete the major in Public Health shall not also be awarded the minor in Public Health Demography.

Note: Students should check for prerequisites when enrolling in courses.

Take **all** of the following General Public Health courses:

- PBHL 2001 - Introduction To Public Health
- PBHL 3001 - Introduction to Epidemiology

Take **all** of the following Core Demography courses:

- PBHL 2052 - Global Demography and Health
- SOCY 4220 - Population Change and Analysis

Take **one** of the following electives with Demographic and Statistical themes:

- PBHL 3070 - Perspectives in Global Health
- PBHL 4040 - Social Determinants of Health
- MATH 2830 - Introductory Statistics

PUBLIC HEALTH MINOR

Introduction

Please click [here](#) to see Health and Behavioral Sciences department information.

The undergraduate minor in Public Health is designed to provide students with a basic understanding of the social, cultural, and biological dimensions of health. The minor curriculum provides students with the intellectual and methodological tools needed to understand the joint bio-cultural determinants and contexts of health, health care and public health. Graduates with a minor in Public Health will be prepared for pursuit of graduate degrees in a broad range of fields, including the natural, social and behavioral sciences, public health, law, medicine, dentistry, pharmacy, nursing, business administration, and health services research. The program is especially appropriate for students intending to pursue careers in public health, as well as primary care specialties in medicine, nursing, or health policy and administration.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 24 credit hours from the approved courses.
2. Students must complete a minimum of 12 upper-division (3000-level and above) PBHL credit hours from the approved courses.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 12 PBHL credit hours with CU Denver faculty from the approved courses.

Program Restrictions, Allowances and Recommendations

1. No more than 6 credit hours may be counted toward a major or minor in another department and counted toward the minor in Public Health.
2. Due to substantial overlap in coursework, students who complete the major in Public Health cannot also be awarded the minor in Public Health.
3. Students must complete a minimum of 12 upper-division level credit hours with CU Denver faculty.

Take **both** of the following required courses:

- PBHL 2001 - Introduction To Public Health
- PBHL 3001 - Introduction to Epidemiology

Take **at least two** of the following courses. All four may be taken in lieu of two of the elective courses listed below.

- PBHL 3020 - Introduction to Environmental Health
- PBHL 2052 - Global Demography and Health
- PBHL 3030 - Health Policy
- PBHL 3070 - Perspectives in Global Health
- PBHL 4040 - Social Determinants of Health

Take **one** of the following courses:

- ANTH 1303 - Introduction to Biological Anthropology
- BIOL 1550 - Basic Biology: Ecology and the Diversity of Life
- BIOL 1560 - Basic Biology: From Cells to Organisms

Take **two** of the following elective courses:

- PBHL 3002 - Ethnicity, Health and Social Justice
- PBHL 2052 - Global Demography and Health
- PBHL 3010 - Human Sexuality and Public Health
- PBHL 3021 - Fundamentals of Health Promotion
- PBHL 3031 - Health, Human Biology and Behavior
- PBHL 3041 - Health, Culture and Society
- PBHL 3051 - Mental Illness and Society
- PBHL 3071 - Global Topics In Sexual and Reproductive Health
- PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers
- PBHL 3440 - Medical Sociology
- PBHL 3939 - Internship
- PBHL 3999 - Special Topics in Public Health
- PBHL 4020 - Global Health: Comparative Public Health Systems
- PBHL 4021 - Community Health Assessment
- PBHL 4031 - Ethnographic Research In Public Health
- PBHL 4060 - Evolutionary Medicine
- PBHL/ANTH 4080 - Global Health Practice
- PBHL 4090 - Drug Syndemic
- PBHL 4110 - Public Health Perspectives On Family Violence
- PBHL 4200 - The Global HIV/AIDS Epidemic
- PBHL 4999 - Topics in Public Health
- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4290 - Anthropology and Public Health
- ANTH 4600 - Medical Anthropology
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4575 - Designing Health Messages
- COMM 4620 - Health Risk Communication
- ECON 4660/5660 - Health Economics
- ENVS 1342 - Environment, Society and Sustainability
- ETST 3002 - Ethnicity, Health and Social Justice
- GEOG 3501 - Geography of Health
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4235 - GIS Applications in the Health Sciences
- HEHM 3100 - Introduction to Health Humanities
- HEHM/SOCY 3570 - Death & Dying: Social & Medical Perspectives

- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
- PHIL 4242 - Bioethics
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3822 - Aging, Brain and Behavior
- SOCY 3440 - Medical Sociology
- SOCY 4110 - Sociology of Health Care
- SOCY 4220 - Population Change and Analysis
- SOCY 4290 - Aging, Society and Social Policy

PUBLIC SERVICE MINOR

Introduction

A minor in Public Service, offered by the School of Public Affairs, will provide needed competencies to a generation looking for meaningful work consistent with their social values. Public Service courses provide students with the skills and content knowledge to work in public, private, and nonprofit sectors and the emerging fourth sector that blends social and environmental concerns with business approaches. This minor is particularly useful for students majoring in substantive areas (such as environmental studies, education and human development, and criminal justice) who plan on applying their expertise in public service organizations such as governmental agencies or nonprofit organizations.

Program Delivery

- All courses are offered online; certain courses are also offered on campus.

Declaring This Minor

- Please contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Public Service minor requires 15 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the minor.
3. Students must receive a minimum C- grade in each course applied to satisfy the minor requirements.

Take the following required course:

- PUAD 1001 - Introduction to Leadership and Public Service

Electives

- Take a total of **12** credit hours of electives, **6** of which must be Public Service core required courses offered by the School of Public Affairs, and **6** of which must be upper-division public service electives offered by the School of Public Affairs.

RELIGIOUS STUDIES MINOR

Introduction

Please click [here](#) to see Religious Studies department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor, or the Program Director, Sharon Coggan.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 18 credit hours of approved courses.
2. Students must complete a minimum of 9 upper-division (3000-level and above) credit hours of approved courses in the minor.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. Students cannot complete minor course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours of approved courses with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. A maximum of 9 credits hours of independent study courses may be applied to the minor.
2. Course lists in each category qualify as approved courses. Students may also seek approval from the Religious Studies program director to use a course not designated in the lists below, prior to completing the course.

Required Course

Take the following required course:

- RLST 1610 - Introduction to Religious Studies

Western Religion

Take **one** course from the following approved list:

- RLST 2660 - World Religions *

- RLST 2700 - The Bible as Literature **or**
- ENGL 2520 - The Bible as Literature

- RLST 3000 - Judaism, Christianity and Islam: Affinity and Difference
- RLST 3060 - History of Early Christianity
- RLST 3120 - Islamic Traditions

- RLST 3740 - Biblical Traditions: Old Testament
- RLST 3760 - Biblical Studies: New Testament
- RLST 3770 - Archaeological Discoveries Relating to the Bible

- RLST 4070 - Western Religious Thought **or**
- PHIL 4710 - Western Religious Thought

- RLST 4400 - Differing Concepts of God **or** *
- PHIL 4650 - Differing Concepts of God *

- RLST 4440 - Concepts of the Soul * **or**
- PHIL 4470 - Concepts of the Soul *

- RLST 4460 - Death and Concepts of Afterlife *

- RLST 4462 - Islam in Modern History **or**
- HIST 4462 - Islam in Modern History

* Fulfills requirement for either Eastern or Western religion, but not both simultaneously

Eastern Religion

Take **one** course from the following approved list:

- RLST 2660 - World Religions *

- RLST 3410 - Asian Philosophies and Religions **or**
- PHIL 3410 - Asian Philosophies and Religions

- RLST 3500 - Religions of India

- RLST 3660 - Chinese Philosophy and Culture **or**
- PHIL 3981 - Chinese Philosophy and Culture

- RLST 4080 - Eastern Religious Thought **or**
- PHIL 4720 - Eastern Religious Thought

- RLST 4160 - Mysticism

- • RLST 4400 - Differing Concepts of God **or** *
- PHIL 4650 - Differing Concepts of God *

- RLST 4440 - Concepts of the Soul **or** *
- PHIL 4470 - Concepts of the Soul *

- RLST 4460 - Death and Concepts of Afterlife *

* Fulfills requirement for either Eastern or Western religion, but not both simultaneously

Elective courses

Take **three** courses from the following list. Other courses, such as certain special topics, art history courses featuring religious themes and others may count toward the minor with pre-approval from the minor advisor.

- RLST 1010 - Greek I: Biblical **or**
- GREK 1010 - Greek I: Biblical

- RLST 2660 - World Religions

- RLST 2680 - The American Indian Experience **or**
- ETST 2606 - The American Indian Experience

- RLST 2700 - The Bible as Literature **or**
- ENGL 2520 - The Bible as Literature

- RLST 3000 - Judaism, Christianity and Islam: Affinity and Difference
- RLST 3060 - History of Early Christianity

- RLST 3100 - Islamic Politics and Culture **or**
- PSCI 4165 - Islamic Politics and Culture

- RLST 3120 - Islamic Traditions

- RLST 3300 - Shamanic Traditions **or**
- ETST 3300 - Shamanic Traditions

- RLST 3410 - Asian Philosophies and Religions **or**
- PHIL 3410 - Asian Philosophies and Religions

- RLST 3486 - Renaissance and Reformation **or**
- HIST 3486 - Renaissance and Reformation

- RLST 3500 - Religions of India

- RLST 3660 - Chinese Philosophy and Culture **or**
- PHIL 3981 - Chinese Philosophy and Culture

- RLST 3720 - Religious Narratives **or**
- ENGL 3520 - Religious Narratives

- RLST 3740 - Biblical Traditions: Old Testament
- RLST 3760 - Biblical Studies: New Testament
- RLST 3770 - Archaeological Discoveries Relating to the Bible
- RLST 4000 - Religion and Cultural Diversity
- RLST 4010 - Comparative Religious Systems

- RLST 4020 - Sociology of Religion **or**
- SOCY 4610 - Sociology of Religion

- RLST 4030 - Race, Religion and Belonging in the United States **or**
- ETST 4030 - Race, Religion and Belonging in the U.S.

- RLST 4040 - Psychology of Religion

- RLST 4060 - Philosophy of Religion **or**
- PHIL 4600 - Philosophy of Religion

- RLST 4070 - Western Religious Thought **or**
- PHIL 4710 - Western Religious Thought

- RLST 4080 - Eastern Religious Thought **or**
- PHIL 4720 - Eastern Religious Thought

- RLST 4100 - Special Topics in Religion
- RLST 4160 - Mysticism
- RLST 4300 - Myth and Symbol
- RLST 4320 - Spirituality in the Modern World

- RLST 4340 - The Hero's Journey

- RLST 4360 - Freudian and Jungian Perspectives in Dream Analysis

- RLST 4400 - Differing Concepts of God **or**
- PHIL 4650 - Differing Concepts of God

- RLST 4420 - Goddess Traditions **or**
- WGST 4420 - Goddess Traditions

- RLST 4440 - Concepts of the Soul **or**
- PHIL 4470 - Concepts of the Soul

- RLST 4460 - Death and Concepts of Afterlife
- RLST 4462 - Islam in Modern History **or**
- HIST 4462 - Islam in Modern History
- RLST 4480 - Perspectives on Good and Evil **or**
- PHIL 4480 - Perspectives on Good and Evil
- RLST 4500 - Religion and Politics **or**
- PSCI 4057 - Religion and Politics
- RLST 4710 - Women and Religion **or**
- WGST 4710 - Women and Religion
- RLST 4730 - Whores and Saints: Medieval Women **or**
- ENGL 4510 - Whores and Saints: Medieval Women **or**
- WGST 4510 - Whores and Saints: Medieval Women
- RLST 4840 - Independent Study: RLST
- RLST 4880 - Directed Research
- RLST 3800 - Spirituality and Ecology in Global Societies

RISK MANAGEMENT AND INSURANCE MINOR

Introduction

Please [click here](#) for more information about this program.

Students in other undergraduate schools and colleges at CU Denver wishing to complete the Risk Management and Insurance minor need to complete the course work described below.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare the RMI minor, students must have a 3.0 GPA, either cumulative or from their last 24 completed semester hours.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must maintain or exceed a 2.0 GPA to graduate with the minor.
2. Up to 6 of the 18 semester hours required for the minor may be completed at another institution.
3. Students must have declared the Risk Management and Insurance minor to register for any of the courses or petition separately to take each of these courses.

Take **all** of the following required prerequisite and proficiency courses:

- ISMG 2050 - Introduction to Business Problem Solving
- MATH 1060 - Finite Mathematics
- BANA 2010 - Business Statistics

- *(BANA 2010 can be substituted with an upper division stats course such as ECON 3811 or MATH 3800)
- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- ACCT 2200 - Financial Accounting and Financial Statement Analysis

Take **all** of the following required courses:

- FNCE 3000 - Principles of Finance
- FNCE 3500 - Management of Business Capital
- RISK 3809 - Introduction to Risk Management
- RISK 4809 - Property & Casualty Insurance

Take **two** of the following courses:

- FNCE 3700 - Investment and Portfolio Management
- RISK 4129 - Practical Enterprise Risk Management
- RISK 4209 - Cyber Risk Management
- RISK 4509 - Global Risk Management
- RISK 4609 - Claims Management
- RISK 4709 - Life & Health Insurance
- RISK 4909 - Corporate Risk Management
- RISK 4950 - Special Topics: Cyber Risk Management & Cyber Warfare

Notes

1. Some of the prerequisite courses may be substituted on a case by case basis. Please see an advisor for details.
2. All RISK courses have a fixed tuition rate. However, students have the option to apply for RMI scholarships for each RISK course they take (one scholarship per semester).

SOCIAL JUSTICE MINOR

Introduction

Please click [here](#) to see Social Justice department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses.
2. Students must complete a minimum of 9 upper-division (3000-level and above) credit hours in the minor, chosen from the approved courses below.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Take the following required course:

- SJUS 2000 - Foundations in Social Justice

Take **three** courses from those listed below. This is a sample list of upper division courses, but other courses may be considered.

Anthropology

- ANTH 3000 - Globalization, Migration and Transnationalism
- ANTH 3142 - Cultural Diversity in the Modern World
- ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers
- ANTH 4070/ ANTH 5070 - Culture of Development and Globalization
- ANTH 4300/ ANTH 5300 - Migrant Health

Communication

- COMM 2020 - Communication, Citizenship, and Social Justice
- COMM 2082 - Introduction to Environmental Communication
- COMM 3271 - Communication and Diversity
- COMM 4040 - Communication, Prisons, and Social Justice

- COMM 4260 - Communication and Conflict
- COMM 4265 - Gender and Communication
- COMM 4282 - Environmental Communication
- COMM 4558 - Digital Health Narratives
- COMM 4610 - Communication, Media, and Sex
- COMM 4710 - Topics in Communication

Education

- EDFN 4001/ EDFN 5001 - Problematizing Whiteness: Educating for Racial Justice

English

- ENGL 3330 - Topics in Literature (Literature, Mysteries and Spies)
- ENGL 4190/ ENGL 5190 - Special Topics (Rhetorics of the Body)
- ENGL 4190/ ENGL 5190 - Special Topics (Rhetoric of Disability in Contemporary Film)
- ENGL 4280/ ENGL 5280 - Proposal and Grant Writing
- ENGL 4308 - Contemporary Feminist Thought
- ENGL 4770 - Topics in English: Film and Literature (Mental Difference & Disorders)

Ethnic Studies

- ETST 3002 - Ethnicity, Health and Social Justice
- ETST 3110 - Indigenous Studies
- ETST 3272 - Global Media
- ETST 3274 - Power, Poverty, Culture
- ETST 3396 - History of the American Indian
- ETST 3297 - Social History of Asian Americans
- ETST 3704 - Culture, Racism and Alienation

Geography & Environmental Sciences

- GEOG 4301 - Population, Culture, and Resources
- GEOG 3401 - Geography of Food and Agriculture
- GEOG 3412 - Globalization and Regional Development
- GEOG 3501 - Geography of Health
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4420 - The Politics of Nature

- GEOG 4640/ GEOG 5640 - Urban Geography: Denver and the U.S.
- GEOG 4680 - Urban Sustainability: Perspectives and Practice

History

- HIST 3235 - U.S. Labor History, 1800 to the Present
- HIST 3343 - Women & Gender in US History
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3349 - Social Movements in 20th Century America
- HIST 4028/ HIST 5028 - Nations and Classes: 19th Century Europe
- HIST 4217/ HIST 5217 - Consumer Culture
- HIST 4306/ HIST 5306 - Survey of Feminist Thought
- HIST 4308/ HIST 5308 - Crime, Policing, and Justice in American History
- HIST 4455/ HIST 5455 - African Struggle for Independence

Landscape Architecture

- LDAR 3601 - Intro to Landscape Arch: Engaging Designed Landscape
- LDAR 4486/ LDAR 6686 - Special Topics: Landscape Architecture (Site, Society & Environment)
- LDAR 4486/ LDAR 6686 - Special Topics: Landscape Architecture (Food in the Urban Landscape)

Philosophy

- PHIL 3200 - Social and Political Philosophy
- PHIL 3280 - War and Morality
- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PHIL 3550 - Philosophy of Death and Dying
- PHIL 4101/ PHIL 5101 - Pragmatism: Classical American Philosophy
- PHIL 4812/ PHIL 5812 - Special Topics in Philosophy (Prisons, Punishment, and Social Justice)
- PHIL 4812/ PHIL 5812 - Special Topics in Philosophy (Gender and Sexuality)
- PHIL 4812/ PHIL 4812 - Special Topics in Philosophy (The Woman Question)
- PHIL 4920/ PHIL 5920 - Philosophy of Media and Technology

Political Science

- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSCI 3914 - The Urban Citizen

- PSCI 4002 - Topics in Political Science
- PSCI 4025/ PSCI 5025 - Local Governance and Globalization
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics
- PSCI 4207 - Theories of Social and Political Change
- • PSCI 4265/ PSCI 5265 - Social Justice And Globalization
- PSCI 4535 - Labor and Working Class Politics
- PSCI 4545 - Immigration Politics
- PSCI 4555 - International Women's Resistance
- PSCI 4914 - Community Organizing and Community Development
- PSCI 4808/ PSCI 5808 - Strategies of Peacebuilding

Public Service

- PUAD 4001 - Ethics in Public Service
- PUAD 4002 - Leading for the Public Good

Religious Studies

- RLST 4000 - Religion and Cultural Diversity

Sociology

- SOCY 3001 - Urban Sociology
- SOCY 3020 - Race and Ethnicity in the U.S.
- SOCY 3140 - Sociological Theory
- SOCY 3720 - Global Perspectives on Social Issues
- SOCY 4700 - Sociology of Law

Social Justice

- SJUS 4050/ SJUS 5050 - Special Topics: Social Justice

Social Sciences

- SSCI 4050/ SSCI 5050 - Topics in Social Science (1st Amendment in American Culture Wars)
- SSCI 4050/ SSCI 5050 - Topics in Social Science (Critical Public Humanities)
- SSCI 4050/ SSCI 5050 - Topics in Social Science (Narratives of Americas)

Women's and Gender Studies

- WGST 4306/ WGST 5306 - Survey of Feminist Thought
- WGST 4308/ WGST 5308 - Contemporary Feminist Thought

Take a **3 semester hour** capstone seminar:

Work on a project related to a social justice issue that is important to you with a faculty member in an independent study. Your advisor must approve this course in advance.

SOCIOLOGY MINOR

Introduction

Please click [here](#) to see Sociology department information.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This program is offered on-campus and online.

Declaring This Minor

- Please consult with College of Liberal Arts and Sciences (CLAS) Advising.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 15 SOCY credit hours.
2. Students must complete a minimum of 6 upper-division (3000-level and above) SOCY credit hours.

3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 SOCY credit hours with CU Denver faculty.

Program Allowances and Restrictions

1. Students may count up to 9 semester credits of independent study or internship coursework toward the Sociology minor.

Take the following **required** course:

- SOCY 1001 - Understanding the Social World

Take **one** of the following courses:

- SOCY 2001 - Inequalities in Social World
- SOCY 3115 - Quantitative Methods & Analysis
- SOCY 3119 - Qualitative Methods
- SOCY 3140 - Sociological Theory

Take **nine** credit hours of additional Sociology electives at any level.

SPANISH MINOR

Introduction

Please click [here](#) to see information about the Department of Modern Languages.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 SPAN credit hours.
2. Students must complete a minimum of 15 upper-division (3000-level and above) SPAN credit hours.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 SPAN credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Students may count up to 3 credit hours of Independent Study or Internship courses toward the minor.
2. Students must declare this minor prior to their final semester of coursework.
3. All course work must be taught in Spanish.

Take **one** of the following courses:

- SPAN 3212 - Spanish American Culture and Civilization
- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3221 - Culture and Civilization of Spain I
- SPAN 3222 - Culture and Civilization of Spain II
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3225 - Special Topics In Hispanic Culture
- SPAN 3230 - Ibero-American Cultures through Film

- SPAN 3240 - Food Metaphors: Ibero-American Cuisine and Culture
- SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact
- SPAN 4330 - Modern Culture of Spain through Film and Narrative

Take **four** additional upper-division (3000-level and above) SPAN courses.

STUDIO ART MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

This general minor in studio art offers students the opportunity to explore creative studio practice in one or multiple areas (e.g., photography, transmedia sculpture, painting and drawing) along with an introduction to art history.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.

2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **two** of the following Studio Art Minor courses:

- FINE 1100 - Drawing I
- FINE 1150 - Introduction to Darkroom Photography
- FINE 1400 - Two Dimensional Design
- FINE 1500 - Three-Dimensional Design
- FINE 2155 - Introduction to Digital Photography
- FINE 2200 - Painting I
- FINE 3500 - Installation Art

Take **six** semester hours of Studio Arts electives.

Take **three** semester hours of upper-division Studio Arts elective.

Take **three** semester hours of Art History elective.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, prerequisite updates and for lists of approved electives and more information about this minor.

SUSTAINABILITY MINOR

Introduction

Please click [here](#) to see Sustainability department information.

The sustainability minor is interdisciplinary, drawing on the expertise across CLAS departments: anthropology, biology, chemistry, communication, economics, environmental sciences, geography, geology, history, economics, philosophy, physics and political science. The core courses are taught by a faculty team who will present sustainability concepts from socio-ecological and systems perspectives.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a total of 18 credit hours chosen from the approved courses below, distributed as follows: two core courses that introduce students to how living things affect and are affected by their environments, a capstone course and three electives chosen from an approved list of CLAS courses.
2. Students must complete a minimum of 12 upper-division (3000-level and above) credit hours in the minor, chosen from the approved courses below.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.5. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Program Restrictions, Allowances and Recommendations

1. Students should consult with the Sustainability advisor before registering for any courses applicable toward the minor. *Graduate-level courses and cross-lists may be used with prior consent from the advisor.

2. Credits counted for another major or minor program can be counted toward the Sustainability Minor with approval from the advisor, though no course may be used to fulfill more than two graduation requirements.

Take **all** of the following Core courses:

- ENVS 1342 - Environment, Society and Sustainability
- SUST 3010 - Sustainability: Past, Present, and Future
- SUST 4960 - Capstone in Sustainability

Take **three** from the following list of pre-approved elective courses:

Anthropology

- ANTH 1302 - Introduction to Archaeology
- ANTH 1303 - Introduction to Biological Anthropology
- ANTH 2102 - Culture and the Human Experience
- ANTH 3006 - Sustainable Development and Equity
- ANTH 3301 - World Prehistory
- ANTH 3210 - Urban Food Systems and Sustainability
- ANTH 3512 - Human Evolution
- ANTH 4030 - Ethnobiology
- ANTH 4060 - Evolutionary Medicine
- ANTH 4070 - Culture of Development and Globalization
- ANTH 4170 - Culture and the Environment
- ANTH 4450 - Development and Conservation: Contemporary Issues
- ANTH 4460 - Development and Conservation: Theory and Practice
- ANTH 4560 - Human Ecology

Architecture

- ARCH 3700 - Special Topics Design (when offered as Green + Sustainable Design)
- ARCH 3700 - Special Topics Design (when offered as Biomimicry)
- ARCH 3700 - Special Topics Design (when offered as Wood Technology)
- ARCH 3703 - International: Design in Context
- ARCH 3705 - Human Centered Design, Innovation and Prototyping

Biology

- BIOL 1550 - Basic Biology: Ecology and the Diversity of Life

- BIOL 3330 - Plant Diversity
- BIOL 3411 - Principles of Ecology
- BIOL 3521 - Vertebrate Biology
- BIOL 3654 - General Microbiology
- BIOL 4154 - Conservation Biology
- BIOL 4335 - Plant Science
- BIOL 4345 - Flora of Colorado
- BIOL 4415 - Microbial Ecology
- BIOL 4416 - Aquatic Ecology
- BIOL 4425 - Biogeography
- BIOL 4450 - Marine Biology

Business

- MGMT 4950 - Special Topics in Management (when offered as Business and Sustainability)
- MKTG 4950 - Special Topics (when offered as Nonprofit and Social Marketing)

Chemistry

- CHEM 1474 - Core Chemistry: Chemistry for Everyday
- CHEM 4700 - Environmental Chemistry

Communication

- COMM 4611 - Rhetoric of Global Food Policy

Economics

- ECON 4530 - Economics of Natural Resources
- ECON 4540 - Environmental Economics
- ECON 4770 - Development Economics

Environmental Sciences

- ENVS 1044 - Introduction to Environmental Sciences
- ENVS 3082 - Energy and the Environment

Geography

- GEOG 1102 - World Regions Global Context
- GEOG 1202 - Introduction to Physical Geography

- GEOG 1602 - Urban Studies and Planning
- GEOG 3232 - Weather and Climate
- GEOG 3412 - Globalization and Regional Development
- GEOG 4010 - Landscape Biogeochemistry
- GEOG 4020 - Earth Environments and Human Impacts
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing
- GEOG 4080 - Introduction to GIS
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4280 - Environmental Hydrology
- GEOG 4301 - Population, Culture, and Resources
- GEOG 4305 - Water Quality and Resources
- GEOG 4335 - Contemporary Environmental Issues
- GEOG 4350 - Environment and Society in the American Past
- GEOG 4420 - The Politics of Nature
- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4640 - Urban Geography: Denver and the U.S.
- GEOG 4720 - Climate Change: Causes, Impacts and Solutions
- GEOL 4030 - Environmental Geology

History

- HIST 3297 - Social History of Asian Americans
- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3350 - Colonial Latin America
- HIST 3360 - Denver History
- HIST 3366 - Nature and Power in American History
- HIST 3396 - History of the American Indian
- HIST 3451 - Introduction to African History
- HIST 3460 - Modern Latin American History
- HIST 3470 - Intro to East Asia: Since 1800
- HIST 3480 - Introduction to European History
- HIST 3606 - Science, Technology, and Society in the Modern World
- HIST 4032 - Globalization in World History Since 1945
- HIST 4217 - Consumer Culture
- HIST 4226 - Capitalism in America
- HIST 4227 - American West

- HIST 4236 - Colorado Mining and Railroads
- HIST 4240 - National Parks History
- HIST 4411 - Modern Mexico
- HIST 4417 - Commodities and Globalization
- HIST 4421 - Modern China
- HIST 4431 - Modern Japan
- HIST 4451 - Southern Africa
- HIST 4461 - The Modern Middle East
- HIST 4503 - Topics in History of Science
- HIST 4504 - Animals in U.S. History

Physics

- PHYS 3082 - Energy and the Environment
- PHYS 4400-4499 - Topics in Scientific Instrumentation and Laboratory
- PHYS 4850 - Physics for Design and Innovation I
- PHYS 4852 - Physics for Design and Innovation II

*Note: PHYS 4850 is a prerequisite for PHYS 4852

Philosophy

- PHIL 3430 - Environmental Ethics

Political Science

- PSCI 3022 - Political Systems of the World
- PSCI 3042 - Introduction to International Relations
- PSCI 3914 - The Urban Citizen
- PSCI 4354 - Environmental Politics
- PSCI 4146 - Indigenous Politics
- PSCI 4216 - International Politics: Human Rights
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4365 - Global Ecological Crises
- PSCI 5217 - Human Rights in Theory and Practice
- PSCI 5276 - Conflicts and Rights in International Law
- PSCI 5468 - Research Methods in Political Science

Public Health

- PBHL 3020 - Introduction to Environmental Health
- PSCI 3034 - Race, Gender, Law and Public Policy

- PSCI 3035 - Political Movements: Race and Gender
- PSCI 3042 - Introduction to International Relations
- PSCI 3914 - The Urban Citizen
- PSCI 4009 - Politics of the Budgetary Process
- PSCI 4014 - Media and Politics
- PSCI 4025 - Local Governance and Globalization
- PSCI 4085 - Comparative Governance: Environment and Society
- PSCI 4144 - Indigenous Political Systems
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI 4226 - The United Nations in World Affairs
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4545 - Immigration Politics
- PSCI 4555 - International Women's Resistance
- PSCI 4645 - Comparative Political Leadership

THEATRE, FILM AND TELEVISION MINOR

Introduction

Please click [here](#) to see general Theatre, Film & Video Production information.

In this minor, students explore theatre, film and television in both studio and lecture formats.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.
3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Theatre, Film and Television Minor courses:

- FITV 1005 - Introduction to Theatre & Arts in the Community
- FITV 1200 - The Culture of Television
- FITV 3550 - World Theatre

Take **one** of the following courses:

- FITV 3200 - Film History 1
- FITV 3300 - Film History 2

Take **twelve** semester hours of Theatre, Film and Television Minor electives, chosen in consultation with a Film & Television faculty advisor.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

TRANSMEDIA SCULPTURE MINOR

Introduction

Please click [here](#) to see general Visual Arts information.

The transmedia sculpture minor provides experiences that span digital practice, traditional metal casting, mold making, woodworking and fabrication processes. Students learn how to use a wide variety of equipment that encompass the breadth of sculpture today, from metal, wood and assembled sculpture, to installation and performance work, to live media and interactive digital work.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- To declare this minor, please see College of Arts & Media Advising and Student Services in Arts Building, 177. Consult the College of Arts & Media at CAM@ucdenver.edu for more information.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students may transfer up to six semester hours of non-CU Denver courses toward a College of Arts & Media minor. All other courses must be taken at CU Denver.
2. A minimum grade of C (2.0) is required for each course applied toward a College of Arts & Media major, minor or certificate requirement. A grade of C- (1.7) or

lower will not fulfill a major, minor or certificate requirement. A grade of P is acceptable for courses in which the only grade available is Pass or Fail.

3. Students may use up to six semester hours to fulfill both major and minor requirements; the remaining semester hours for the minor must be taken in addition to the major requirements.

Take **all** of the following Transmedia Sculpture Minor courses:

- FINE 1500 - Three-Dimensional Design
- FINE 2500 - Bronze Casting
- FINE 2510 - Wood and Metal Sculpture

Take **three** of the following Transmedia Sculpture Minor courses:

- FINE 3500 - Installation Art
- FINE 3510 - Mold Design & Casting
- FINE 3555 - Concepts in Sculpture (Note that the FINE 3555 Concepts in Sculpture course encompasses rotating course topics and can be taken up to four times, each time with a different topic. These topics are as follows: Concepts in Sculpture-Modeling for Manufacture, Social Engagements, Iron Casting, Public and Environmental Art.)
- FINE 4505 - Sculptural Drawing
- FINE 4215 - Interdisciplinary Studio

Take **three** semester hours of Art History elective.

Please contact the College of Arts & Media at CAM@ucdenver.edu for course sequencing, any prerequisite updates and for more information about this minor.

URBAN AND REGIONAL PLANNING MINOR

Introduction

Please click [here](#) to see Geography and Environmental Sciences Department information.

The urban and regional planning minor in the Department of Geography and Environmental Sciences provides non-geography undergraduate students the opportunity to pursue studies in the professional field of planning. Geography majors can pursue the urban studies option, so this minor would not be available to these majors.

Geography and urban and regional planning share a common concern for the spatial configuration of the places that we inhabit and enjoy. In recognition of this close association, there is currently an articulation agreement between the Department of Geography and Environmental Sciences and the College of Architecture and Planning that provides students with a mechanism for acceleration through the Master of Urban and Regional Planning (MURP) degree program, if accepted into that graduate program. Those students completing the requirements for an undergraduate planning minor may also be eligible to pursue an accelerated MURP degree and if interested in this option should work closely with the minor advisor in the selection of coursework. (Please see the Graduate Catalog for more information on this graduate program.)

All core courses are offered on a yearly basis.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 15 GEOG credit hours.
2. Students must complete a minimum of 12 GEOG upper-division (3000- level and above) credit hours in the minor.
3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded

attempts in required and elective courses are calculated in the minor GPA.
Students cannot complete minor or ancillary course requirements as pass/fail.

4. Students must complete a minimum of 9 GEOG credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Although the three core courses may be taken in any order, it is advisable to begin with GEOG 1602, since this course familiarize students with many key concepts used in other classes.
2. All undergraduate students, except geography majors, are eligible for this minor.
3. Students interested in applying for the articulated MURP degree program must achieve a grade of B (3.0) or higher in required courses.

Take **all** of the following required courses:

- GEOG 1602 - Urban Studies and Planning
- GEOG 4640 - Urban Geography: Denver and the U.S.
- GEOG 4680 - Urban Sustainability: Perspectives and Practice

Take **two** of the following courses:

- GEOG 4000/ URPL 5010 - Planning Methods
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4230 - Hazard Mitigation and Vulnerability Assessment
- GEOG 4235 - GIS Applications in the Health Sciences
- GEOG 4400 - Regional Economic Systems
- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4630/ URPL 6550 - Transportation Planning/Policy
- URPL 5000 - Planning History and Theory
- URPL 5050 - Urban Development
- URPL 6300 - Community and Environmental Health Planning
- URPL 6555 - Transportation, Land Use, and the Environment
- URPL 6650 - International Development Planning: Theory and Practice

VICTIMS AND VICTIM SERVICES MINOR

Introduction

Please click [here](#) to see School of Public Affairs information.

The undergraduate minor in Victims and Victim Services provides a detailed, comprehensive, and advanced education in fields related to victims and victim services. This program is designed for students who are employed or plan to work in a field related to victim services.

The CJVS program applies a multi-faceted approach to higher education that:

- Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
- Focuses on specific, yet comprehensive, substantive areas of victims and victim services that students can apply to their current or future careers in the field.

Students completing the CJVS minor will have the knowledge and skills to evaluate, manage, and respond to a variety of situations and issues that professionals in fields related to victims and victim services face. Specifically, they will possess technical, analytic, substantive, and ethical proficiencies that will facilitate their professional interactions and development. They will understand the different environments and contexts in which victim advocates and other professionals in this field and related ones carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Minor

- Please contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Victims and Victim Services minor requires 18 credit hours of coursework.

2. A maximum of 6 transfer credits may be applied to the minor.
3. Students must receive a minimum C- grade in each undergraduate course applied to satisfy the minor requirements.

Take **all** of the following required courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory
- CRJU 3285 - Trauma in the Criminal Justice System
- CRJU 4170 - Victimology

Program Electives

There are two elective categories, Violence Focus and Professional Setting. The Violence Focus elective allows the student to learn about an area of violence in a more in-depth capacity. The Professional Setting elective allows the student to hone skills related to service delivery.

Violence Focus (students **take one** of the following):

- CRJU 3250 - Violence in Society
- CRJU 3280 - Trauma Among Correctional Populations
- CRJU 4140 - Domestic Violence and Crime
- ETST 2115 - Genocide in the 21st Century: Darfur and Beyond
- PSCI 4807 - Political Violence
- SOCY 4460 - Hate Groups and Group Violence
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment.

Professional Setting (students **take one** of the following):

- CRJU 4939 - Internship
- HDFR 4090 - Helping Profession Skills in HDFR
- PUAD 4009 - Human Service Organizations
- PUAD 3110 - Seminar in Nonprofit Management
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment.

WOMEN'S AND GENDER STUDIES MINOR

Introduction

Please click [here](#) to see Women's and Gender Studies department information.

The Women's and Gender Studies Minor gives students the opportunity to explore gender issues in the humanities and social sciences.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

For more information about this minor, contact the Women's and Gender Studies Director, Gillian Silverman, 303-556-4529.

Program Delivery

- This is an on-campus program.

Declaring This Minor

- Please see your advisor.

General Requirements

To earn a degree, students must satisfy all requirements in each of the areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a minimum of 18 WGST-related credit hours.
2. Students must complete a minimum of 12 upper-division (3000-level and above) credit hours in the minor, chosen from the approved courses below.

3. Students must earn a minimum grade of C-(1.7) in all minor courses taken at CU Denver and must achieve a minimum cumulative minor GPA of 2.0. All graded attempts in required and elective courses are calculated in the minor GPA. Students cannot complete minor or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 credit hours with CU Denver faculty chosen from the approved courses below.

Program Restrictions, Allowances and Recommendations

1. All courses for the minor must be approved by a WGST advisor. Students may double count up to six credits being applied to other graduation requirements (major, certificate or general education).
2. Students are strongly urged to take at least one course that focuses on international perspectives on women's and gender issues.
3. Students have the option to complete an internship working in the community around issues related to women and gender. The alternative to this is a WGST capstone course at the 4000 level.
4. Students who major in Sociology and complete the Gender and Society option will automatically earn a Women's and Gender Studies Minor

Take **all** of the following required courses (6 credits):

- WGST 1050 - Introduction to Women's and Gender Studies
- WGST 3939 - Internship (3 credit hours) **or**
- WGST course at the 4000 level

Take **12 credits** of WGST-related courses at the 3000-level or above. Eligible courses include, but are not limited to:

Humanities

- WGST 3020 - Gender, Sexuality and Race in American Popular Culture
- ENGL/ WGST 3450 - Contemporary Women Writers
- ENGL/ WGST 4510 - Whores and Saints: Medieval Women
- FREN 4510/ WGST 4511 - French Women Writers
- HIST/ WGST 3343 - Women & Gender in US History
- HIST/ HIST/ WGST 4230 - Women in the West
- HIST/ WGST 4303 - Sex and Gender in Modern Britain
- HIST/ WGST 4307 - History of Sexuality
- HIST/ WGST 4345 - Gender, Science, and Medicine: 1600 to the Present

- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PHIL/ WGST 4500 - Feminist Philosophy
- PHIL/ WGST 4933 - Philosophy of Eros
- RLST/ WGST 4420 - Goddess Traditions
- RLST/ WGST 4710 - Women and Religion
- SPAN 4340/ WGST 4540 - Race, Class, and Gender in Spanish Golden Age Literature
- WGST/ENGL/ HIST 4306 - Survey of Feminist Thought
- WGST/ENGL/ PHIL 4308 - Contemporary Feminist Thought

Social Sciences

- ANTH 4200 - Gender in Cross-Cultural Perspective
- ANTH 4260 - Human Reproductive Ecology
- COMM 3275 - Family Communication
- COMM 4020 - Feminist Perspectives on Communication
- COMM 4265 - Gender and Communication
- COMM 4268 - Communication and Diversity in U.S. History
- COMM/ WGST 4610 - Communication, Media, and Sex
- ECON 3100 - Economics of Race and Gender
- ECON 3400 - Economics of Sex and Drugs
- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSCI/ WGST 4215 - Women's Rights, Human Rights: Global Perspectives
- PSCI/ WGST 4248 - Gender, Globalization and Development
- PSCI/ WGST 4555 - International Women's Resistance
- PSCI/ WGST 4564 - Gender and Politics
- PSCI/ WGST 4827 - Women and the Law
- PSYC 3235 - Human Sexuality
- PSYC 3405 - Family Psychology
- PSYC 3611 - Psychology of Women
- PSYC 3612 - Domestic Abuse
- SOCY/ WGST 3010 - Sociology of Human Sexuality
- SOCY/ WGST 3080 - Sex and Gender
- SOCY/ WGST 3700 - Sociology of the Family

Dual Degree Programs

4+1 INTERNATIONAL STUDIES BA TO POLITICAL SCIENCE MA

Introduction

The 4+1 accelerated Master's program in Political Science is an expedited program of study that allows students to complete a Bachelor's degree in International Studies and a Master's degree in Political Science in as few as 5 years.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Students will follow the undergraduate curriculum for International Studies and work closely with their faculty advisor to begin taking Political Science graduate level coursework as they complete their undergraduate degree.

They will complete no more than 15 credits as an undergraduate that will apply to both their undergraduate and graduate degrees.

Students should officially declare their intent to complete this program by their junior year and apply to the graduate program during the semester they intend to graduate with their BA.

Application requirements may differ from the traditional 2 year MA, which is why students need to work closely with faculty advisors and the political science graduate program director for more information and to ensure they are following the best track to complete coursework

so that they only have one year after completing the undergraduate degree, to complete the graduate requirements. View the graduate program requirements for Political Science here.

4+1 INTERNATIONAL STUDIES TO MASTERS IN HUMANITIES OR SOCIAL SCIENCES

Introduction

The International Studies BA/MHMSS (Master of Humanities/Master of Social Science Program) in the College of Liberal Arts and Sciences provides an expedited interdisciplinary program of study that allows participating students to complete an interdisciplinary Bachelor degree in International Studies and an interdisciplinary Master degree in Humanities or Social Science through the MHMSS program in five years. INTS students interested in participating apply for either the MH or MSS degree no earlier than their first semester of junior-year standing as an undergraduate. Students may further choose to concentrate in one of the MH or MSS tracks. (For track information, see descriptions of the MH and MSS degree programs in the graduate catalog.) Upon acceptance, students take five graduate-level courses beginning the second semester of their junior year (or its equivalent) and through the whole of their senior year. Because these classes "double count," they fulfill requirements for both the BA major and the Master degree in Humanities or Social Science. Students then continue graduate studies exclusively in the chosen degree plan, either MH or MSS, to complete their master degree by the end of their fifth year in CLAS at CU Denver.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

Admissions Requirements and Process

- Interested students should contact their INTS advisor and the MH or MSS advisor as early as possible to ensure proper planning for the five year degree.
- To qualify, students must have a 3.0 or higher GPA in CLAS. All courses taken at the 4000- and 5000-level must be completed with at least a B or higher.

- Students may apply to the graduate program during the semester in which they will successfully complete their degree, and should have most of their general education and major requirements completed by this time.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

Program Requirements

Students in the 5-year INTS BA/MHMSS Program must satisfy all existing requirements for both an undergraduate degree in CLAS with a major in International Studies and a Master of Humanities or Social Science degree. These requirements can be fulfilled through multiple possible paths through the department's curriculum:

Students must maintain a 3.0 GPA in CLAS course work.

Program Options

BA/MHMSS students may choose to do a general MH or MSS degree or select a track concentration within the degree plan, including Social Justice, Philosophy and Theory, Visual Studies, Women's and Gender Studies, Ethnic Studies, International Studies, Community Health, and Society and Environment.

4+1 PHILOSOPHY TO MASTER OF HUMANITIES

Introduction

Please [click here](#) to see Philosophy department information.

The 4+1 accelerated Master's program in Philosophy is an expedited program of study that allows students to complete a Bachelor's degree in Philosophy and a Master's degree in Humanities in as few as 5 years.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Students will follow the undergraduate curriculum for Philosophy and work closely with their faculty advisor to begin taking Political Science graduate level coursework as they complete their undergraduate degree.

Students will complete no more than 15 credits as an undergraduate that will apply to both their undergraduate and graduate degrees.

Students should officially declare their intent to complete this program by their junior year and apply to the graduate program during the semester in which they intend to complete their BA.

Application requirements may differ from the traditional 2 year MH, which is why students need to work closely with faculty advisors and the political science graduate program director for more information and to ensure they are following the best track to complete coursework so that they only have one year after completing the undergraduate degree, to complete the graduate requirements.

4+1 POLITICAL SCIENCE BA TO MA

Introduction

Please [click here](#) to see Political Science department information.

The 4+1 accelerated Master's program in Political Science is an expedited program of study that allows students to complete a Bachelor's degree in Political Science and a Master's degree in Political Science in as few as 5 years.

Program Delivery

- This is an on-campus program.

Declaring This Program

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here](#) for information about Academic Policies

Students will follow the undergraduate curriculum for Political Science and work closely with their faculty advisor to begin taking Political Science graduate level coursework as they complete their undergraduate degree.

Students will complete no more than 15 credits as an undergraduate that will apply to both their undergraduate and graduate degrees.

Students should officially declare their intent to complete this program by their junior year and apply to the graduate program during their senior year.

Application requirements may differ from the traditional 2 year MA, which is why students need to work closely with faculty advisors and the political science graduate program director for more information and to ensure they are following the best track to complete coursework so that they only have one year after completing the undergraduate degree, to complete the graduate requirements.

4+1 SOCIOLOGY BA TO MA

Introduction

The Combined BA/MA (4+1) program in Sociology provides a coherent, progressive educational experience that prepares students for either immediate entry to a master's level career or continued study in a PhD program. The BA/MA application process is competitive, as the program is designed for highly-qualified students who are capable of an expedited program. Students choose from two options for their Comprehensive Paper that completes the master's degree: either a 6-credit thesis, or a 3-credit applied experience plus a 3-credit paper. The program also offers 3 concentration areas (Crime, Law & Deviance; Health & Society; Family, Social Services & Community) for students seeking specialization in high-demand career areas.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

Students should officially declare their intent to complete this program by their junior year and apply to the graduate program during the semester they intend to graduate with their BA.

Students must earn a minimum grade of C- (1.7) in all undergraduate major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. Students must earn a minimum grade of B(3.0) in all graduate major courses taken at CU Denver and must achieve a minimum cumulative GPA of 3.0. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

Tier 1 Knowledge

Take **all** of the following required undergraduate courses:

- [SOCY 1001 - Understanding the Social World](#)

- SOCY 2001 - Inequalities in Social World
- SOCY 3115 - Quantitative Methods & Analysis
- SOCY 3119 - Qualitative Methods
- SOCY 3140 - Sociological Theory

Take **all** of the following required graduate courses:

SOCY 5000 must be the first graduate course taken (may be taken concurrently with other graduate courses); SOCY 5024 must be taken before SOCY 5183 and SOCY 5193. Students must earn a *B* or better in all graduate core courses.

- SOCY 5000 - Professional Seminar: Sociological Inquiry
- SOCY 5016 - Social Theory
- SOCY 5024 - Seminar: Research Methods I
- SOCY 5183 - Seminar: Quantitative Data Analysis
- SOCY 5193 - Seminar: Qualitative Data Analysis

Tier 2 Knowledge Applied to Substantive Areas

Five elective courses, one of which may be taken at the undergraduate level. Graduate credit requirements are fulfilled only for those courses earning a minimum grade of B-.

Tier 3 Comprehensive Paper

Take one of the following Comprehensive Paper options:

- SOCY 5955 - Master's Thesis **or**
- SOCY 5939 - Internship **or**
- SOCY 5840 - Independent Study: SOCY

and

- SOCY 5964 - Master's Report

Plans of Study

THESIS OPTION REQUIREMENTS

Core course requirements	15 Credits
Four substantive area courses	12 Credits
Master's Thesis	6 Credits
o SOCY 5955 - Master's Thesis	

BA/MA Thesis Option Total: **53 Credits**

APPLIED PROJECT REQUIREMENTS

Core course requirements	15 Credits
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Four substantive area courses	12 Credits
Applied Experience (internship or independent study)	3 Credits
Master's Paper	3 Credits
o SOCY 5939 - Internship	
o SOCY 5840 - Independent Study: SOCY	
o SOCY 5964 - Master's Report	

BA/MA Applied Project Total: **53 Credits**

Substantive Area Requirements (12 credits for both options)

Students can take an unlimited number of sociology graduate (5000-level) seminars to fulfill their 15 elective credits requirement, or a combination of the following:

- o Independent study: maximum 6 semester hours
- o Graduate level courses in other departments: maximum 6 semester hours
- o Internship: maximum 3 semester hours

For further information about the Department of Sociology or the MA program, visit the Sociology website.

5 YEAR BA/BS AND MASTER IN PUBLIC HEALTH

Introduction

Please click [here](#) to see Health and Behavioral Sciences department information.

Please click [here](#) and [here](#) to see the overview of the Public Health undergraduate program.

Please click [here](#) to see the overview of the Masters in Public Health graduate program.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

PBHL Director: Meng Li, Associate Professor

Office: North Classroom 3018

Telephone: 303-315-7150

Fax: 303-556-8501

Email: Meng.Li@ucdenver.edu

ColoradoSPH Contact: Chloe Bennion, Student Affairs and Academic Operations Director

Office: Fitzsimons Building, Room E-3301

Telephone: 303-724-4745

Email: chloe.bennion@cuanschutz.edu

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.
- To be eligible, students must be declared PBHL majors (BA or BS).
- Ideal candidates will have a GPA of 3.5 or higher, and will have completed a minimum of 12 credit hours toward their undergraduate PBHL degree including Introduction to Public Health (PBHL 2001), General Biology I with lab (BIOL 2051/2071) and General Biology II with lab (BIOL 2061/2081), each completed with grades of B+ or higher.
- Complete an application via SOPHAS EXPRESS (NOTE: GREs are not required). Students should apply by the January preferred deadline in their Sophomore or Junior year.
- Upon application, declare a provisional MPH concentration (NOTE: some concentrations may establish additional eligibility criteria).

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. Undergraduate degree requirements follow either the BA ([found here](#)) or BS ([found here](#)).
2. Students in this program will be conferred both degrees (BA or BS, and MPH) simultaneously upon completion of all requirements.

3. Each class must be completed with a grade of C- or higher to count towards the major, and students must maintain a minimum 3.5 GPA in the undergraduate major and MPH courses.
4. The following are exceptions and/or substitutions that are applicable to the BA/BS requirements for students in the BA/BS - MPH program:

Take the following Core course:

- PBHL 2001 - Introduction To Public Health (in lieu of PUBH 6600 requirement for MPH program)

Take **two** graduate-level classes from the following list, which will count toward both degrees:

- PBHL 3020 - Introduction to Environmental Health can be replaced by EHOH 6614
- PBHL 3001 - Introduction to Epidemiology can be replaced by EPID 6630
- PBHL 3030 - Health Policy can be replaced by HSMP 6601
- PBHL 4040 - Social Determinants of Health can be replaced by CBHS 6610

Take the following Quantitative Methods course:

- MATH 5830 - Applied Statistics (in lieu of BIOS 6601 requirement for MPH program, counts towards both degrees)

Additional Notes

1. To facilitate timely completion of the program, students are expected to take 6 credits in each of 2 summers.
2. If students apply late to this program, (including having already completed additional PBHL core requirements), they may not be able to benefit from all of the substitution-based time savings, and therefore may not be able to complete the program in 5 years.

5 YEAR MATHEMATICS BS/APPLIED MATHEMATICS MS

Introduction

This is a unique program where a student can obtain both a BS in Mathematics and MS in Applied Mathematics in five years through a specialized course sequence. The program requires 12 fewer credits than if both degrees were earned separately. They should declare their intent to complete this program to the Graduate Director after completing MATH 1401, 2411, 2421, 3000, 3191, and 4310.

Program Delivery

This is an on-campus program.

Declaring This Major

[Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements for Mathematics BS

1. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
2. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
3. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.
4. Students must declare their intent to complete this program during their junior or senior year, after completing MATH 1401, 2411, 2421, 3000, 3191, and 4310.

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 5779 - Math Clinic or MATH 6330 - Workshop in Statistical Consulting

Take **one** of the following programming requirements:

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **two** approved MATH electives (at least six semester hours) above the 3000 level, excluding 3195, 3511, 3800, 3999, and 4830.

Take **nine** semester hours of MATH numbered 5000 or above excluding MATH 5000-5010, MATH 5012-5015, MATH 017, MATH 5198, MATH 5250 and MATH 5830.

Program Requirements for Applied Mathematics MS

In the semester in which the student intends to complete their BS, students must apply for admission into MS in Applied Mathematics Program.

Students must earn a minimum grade of B- (2.7) in all courses taken at CU Denver and must achieve a minimum cumulative major GPA of 3.0, for all courses that will apply to the MS. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

Students must present 30 hours of course work for the M.S. degree.

At least 24 of these hours must consist of graduate level (numbered 5000 or higher) courses with the MATH prefix.

The remaining 6 hours must be either MATH courses numbered 5000 or above or pre-approved courses outside the department numbered 4000 or above.

Students must complete a written project and pass a final oral exam.

Note that 12 semester hours of MATH courses used for the B.S. portion of the degree apply to the 30 hours of course work below.

Up to 9 semester hours of prior course work may be transferred in (subject to approval); these

must be at the 5000 level or above with a B- or better grade. Courses already applied toward a prior degree (graduate or undergraduate) cannot be used toward the M.S. degree in Statistics. Additionally, the following MATH courses will NOT count toward a graduate degree: MATH 5000-5009, 5010, 5012-5015, 5017, 5198, 5250, and 5830.

Following completion of course work, all students must complete a written project and pass a final oral exam. For students choosing the thesis option, 4 to 6 hours (of the 30 required hours) may be devoted to the writing of a thesis through MATH 5950. According to Graduate School policies, Masters students, whether enrolled full-time or part-time, must complete all degree requirements within 7 years of matriculating into the graduate program.

The following course requirements must be satisfied by all students in the MS in Applied Mathematics Program:

1. (Analysis Core Requirement) One of: MATH 5070 (Applied Analysis) or MATH 6131 (Real Analysis),
2. (Linear Algebra Core Requirement) MATH 5718 (Applied Linear Algebra)
3. Students must complete at least three courses chosen from the following list. Note that MATH 6131 (Real Analysis) can be used to satisfy both the analysis core requirement and may also count as one of the three courses satisfying this requirement.
 - Any MATH course at the 6000 level or above
 - MATH 5135 Functions of a Complex Variable
 - MATH 5310 Probability
 - MATH 5320 Introduction to Mathematical Statistics
 - MATH 5490 Network Flows
 - MATH 5593 Linear Programming
 - Additional course options may be added later at the discretion of the Department of Mathematical and Statistical Sciences, e.g., as new courses are introduced to the graduate program.

Program Requirements

Admissions: Once a student has progressed beyond three semesters of calculus (through multivariate calculus), linear algebra, Introduction to Abstract Mathematics, and Real Analysis I, they may apply for entry into the 5-year BS in Mathematics / MS in Applied Mathematics degree program. A 3.0 grade point average (GPA) is required over all mathematics courses.

To apply, contact the one of the Co-directors for the Graduate Program in order to complete an "Intention to complete 4+1 Bachelor's to Master's Degree form."

Graduate School Policies and Procedures: The following excerpts are from Article II. Section 2.iv. of the Graduate School Policies and Procedures (as approved by Graduate Council

April 3, 2013, and modified by Graduate Council February 2018). Students are not formally admitted to the Graduate School until they have earned their undergraduate degree. Students participating in a Bachelor's/Master's option must:

- fulfill all credit requirements of both the graduate and undergraduate programs
- fill out and submit a declaration of intent to complete this program before enrolling in any graduate level courses, being advised by both undergraduate and graduate advisors; and
- apply and be admitted to the graduate program in the semester (fall or spring) in which they intend to complete their undergraduate degree.

*Here, the graduate program pertains to the Department of Mathematical and Statistical Sciences. Before enrolling in any graduate courses, the student must have been admitted into the 5-year degree program and submitted an "Intention to complete 4+1 Bachelor's to Master's Degree form."

Additional notes for obtaining the B.S. in Mathematics:

1. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
2. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
3. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.
4. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

You must satisfy the requirements of the College of Liberal Arts and Sciences (CLAS) and CU Denver. Contact CLAS advising office for details.

Additionally, students must satisfy the following requirements to obtain the M.S. in Applied Mathematics:

- At least 30 semester hours
- At least 24 hours must be in mathematics and statistics, numbered 5000 or above

At most six hours may be in courses outside the Department of Mathematical & Statistical Sciences at the 4000 level or above, if approved by the student's academic advisor and by the Graduate Committee.

The overall grade point average must be 3.0 or higher. Grades below a B- are not accepted (but they do contribute to the overall GPA).

A maximum of 9 credit hours of coursework may be transferred into the M.S. program. Only courses completed with a grade of B- or better may be considered for transfer credit. Credit cannot be transferred until the student has established a satisfactory record of at least six graduate credits in mathematics or statistics at CU Denver with a minimum GPA of 3.0. All transfer courses must be approved by the Graduate Program Director. Courses taken while registered as a non-degree student are considered transfer courses.

The following courses will not count toward a graduate degree in applied mathematics: MATH 5000-5010, MATH 5012-5015, MATH 5017, MATH 5198, MATH 5250 and MATH 5830.

Additional Notes:

Students will be advised to take Introduction to Real Analysis II (MATH 4320) as an elective for the B.S.

Students must complete either the requirements for the M.S. degree without concentration area or specific coursework requirements in one of the following areas: Applied Probability, Applied Statistics, Discrete Mathematics, Mathematics of Engineering and Science, Numerical Analysis, or Operations Research.

5 YEAR MATHEMATICS BS/STATISTICS MS

Introduction

This is a unique program where a student can obtain both a BS in Mathematics and MS in Statistics in five years through a specialized course sequence. The program requires 12 fewer credits than if both degrees were earned separately.

Program Delivery

This is an on-campus program.

Declaring This Major

[Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements for Mathematics BS

1. Students must complete at least 30 upper-division (3000-level and above) credit hours in the major.
2. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
3. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.
4. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.25. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
5. Students must declare their intent to complete this program during their junior or senior year, after completing MATH 1401, 2411, 2421, 3000, 3191, and 3382.

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 5310 - Probability
- MATH 5320 - Introduction to Mathematical Statistics
- MATH 5387 - Applied Regression Analysis
- MATH 6330 - Workshop in Statistical Consulting

Take **one** of the following programming requirements:

- MATH 1376 - Programming for Data Science **or**
- CSCI 1410 - Fundamentals of Computing **and**
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **two** approved MATH electives (at least six semester hours) above the 3000 level, excluding 3195, 3511, 3800, 3999, and 4830.

Take **two** additional MATH classes (and at least 6 credits) above 3000 excluding 3040, 3195, 3511, 3800, 4012, 4013, 4014, 4015 and 4830.

Program Requirements for Statistics MS

1. In the semester in which the student intends to complete their BS, students must apply for admission into MS in Statistics Program. They should have declared their intent to complete this program to the Director of the Program in Statistics after completing MATH 1401, 2411, 2421, 3000, 3191, and 3382.
2. Students must earn a minimum grade of B- (2.7) in all courses taken at CU Denver and must achieve a minimum cumulative major GPA of 3.0, for all courses that will apply to the MS. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.
3. Students must present 30 hours of course work (which are broken into 4 components as detailed below) for the M.S. degree.
4. At least 24 of these hours must consist of graduate level (numbered 5000 or higher) courses with the MATH prefix.
5. The remaining 6 hours must be either MATH courses numbered 5000 or above or pre-approved courses outside the department numbered 4000 or above.
6. Students must complete a written project and pass a final oral exam.

Note that the MATH 5310, MATH 5320, MATH 5387, and MATH 6330 courses used for the B.S. portion of the degree apply to the 30 hours of course work and satisfy the core requirement discussed below.

Up to 9 semester hours of prior course work may be transferred in (subject to approval); these must be at the 5000 level or above with a B- or better grade. Courses already applied toward a prior degree (graduate or undergraduate) cannot be used toward the M.S. degree in Statistics. Additionally, the following MATH courses will NOT count toward a graduate degree: MATH 5000-5009, 5010, 5012-5015, 5017, 5198, 5250, and 5830.

Following completion of course work, all students must complete a written project and pass a final oral exam. The project is developed as a student-centered independent research component within MATH 5960 unless the student has chosen the thesis option. For students choosing the thesis option, 4 to 6 hours (of the 30 required hours) may be devoted to the writing of a thesis through MATH 5950. According to Graduate School policies, Masters students, whether enrolled full-time or part-time, must complete all degree requirements within 7 years of matriculating into the graduate program.

The MS degree in Statistics consists of 4 components: 1) core courses, 2) statistics electives, 3) other electives, and 4) MATH 5960 (Master's project) or MATH 5950 (Master's thesis).

The **4 core courses** include:

- MATH 5310 - Probability
- MATH 5320 - Introduction to Mathematical Statistics
- MATH 5387 - Applied Regression Analysis
- MATH 6330 - Workshop in Statistical Consulting

and are satisfied during the completion of the B.S. portion of the degree.

Students must take **at least three** additional *statistics electives* courses from the list below:

- MATH 5394 - Experimental Designs
- MATH 5792 - Probabilistic Modeling
- MATH 6101 - Uncertainty Quantification
- MATH 6380 - Stochastic Processes
- MATH 6384 - Spatial and Functional Data Analysis
- MATH 6388 - Statistical and Machine Learning
- MATH 7386 - Monte Carlo Methods
- MATH 7393 - Bayesian Statistics
- MATH 7384 - Mathematical Probability
- MATH 7826 - Topics in Probability and Statistics
- Additional courses given prior approval by the student's advisor and the Director of the Program in Statistics

Students must take **two Other Electives**: Any MATH prefix course that can be used for an M.S. or Ph.D. degree in Applied Mathematics can be used as another Elective. While these courses could be additional statistics-focused courses, the added flexibility allows students to direct their coursework into other areas of mathematics and/or science. The

following courses will not count toward the M.S. in Statistics: MATH 5000-5010, MATH 5012-5015, MATH 5017, MATH 5198, MATH 5250 and MATH 5830.

Students must take **either** MATH 5950 or MATH 5960 as part of completing their written project.

BS/MA 4+1 PROGRAM IN EDUCATION AND HUMAN DEVELOPMENT: HDFR CONCENTRATION

Introduction

Students in the BS/MA 4+1 Program in Education and Human Development: HDFR Concentration will have a pathway to **complete a BS and MA in Learning Development and Family Sciences HDFR in 5 years**. LDFS HDFR students who pursue this BS/MA (4+1) option will likely have opportunities for accelerated opportunities to work and lead in community-based organizations with culturally and diverse families in community and educational settings.

LDFS HDFR undergraduate students may apply into the BS/MA program after completing 60 or more credits. A holistic admission process (following a comprehensive review of all admission materials) will be used including GPA, 2 letters of recommendation, demonstrate leadership experiences and an interview with HDFR faculty. A minimum of an overall cumulative GPA of at least 3.0 and a major GPA of 3.3 or better will be required and they have a faculty mentor who will strongly support his or her application to the program.

Program Delivery

- This is an on-campus program with some online options.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Education and Human Development Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

HDFR students who are granted admission to the BS/MA (4+1) program and effectively subsequently admitted to the LDFS MA: HDFR concentration can substitute two undergraduate 4000 level HDFR major courses (6 credits) for two graduate level HDFR courses (6 credits) approved by HDFR faculty or HDFR advisor.

The content knowledge of the two courses substituted in the undergraduate program is addressed in greater depth and placed in larger scholarly context in the corresponding graduate courses. The student needs to earn a grade of B (3.0) or better in the two corresponding HDFR graduate courses.

Course Requirements for the MA program in Learning, Developmental and Family Sciences: Human Development and Family Relations (HDFR) concentration (30 credits)

- LDFS 6200 - Human Development Over the Life Span (3 Credits)
- RSEM 5120 - Introduction to Research Methods (3 Credits)
- LDFS 5110 - Human Learning (3 Credits)
- HDFR 6000 - Family Theories (3 Credits)
- RSEM 5100 - Basic Statistics (3 Credits)
- HDFR/SEHD Electives: Professional Personalized Master's Electives (Completed at BS and MA level)
- LDFS 6950: Applied Project or Master's Thesis Option (3 Credits)

CHEMISTRY BS/MS

Introduction

Please [click here](#) to see Chemistry department information.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

While students are completing a BS degree in chemistry, they may also complete some of the requirements for an MS degree in chemistry by participating in the BS/MS program using the following guidelines:

- The student must apply and be accepted for participation in the BS/MS program prior to completion of the BS degree in consultation with both the undergraduate and graduate advisors. Students must complete a 4+1 intent form to formally declare this program, as they work very closely with undergraduate and graduate advisors to ensure they are on track and completing requirements as necessary.
- Up to 12 semester hours of graduate-level course work may be taken as an undergraduate and applied toward the MS degree. With prior approval, these courses may also be applied toward the BS Chemistry, BS Biochemistry or ACS certification requirements for the BS Chemistry degree.
- The chemistry department will waive the requirement for placement examinations in each area of chemistry for which the student has completed the undergraduate sequence of courses and laboratories at the Downtown Campus with grades of B (3.0) or better for each course.
- The student must apply for and be admitted to the MS program the semester that they plan to complete the BS Chemistry, BS Biochemistry or ACS certification requirements at the Downtown Campus.

The BS/MS program allows undergraduate students who have begun their research as undergraduates to complete up to 12 semester hours toward the 30 semester hours required for an MS degree in chemistry while they are still completing their BS degree. This makes it possible for students to complete an MS degree in chemistry in only one year beyond the BS degree in chemistry or biochemistry. Students entering the MS program through the BS/MS program option must fulfill all of the requirements of the Plan I or Plan II MS degree programs, which can be found [here](#).

CLAS/PUBLIC ADMINISTRATION, BA/MPA

Introduction

The Pathway BA/MPA degree program offered by the College of Liberal Arts and Sciences and the School of Public Affairs provides students the opportunity to complete both a bachelor's degree and master's degrees in five years rather than the usual six years. The program combines undergraduate general education and major studies with a specialized curriculum in public affairs and strives to develop intellectual and professional skills in a coordinated manner. The five- year BA/MPA program decreases the time and number of semester hours required to earn both degrees by allowing students to count graduate- level courses in the School of Public Affairs toward the bachelor's degree requirements. The program is designed to give students an opportunity to prepare for professional positions and advancement with federal, state or local governments, nonprofits or private sector firms concerned or involved with public affairs. BA/MPA students may choose from any CLAS major and may choose the general MPA or the MPA with a concentration. Students are eligible to receive a bachelor's degree once they have successfully completed 120 semester hours and all CLAS requirements. The BA/MPA will be conferred once the student has completed all requirements of the master of public administration degree, including at least 36 hours of graduate-level course work.

Program Delivery

- Check with the College of Liberal Arts and Sciences (CLAS) regarding the format for the courses in your selected CLAS major. MPA courses in the School of Public Affairs are offered on campus, online and in hybrid formats.

Declaring This Pathway Program

- Please contact CLAS advising for information on how to declare a CLAS major. To learn more about adding the MPA program for the Pathway degree, contact spa.advising@ucdenver.edu.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. BA/MPA students may choose from any CLAS major.
2. BA/MPA students may choose to complete a general MPA or they may add a concentration to the MPA.
3. Students must maintain a 3.5 GPA in CLAS coursework.
4. Students may complete a maximum of 18 semester hours of SPA graduate course work while classified as an undergraduate student.
5. Students must maintain a 3.0 or higher GPA in public affairs coursework.
6. Student must successfully complete the capstone course in a semester AFTER all core courses are completed. Alternatively, a thesis option is available. Interested students should contact their SPA faculty advisor.
7. Students may apply to the program during the semester in which they will successfully complete 90 semester hours, and should have most of their general education and major requirements completed by this time.

Students must fulfill **all** the requirements for graduation for CLAS:

- 30 hours in the core curriculum
- 30-48 hours to satisfy major requirements
- Writing proficiency (1 - 7 hours)
- Mathematics proficiency (0 - 3 hours)
- Level III foreign language (0 - 13 hours)

Note: It is highly recommended that students complete a course in American government, statistics and economics before applying to the MPA program

Students must fulfill **all** the requirements for graduation from SPA:

- Total of 36-39 semester hours in public affairs
- Six core courses (PUAD 5001 - PUAD 5006)
- Five elective courses at the graduate level (5000 and 6000 level courses)
- Nine of the 15 elective semester hours must be PUAD courses
- An internship (3 hours) is required from those who do not have significant work experience in the field.

CRIMINAL JUSTICE, BA/MCJ

Introduction

Please click [here](#) to see School of Public Affairs information.

The Pathway BA/MCJ program is designed to allow students to work concurrently toward the BA in Criminal Justice and the Master of Criminal Justice (MCJ). Graduate credit hours earned while enrolled in the BA/MCJ program can be counted toward both the Bachelor of Arts and Master of Criminal Justice. This program offers high-achieving students the opportunity to complete their undergraduate and graduate degrees in criminal justice in less time than completing both separately. The undergraduate and graduate degrees are conferred upon completion of each of the degree's requirements.

Program Delivery

- Courses are offered on campus, online, and in hybrid formats.

Declaring This Major

- Please contact spa.advising@ucdenver.edu.

Both current CU Denver students and new transfer students are eligible to apply to the Criminal Justice BA/MCJ after meeting the following:

- Currently enrolled in the School of Public Affairs as a criminal justice major
- Completed the University of Colorado Denver's undergraduate core curriculum
- Completed 60 semester credit hours
- Completed the following 12 semester credit hours in criminal justice:
 - CRJU 1000 - Criminology & Criminal Justice: An Overview
 - CRJU 2041 - Criminological Theory,
 - CRJU 3100 - Criminal Justice Research Methods

- CRJU 3150 - Statistics for Criminal Justice
- Transfer criminal justice courses must have been approved and accepted toward the major.
- Minimum 3.0 cumulative GPA
- Minimum 3.5 cumulative GPA in criminal justice courses

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 30 resident credit hours, 21 of which must be in resident coursework.
2. Students must receive a minimum B grade in each required core MCJ course.
3. A minimum of 3.0 GPA overall is required in all graduate-level coursework.
4. Students must successfully complete an MCJ capstone or thesis.
5. Students must fulfill all college and major requirements.
6. Students are eligible to receive the Bachelor of Criminal Justice degree once they have successfully completed 120 credit hours and all CU Denver undergraduate degree requirements.
7. Students must have a full acceptance to the Graduate School and the MCJ program.
8. Students must have a minimum of a 3.0 CU cumulative grade point average in undergraduate criminal justice courses.
9. The MCJ will be conferred once the student has completed all requirements of the Master of Criminal Justice degree.

ECONOMICS BA/MA

Introduction

Please [click here](#) to see Economics department information.

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here](#) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- College of Liberal Arts & Sciences Graduation Requirements
- [Click here](#) for information about Academic Policies

Program Requirements

1. Students must complete a 4+1 intent form to formally declare this program, as they work very closely with undergraduate and graduate advisors to ensure they are on track and completing requirements as necessary.

Course requirements

Undergraduate required courses (30 or 31 credit hours):

- ECON 2012 - Principles of Microeconomics
- ECON 2022 - Principles of Macroeconomics
- ECON 4071 - Intermediate Microeconomic Theory
- ECON 4081 - Intermediate Macroeconomic Theory
- ECON 4811 - Introduction to Econometrics

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 3382 - Statistical Theory (3 hours) **or** ECON 3811 - Statistics with Computer Applications (4 hours)

Undergraduate electives (9 credit hours):

Three undergraduate economics courses and at least 2 of them must be at 4000-level

Graduate courses (18 credit hours):

- ECON 5073 - Microeconomic Theory (3 credits)
- ECON 5083 - Macroeconomic Theory (3 credits)
- ECON 5813 - Econometrics I (3 credits)
- ECON 5823 - Econometrics II (3 credits)
- ECON 6053/6054 - Seminar In Applied Economics¹ (3 credits)
- ECON 6073 - Research Seminar (3 credits)

¹The "Seminar in Applied Economics" (ECON 6053, 6054) are 8-week 1.5 credit modules. After completing 3 credit hours of ECON 6053/6054 as part of the economics core, additional ECON 6053/6054 courses may be counted as electives

Graduate electives (9 credit hours):

Any course numbered 5000 or higher with an ECON prefix.

Total economics/mathematics credit hours = 66 or 67

Total credit hours for the combined degrees = 135

Note: the mathematics courses that students take also fulfill some of CU Denver (up to 8 hours) and CLAS (up to 4 hours) graduation requirements.

Dual credits

Students need to take only three electives at the undergraduate level; the three electives taken at the graduate level are double counted in fulfilling both BA and MA graduation requirements. ECON 5803 (Graduate Mathematical Economics) is waived or can be counted as one graduate-level elective. The total dual credits are 12 hours.

Additional graduation requirements

All other grade and GPA requirements towards the BA and MA degrees (e.g., a C- or better is needed in each undergraduate-level required course and a B- or better is needed in each graduate-level required course). Students are expected to meet all course prerequisites. Students will earn the BA degree in their fourth year upon completing all the requirements for the BA degree. Students are expected to be admitted to the Graduate School in their final two semesters prior to earning the MA degree.

Admission requirements

1. Meet all general admission requirements of the Graduate School
2. Be a current CU Denver Economics major with a GPA of 3.5 or better
3. The following courses must have been completed at CU Denver with a grade of B+ or better: MATH 2411, MATH 2421, ECON 4071, and ECON 4811

4. Students should apply in the semester when requirement 3 is satisfied (typically in the end of the fall semester of their junior year - as in the sample curriculum below)
5. Students who do not meet requirements 2 and 3 may apply, but must submit GRE scores and two letters of recommendation; otherwise both are waived
6. To apply, students should submit a regular application to the MA ECON program here: <https://application.admissions.ucdenver.edu/apply/>. Students who meet the admission requirements are not required to pay the application fee, submit GRE scores, letters of recommendation, or a personal statement. Students must contact the graduate advisor after their application is submitted to have this material waived (brian.duncan@ucdenver.edu)

ECONOMICS BA/MATHEMATICS BS DUAL DEGREE

Introduction

Please click [here](#) to see Economics department information or [here](#) for Mathematical and Statistical Sciences department information.

A solid training in the mathematical and statistical sciences is fundamental to optimally prepare economics students for graduate school. A dual degree in economics and mathematics will substantially increase program quality and career prospects for our students, as well as enhance the reputation of the economics program at CU Denver. Similarly, a solid training in quantitative and qualitative economic principles offers significant benefits to mathematics majors who seek industrial and/or consulting positions.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them

Program Delivery

- This is an on-campus program.

Declaring This Major

- [Click here to go to information about declaring a major.](#)

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- [College of Liberal Arts & Sciences Graduation Requirements](#)
- [Click here for information about Academic Policies](#)

Program Requirements

1. No pass/fail grades may count toward the dual degree.
2. Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative GPA of 2.0 in ECON courses and a cumulative GPA of 2.25 in MATH courses. All graded attempts in required and elective courses are calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

Program Restrictions, Allowances and Recommendations

1. In addition to the CLAS residence requirements, the Economics Department requires that all courses other than Econ 2012 and Econ 2022 require written department approval to be transferred in as satisfying major requirements.
2. Additionally, the Department of Mathematical and Statistical Sciences requires that at least 15 upper-division Mathematics credits must be taken at CU Denver.

Take **all** of the following Economics courses:

- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- ECON 4071 - Intermediate Microeconomic Theory
- ECON 4081 - Intermediate Macroeconomic Theory
- ECON 4811 - Introduction to Econometrics

Take **all** of the following Mathematics courses:

- MATH 1401 - Calculus I
- MATH 2411 - Calculus II

- MATH 2421 - Calculus III
- MATH 3000 - Introduction to Abstract Mathematics
- MATH 3191 - Applied Linear Algebra
- MATH 3200 - Elementary Differential Equations
- MATH 3382 - Statistical Theory
- MATH 4310 - Introduction to Real Analysis I
- MATH 4779 - Math Clinic

Take **one** of the following programming requirements:

- MATH 1376 - Programming for Data Science
- CSCI 1410 - Fundamentals of Computing
- CSCI 1411 - Fundamentals of Computing Laboratory

Take **six** Economics elective courses or **five** Economics elective courses plus one Mathematics elective course:

- Any **six** three semester hour courses (**four** of them must be 4000-level) taken in Economics may satisfy this requirement, other than internships and independent studies (which require the approval of the department chair).
Note: ECON 3801 and ECON 3811 cannot be counted as electives. **And**
- One of the following Mathematics courses can be counted as one Economics elective (it may also be counted as one Mathematics elective):
- MATH 3301 - Introduction to Optimization in Operations Research
- MATH 3302 - Simulation in Operations Research
- MATH 4390 - Game Theory
- MATH 4650 - Numerical Analysis I
- MATH 4733 - Partial Differential Equations
- MATH 4810 - Probability
- MATH 5350 - Mathematical Theory of Interest

Take **four** Mathematics elective courses or **three** Mathematics elective course plus one Economics elective course:

- Students must choose **four** approved MATH electives (at least twelve semester hours) above 3000 level, excluding MATH 3195, 3511, 3800, 3999, and 4830. **And**
- One of the following Economics courses can be counted as one Mathematics elective (and can also be counted as **one** Economics elective):
- ECON 4030 - Data Analysis with SAS
- ECON 4110 - Money and Banking

- ECON 4150 - Economic Forecasting
- ECON 4320 - Financial Economics
- ECON 4430 - Economic Growth
- ECON 4550 - Game Theory and Economic Applications
- ECON 4610 - Labor Economics
- ECON 4740 - Industrial Organization

EDUCATION AND HUMAN DEVELOPMENT BAMA WITH MULTIPLE MA OPTIONS

Introduction

Please click [here](#) to see School of Education & Human Development information.

The EDHD BA to MA program (BAMA) in the School of Education and Human Development allows students to combine their BA in Education and Human Development with an MA suited to their needs. In this degree students can complete both the undergraduate degree and a master's degree in as little as five years.

This program is an uninterrupted enrollment plan that leads to both a bachelor's degree and a master's degree. A student follows a prescribed BA to MA program plan of study, from the EDHD BA and choosing from one of eight MA degree options: Culturally and Linguistically Diverse Education, Literacy Education, STEM Education, Learning, Design and Technology, Learning Developmental and Family Studies, Early Childhood Education, Special Education and Research and Evaluation Methods

Program Delivery

- This is an on-campus program with a variety of delivery options for many courses including face-to-face, hybrid, evening, and online courses.

Declaring This Degree

- Click [here](#) to go to information about declaring a major

General Requirements

To earn this degree, students must satisfy all requirements in the EDHD BA in addition to individual requirements for the chosen MA.

Program Requirements

1. Students must meet all of the requirements of the EDHD BA.
2. Up to nine credits of the EDHD BA will be taken at the master's level and apply to both the BA and the chosen MA.
3. Students will complete an additional 21 credits to finish the MA degree (the BAMA does not apply to added endorsements).
4. Students must select and apply to their chosen MA in their junior year during the professional year application period.
 - The process includes an essay, letters of recommendation and an interview.
 - A 3.0 GPA and good-standing in the program is required for admission.
5. Students interested in the BA to MA program should meet with an undergraduate academic advisor during their junior year. Students apply directly to CU Denver's School of Education & Human Development.
6. Students accepted into the BAMA must maintain a minimum 3.0 cumulative grade point average and receive a B- or better in all coursework.

Tuition and Fees

Graduate level tuition is *less* expensive than undergraduate tuition. Students are assessed tuition at the course level. Financial aid awards will cover graduate courses taken by undergraduate students. We offer a variety of scholarships and grants. For a complete list of financial aid opportunities visit www.ucdenver.edu/education/scholarships.

Degree Confirmation

Students are eligible to receive the BA in Education and Human Development degree once they have successfully completed 126 semester hours and all CU Denver undergraduate degree requirements. The MA will be conferred once the student has completed all requirements for the Master of Arts degree. Students have 7 years from the semester in which the first graduate-level course was taken complete the MA.

Eight Master's Degree Options:

Culturally and Linguistically Diverse Education

For those who are passionate about elevating the status of bilingualism and inclusivity in classrooms and championing the strengths and assets of children who speak and are learning multiple languages, this degree is the perfect option.

Early Childhood Education

This degree is for those who have a passion for working with young children, families and communities during the critically important stage of early childhood. The program prepares highly competent professionals who are leaders and advocates known for embracing the whole child in inclusive, culturally and linguistically diverse settings.

Learning Design & Technology

Students will complete fully online courses that address relevant, emerging learning technology topics such as active and experiential pedagogy, media and maker projects, integration of technology, blended and online learning, open educational resources, digital storytelling, creative instructional materials design, and technology adoption and leadership.

Learning, Developmental and Family Sciences

Through this program, you will be prepared to view culturally and linguistically diverse families from a strengths-based perspective and to serve them in a variety of contexts. Students will learn to facilitate the teaching/learning process and to lead and work in community-based environments.

Literacy Education

Literacy is often understood as a core competency and a gateway to all other learning. With this in mind, this degree provides educators with advanced knowledge and preparation to work with diverse student populations, K-12, as they develop reading, writing and oral language skills.

Research & Evaluation Methods

Our students come from a wide variety of backgrounds, but have the common thread of questioning status quo and striving to explore 'what works' in order to improve our educational system. This program is very practitioner-focused. There is a strong focus on improvement and evaluation of current practices, programs and policies.

Special Education

This degree prepares candidates for a holistic representation and understanding of the students from an academic and behavioral perspective. In the program, you will not only learn ways to accommodate, differentiate and assess materials for students, but you will also understand how to manage a caseload of students. From working with families to teachers to agencies, you will be able to develop skills in collaboration, consultation and transition. As a result, you will be an asset to your building and the families/students you serve.

STEM Education

When you decide to pursue this degree, you will learn practical and valuable knowledge and skills to help you engage your students in exciting STEM content. Our program focuses on understanding students' ideas, creating equitable STEM learning environments, assessing students' needs and providing high-quality instruction.

PUBLIC SERVICE/PUBLIC ADMINISTRATION, BA/MPA

Introduction

The Pathway Bachelor of Arts in Public Service/Master of Public Administration degree allows high-performing students to earn both degrees in an accelerated time frame, saving students both time and money. Students graduating with the Pathways BAPS/MPA degree are prepared for leadership and management roles in public service, including local, state, and federal governmental agencies and in nonprofit and nongovernmental organizations. Both the BAPS and the MPA degrees are offered fully online, providing students with the flexibility to schedule courses around the reality of family and work demands while also engaging both local and fully online students in public service opportunities in their own communities.

The BAPS/MPA degree program offered by the School of Public Affairs allows high-performing students to count 12 credit hours towards both the BAPS and the MPA degrees. Eligible students are those who have completed at least 75 credits with a minimum 3.5 GPA in the BAPS major and a 3.0 overall GPA, completed the undergraduate Core Curriculum, and who meet the other requirements listed below.

Students are eligible to receive the BA in Public Service degree once they have successfully completed 120 semester hours and all CU Denver undergraduate degree requirements. The MPA will be conferred once the student has completed all requirements of the Master of Public Administration degree.

BAPS/MPA Program Matriculation

Students must successfully complete a minimum of 3 semester credit hours of graduate public administration course work each semester following admission to the BAPS/MPA program. A maximum of 12 graduate semester credits can be completed as an undergraduate BAPS/MPA student

Students in the Pathways BA/MPA program may be eligible to complete the MPA level internship only after successfully passing two MPA level courses. The MPA level internship may fulfill both the BAPS and MPA internship requirement. The BAPS level internship will not fulfill the MPA level internship. Students must maintain a minimum 3.0 cumulative grade point average for all course work and a 3.5 grade point average for the BAPS major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements
- CU Denver Core Curriculum
- School of Public Affairs Graduation Requirements
- CU Denver's Undergraduate Academic Policies

Program Requirements

1. Students must complete a total of 141 credit hours
2. 37-38 credit hours in the general education core curriculum
3. 46-48 credit hours in general electives
4. 15 credit hours of undergraduate Public service coursework
5. 45 credit hours of upper-division coursework (3000-level and above)
 - I. Minimum of 30 of resident credit; 21 out of the last 30 hours in resident coursework
 - II. Minimum 36 semester hours of graduate-level coursework (5000-level and above)
6. Students must receive a minimum 3.0 cumulative GPA in undergraduate Public Service coursework
7. Students must be fully admitted into the Master of Public Administration program.
8. Students must receive a minimum of a B- grade in each required core MPA course
9. Students must maintain a 3.0 GPA overall in all graduate-level courses
10. Students must successfully complete the MPA capstone or thesis
11. Students must fulfill all college and major requirements
12. The School of Public Affairs reserves the right to rescind a BAPS/MPA student's admittance to the Pathway program if at any point the student's grade point average fall below the requirements listed above.

Licensure

SECONDARY EDUCATION LICENSURE - CLAS MAJOR PATHWAY

Introduction

Please click [here](#) to see School of Education & Human Development information.

The following secondary undergraduate teacher education pathway at CU Denver are a joint effort between the College of Liberal Arts and Sciences (CLAS) and the School of Education & Human Development (SEHD). Through thesis pathways, students earn a bachelor's degree through CLAS and complete the requirements for teacher licensure through the SEHD.

The table below lists the CLAS bachelor's degrees and associated licensure areas available to CU Denver undergraduate students pursuing secondary education licensure

CLAS Bachelor's Degree	Colorado Teaching License
BA in English, Literature Option	English Language Arts (grades 7-12)
BA in History	Social Studies (grades 7-12)
BA in Political Science	Social Studies (grades 7-12)
BA in Spanish	World Languages - Spanish (grades K-12)
BA in French	World Languages - French (grades K-12)
BA in Individually Structured Major, General Science Option	Science (grades 7-12)
BA in Geography, Environmental Science Education Option	Science (grades 7-12)
BS in Biology	Science (grades 7-12)
BS in Mathematics	Mathematics (grades 7-12)

Please note: Admission into the final year of the SEHD teacher education program, called the Professional Year, is a separate process from admission to the university or admission to CLAS. See the SEHD website for application deadlines.

Program Delivery

- This is an on-campus program with a variety of delivery options for many of our courses including hybrid, evening, weekend, and online courses.

Declaring This Major

- Click [here](#) to go to information about declaring a major

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- [CU Denver General Graduation Requirements](#)
- [CU Denver Core Curriculum](#)
- College of Liberal Arts & Sciences Graduation Requirements
- [School of Education and Human Development Graduation Requirements](#)

Click [here](#) for information about Academic Policies

Program Requirements

1. Students must complete all requirements for their CLAS major.
2. Students must pass the appropriate Praxis Exam prior to beginning their final semester of their Professional Year. It is recommended students complete the exam in the year prior to their Professional Year.
3. Application to the last year of the program, the Professional Year Residency is required. After successfully completing all other Core, CLAS, major, and elective requirements, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)
4. Students must complete and maintain a 3.0 minimum grade point average in Professional Year coursework to complete licensure requirements. Please see an advisor for more information on this requirement.
5. A minimum grade of B- is required for all education licensure courses.
6. Transfer courses must be approved by faculty and/or advisor to apply to the education licensure courses.

Take **all** of the following education courses before beginning the Professional Year (a minimum grade of B- is required in each course):

- EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education
- CLDE 4020 - Responsive Classroom Communities
- EDHD 3930 - Diverse Learners Field Experience & Seminar
- SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms

Take **all** of the following Professional Year courses (a minimum grade of B- is required in each course):

- UEDU 4931 - Internship & Lrng Comm I
- UEDU 4932 - Internship & Lrng Comm II
- UEDU 4933 - Internship & Lrng Comm III
- LCRT 4100 - Secondary Literacy Instruction and Assessment
- UEDU 4040 - Planning for Learning
- **Two** Courses in Content Methods, depending on licensure area (see list below)
- **One** Course for Capstone, depending on licensure area (see list below)

Content Methods Courses by Licensure Area (two required during Professional Year):

English Language Arts:

- LCRT 4200 - Theory and Methods of Teaching Secondary English
- LCRT 4201 - Adolescent Literature

Social Studies:

- UEDU 4464 - Methods of Teaching Social Studies
- UEDU 4465 - Methods of Teaching History

World Languages (choose two courses):

- MLNG 4690 - Methods of Teaching Modern Languages
- CLDE 5030 - Language Development of Multilingual Learners: Advanced
- CLDE 5070 - Linguistic Analysis of English
- CLDE 5140 - Language, Culture & Educational Equity

Science:

- SCED 4400 - Theory and Pedagogy of Science Learning
- SCED 4401 - Inquiry Science Pedagogy and Practices

Mathematics:

- MTED 4300 - Curriculum and Methods for Teaching Mathematics
- MTED 4301 - Assessment and Equity in Mathematics Instruction

Capstone Courses by Licensure Area (one required during Professional Year):

English Language Arts:

- UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed

Social Studies:

- UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed

World Languages:

- UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed

Science:

- STME 4051 - STEM Capstone: Secondary Education

Mathematics:

- STME 4051 - STEM Capstone: Secondary Education

UNDERGRADUATE TEACHER LICENSURE

Undergraduate Teacher Education Program

Please click [here](#) to see School of Education & Human Development information.

There are MANY pathways that CU Denver undergraduates can take to become a licensed teacher in Colorado. The BA major in Education and Human Development (EDHD) is within the School of Education and Human Development (SEHD) and includes licensure in the following areas:

- Early Childhood Education
- Elementary Education
- Special Education Generalist (Ages 5-21)
- English Education (Grades 7-12)
- Mathematics (Grades 7-12)
- Middle School Math (Grades 6-8)
- General Science (Grades 7-12)
- Social Studies (Grades 7-12)

The following licensure areas are available through our T-Prep partnerships with Otero Junior College (OJC) and Trinidad State Junior College (TSJC).

- Elementary Education (OJC, TSJC)
- Early Childhood Education (TSJC)
- General Science (7-12) (OJC)
- Middle School Math (Grades 6-8) (OJC)

In the College of Liberal Arts and Sciences (CLAS) pathway, students major in CLAS and earn their secondary teaching license in the SEHD.

The Education and Human Development major focuses on engaging Colorado's rapidly diversifying student and family population. It combines cutting-edge research with real classroom experiences. You'll learn from innovative faculty members who are locally, nationally and internationally recognized for their research in elementary education. They will provide you with a robust knowledge base and relevant learning experiences in children's thinking, culturally responsive education, and supporting English language learners, as well as technology as it relates to teaching children in grades kindergarten through sixth grade. You'll engage in powerful classroom experiences and benefit from our rich 20-year history of partnerships that are a part of our Professional Development Schools. All of the teacher licensure pathways prepare educators who are culturally affirming and responsive, collaborate closely with families and communities, and have the knowledge and skills to create engaging, relevant, and rigorous classroom communities where all students can learn, achieve and grow.

High Standards and Ongoing Assessment

The coursework and the internship experiences within each program have been created to align with the Colorado Teacher Quality Standards, as well as frameworks for culturally and linguistically responsive instruction and Universal Design for Learning. Students in all programs engage in a common set of learning opportunities and internship assessments. They also engage in Program Level Assessments at different stages of the program. Colorado mandates that all teacher education programs be "performance-based" in order to recommend candidates completing the program for licensure; thus all candidates must demonstrate proficiency in both the university-based coursework and their internships. Students must also pass state content exams prior to their final semester in the program.

Community College Articulation

CU Denver honors the community college articulation agreement in elementary and early childhood education to transfer the 60 designated semester hours from the community college to anyone admitted to the teacher licensure program. Students should make sure they are following the appropriate articulation agreement and should work with their SEHD or CLAS advisor early and often to ensure that all courses are transferred properly.

SEHD and T-PREP Pathways:

The CU Denver bachelor's degree with a major in Education and Human Development is a four-year, 126-credit-hour, interdisciplinary program with multiple licensure tracks. It focuses on engaging Colorado's rapidly diversifying student and family population and combines cutting-edge research with real classroom experiences.

The program is offered in a hybrid format with both in-class and online coursework that support the needs of talented students from all backgrounds, including nontraditional and underrepresented students.

Programs of Study

Additional information about the licensure tracks can be found on the SEHD website.

Clinical Experiences in SEHD and T-PREP Pathways

Teacher candidates in the SEHD pathway work alongside community and P-12 partner educators from freshman to senior year. Students complete a community-based field experience block in their freshman year and school-based field experience blocks in years 2 and 3. Each block is carefully coordinated with 1-2 other teacher education courses and a bi-weekly seminar to provide a fully integrated learning experience between theory and practice. In their final, professional year they are placed in a full year internship within the CU Denver Professional Development School Network comprised of over 20 urban schools across numerous districts in the Denver metro region. Through these internships, teacher education students live the life of a teacher for an entire academic year while enrolled in the program. The internships begin gradually with two days a week early on and increase over time to five days per week by the end of the final semester of the program. University courses are closely integrated with the sequence of clinical internship experiences providing teacher candidates with multiple opportunities to engage in the authentic work of teachers. Teacher candidates co-teach closely with practicing teachers in the school and gradually assume full responsibility for teaching by the end of the program. The schools are located in several Denver metropolitan districts serving large populations of low-income and/or culturally and linguistically diverse students, as well as a sizeable number of students for whom English is a second language and students with special needs. Each school is supported by a team of university and school-based educators who collaboratively support the development of each candidate through weekly coaching feedback and the facilitation of collaborative learning community seminars on-site at the school to integrate theory and practice.

Professional Year Admissions

After successfully completing all other Core, CLAS, major, and elective requirements, all students must apply for admission into the Professional Year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)

Advising

Students in the SEHD have a dedicated team of staff and faculty committed to their success. This includes an academic advisor and teams of faculty who support the different licensure programs.

The SEHD accepts applications from incoming freshmen, current students at CU Denver, transfer students from community colleges or four-year institutions, individuals who are

working as paraprofessionals, assistant teachers or developmental intervention assistants in early childhood centers or elementary schools and people who are interested in working in community-based organizations serving diverse families.

Email education@ucdenver.edu for more information. We encourage students to take advantage of the scholarships and grants that are available in this major.

CLAS Major Pathway:

The secondary undergraduate teacher education route at CU Denver is a joint effort between the College of Liberal Arts and Sciences and the School of Education & Human Development. Through this pathway, students earn a bachelor's degree through the College of Liberal Arts and Sciences and a teaching license through the School of Education & Human Development.

Please note: The admission into the School of Education & Human Development teacher education program for CLAS majors is a separate process from admission to the university or CLAS majors. See the SEHD website for application deadlines.

CLAS Undergraduate Teacher Education Pathways

The table below lists the CLAS bachelor's degrees and associated licensure areas available to CU Denver undergraduate students pursuing secondary education licensure.

CLAS Bachelor's Degree	Colorado Teaching License
BA in English, Literature Option	English Education (grades 7-12)
BA in History	Social Studies (grades 7-12)
BA in Political Science	Social Studies (grades 7-12)
BA in Spanish	World Languages - Spanish (grades K-12)
BA in French	World Languages - French (grades K-12)
BA in Individually Structured Major, General Science Option	General Science (grades 7-12)
BA in Geography, Environmental Science Education Option	General Science (grades 7-12)
BS in Biology	General Science (grades 7-12)
BS in Mathematics	Mathematics (grades 7-12)

Program Structure

The School of Education & Human Development collaborates closely with faculty and administration in the College of Liberal Arts & Sciences to ensure rigorous content preparation

in areas of study aligned to the content knowledge necessary for licensed teachers. Students focus primarily on their major in CLAS during the first three years with the opportunity to engage in four early education courses and a semester-long internship in a partner school. If admitted to the final professional year of teacher education, students will then spend two semesters simultaneously enrolled in teacher education coursework specific to their licensure area and a sequence of year-long internships in one of the program's Professional Development Schools.

Clinical Experiences in CLAS Pathway

CLAS students engage in a full-semester early field experience block, spending one day a week in a metro area partner school in order to gain experience in a diverse classroom working with students with varying cultures, languages, and abilities. This field experience block also includes a coordinated teacher education course and a bi-weekly seminar. In their final, professional year students are placed in a full year internship within the CU Denver Professional Development School Network comprised of over 20 urban schools across numerous districts in the Denver metro region. Through these internships, teacher education students live the life of a teacher for an entire academic year while enrolled in the program. The internships begin gradually with two days a week early on and increase over time to five days per week by the end of the final semester of the program. University courses are closely integrated with the sequence of clinical internship experiences providing teacher candidates with multiple opportunities to engage in the authentic work of teachers. Teacher candidates co-teach closely with practicing teachers in the school and gradually assume full responsibility for teaching by the end of the program. The schools are located in several Denver metropolitan districts serving large populations of low-income and/or culturally and linguistically diverse students, as well as a sizeable number of students for whom English is a second language and students with special needs. Each school is supported by a team of university and school-based educators who collaboratively support the development of each candidate through weekly coaching feedback and the facilitation of collaborative learning community seminars on-site at the school to integrate theory and practice.

Professional Year Admissions

After successfully completing the first 3 years of the program, all students must apply for admission into the professional year. Requirements for admission include a 3.0 GPA, positive letters of recommendation, successful evaluations of earlier clinical experiences, and a successful interview. (Students with a lower GPA may be considered under certain conditions. Please see SEHD website.)

Advising

Undergraduate teacher candidates from CLAS will have a team of individuals who work with them throughout the completion of their bachelor's degree and teacher licensure. The following are the members of the advising team:

College of Liberal Arts and Science (CLAS) Education Advisor

The CLAS advisor will assist you upon entry to the university through graduation. The CLAS advisor will monitor your progress through the core curriculum, pre-licensure curriculum, eligibility requirements for the licensure program and transfer credits.

Major/Faculty Advisor

A major/faculty advisor designated within the academic department works with undergraduate teacher education students pursuing secondary licensure regarding specific requirements within their academic major (i.e., English, history, mathematics, Spanish, French, and political science). See the CLAS advisor for specific names and contact information.

School of Education and Human Development (SEHD) Advisor

During the Professional Year, all CLAS teacher candidates will be supported by an SEHD advisor to ensure licensure completion (Lawrence St. Center Bldg., 701; 303-315-6300). The Advisor in SEHD is also available early on to help with questions about program completion, taking the state content exams and other general questions.

CLAS Pathway Undergraduate Academic Planning Sheets

Developed in collaboration with the academic departments and SEHD teacher education program faculty, advisors will work with the teacher candidates on an academic planning sheet. There is little flexibility in the program course requirements as these requirements meet and exceed the Colorado Department of Education's teacher education professional and content standards.

Programs of Study

Due to the complex nature of state mandated influences on teacher preparation courses and consistently evaluating this program for students, please refer to the most current version of the teacher education program handbook for academic requirements for this program.

Undergraduate Certificate Programs

AMERICAN INDIAN STUDIES CERTIFICATE

Introduction

Please click [here](#) to see Ethnic Studies department information.

A 12-credit online program with opportunities in American Indian related internships.

This certificate is designed to appeal to undergraduate students with a background in any major. The certificate is also targeted to nondegree-seeking professionals. Courses will examine

historical and contemporary tribal experiences. Students will be encouraged to think critically about the stereotypes of American Indians and tribal governments. A certificate in American Indian Studies offers students an enduring intellectual base to understand both the foundations of America and diversity among tribes with different languages, histories, and cultures. The courses provide students the opportunity to encounter theories posited by a rich history of American Indian intellectuals.

Program Delivery

- This is an on-online program.

General Requirements

- [Click here for information about Academic Policies](#)

Certificate Requirements

1. Students must complete a minimum of 12 credit hours from the approved courses below.
2. Students must complete a minimum of 12 upper-division (3000-level and above) credit hours taken from the approved courses.
3. Students must earn a minimum grade of B- (2.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credit hours applying to the certificate with CU Denver faculty.

The Curriculum and Coursework

Required Courses:

- ETST 3036 - American Indian Cultural Images - offered online fall and spring semesters
- ETST 3110 - Indigenous Studies - offered online fall, spring and summer semesters
- ETST /HIST 3396 - History of the American Indian - offered online spring and summer semesters
- ETST 3939 - Internship - offered every semester, contact faculty advisor for placement in the community

Additional information about the undergraduate certificate in American Indian Studies may be obtained from ethnic studies Plaza Building, Suite 102
Phone: 303.315.7207 <https://clas.ucdenver.edu/ethnicstudies/certificates>
Faculty Advisor: Professor Donna Martinez donna.martinez@ucdenver.edu

APPLIED STATISTICS UNDERGRADUATE CERTIFICATE

Coordinator: Joshua French Ph.D.

Telephone: 303-315-1709

E-mail: Joshua.French@ucdenver.edu

Web site: <https://clas.ucdenver.edu/mathematical-and-statistical-sciences/undergraduate-certificate-applied-statistics>

Introduction

Please click [here](#) to see Mathematical and Statistical Sciences department information.

There is a growing need for qualified statistical analysts of the ever-increasing amounts of data collected in business, industry, and government. The Certificate in Applied Statistics program is designed to give students a strong background in statistical methodology and data analysis in preparation for opportunities in the workforce or for graduate studies.

Students will gain competence in such topics as descriptive statistics, estimation, confidence intervals, probability and inferential techniques, simple and multiple regression, analysis of variance, and more advanced topics. Students can focus on a particular application area such as economics, psychology, sociology, geology or environmental science through the choice of an elective course and the data analysis project.

Programs are offered at the undergraduate and graduate level.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

This is an on-campus program.

Declaring This Certificate

- Admission requirements: Completion of calculus 1, 2 and 3 as well as linear algebra, each at a B- or above. Students enrolled in the certificate program will be expected to utilize concepts from calculus and linear algebra without the use of technology, e.g., evaluation of limits, derivatives and integrals.
- The certificate can be declared by contacting the Director of Statistical Programs.

General Requirements

- [Click here](#) for information about Academic Policies.

Certificate Requirements

1. Students must complete a minimum of 13 credits hours.
2. All credits for the certificate must be taken at the upper division level (3000-level and above).
3. Students must earn a minimum grade of B-(2.7) in all major courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Since a certificate is a University of Colorado Denver certification of a student's specialized knowledge in an advanced subject area, all courses in the certificate program are expected to be taken in residency at the University of Colorado Denver.

Program Restrictions, Allowances and Recommendations

1. Students must be enrolled in one course per year to maintain their status in the certificate program.
2. Certificates must be completed within 3 years from matriculation.

Complete four courses and a 1 hour independent study are required as detailed below.

Take one fundamental course in probability:

- MATH 3800 - Probability and Statistics for Engineers
- MATH 4810 - Probability (recommended)

Take the following fundamental course in mathematical statistics:

- MATH 3382 - Statistical Theory

Take the following advanced applications course:

- MATH 4387 - Applied Regression Analysis

Take one elective:

- Any statistics course in the Department of Mathematical and Statistical Sciences at the 4000 level or higher (must be pre-approved by the Certificate Coordinator). MATH 4830 cannot apply toward the certificate.
- ECON 4030 - Data Analysis with SAS
- ECON 4150 - Economic Forecasting
- ECON 4811 - Introduction to Econometrics
- GEOG 4770 - Applied Statistics for the Natural Sciences

Project requirement

An independent data analysis project is required with a report and presentation to demonstrate proficiency with data analysis techniques and a statistical computing software package. Enroll for one hour of MATH 4840, Independent Study, or in an equivalent course pre-approved by the Certificate Coordinator.

BIOCHEMISTRY CERTIFICATE

Introduction

Please click [here](#) to see Chemistry department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with the Chemistry advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

- Students should meet with the Biochemistry major advisor Dr. Vanessa Fishback to file a certificate plan prior to the semester of graduation. The certificate is

available to degree-seeking undergraduates, non-degree seeking students and students pursuing a chemistry minor.

General Requirements

- [Click here for information about Academic Policies](#)

Certificate Requirements

1. Students must complete a minimum of 15 credit hours chosen from the approved courses.
2. Students must complete a minimum of 6 upper-division (3000-level and above) credit hours chosen from the approved courses below.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.7. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credit hours from the approved courses with CU Denver faculty.

Certificate Restrictions, Allowances and Recommendations

1. All courses must be taken within ten years of receipt of the Biochemistry Certificate.
2. Prerequisite courses do not have to be completed at CU Denver. Required courses including electives must be completed in residency at CU Denver. Any residency exemptions need to be approved in writing by the Biochemistry advisor prior to the course(s) being taken at another institution.

Take the following prerequisite courses:

- CHEM 2031 - General Chemistry I **or**
- CHEM 2081 - Honors General Chemistry I

- CHEM 2038 - General Chemistry Laboratory I **or**
- CHEM 2088 - Honors General Chemistry I Laboratory

- CHEM 2061 - General Chemistry II **or**

- CHEM 2091 - Honors General Chemistry II Lecture

- CHEM 2068 - General Chemistry Laboratory II **or**
- CHEM 2098 - Honors General Chemistry II Laboratory

- BIOL 2051 - General Biology I **or**
- BIOL 2095 - Honors General Biology I

- BIOL 2061 - General Biology II **or**
- BIOL 2097 - Honors General Biology II

- BIOL 2071 - General Biology Laboratory I **or**
- BIOL 2096 - Honors General Biology Lab I

- BIOL 2081 - General Biology Laboratory II **or**
- BIOL 2098 - Honors General Biology Lab II

- CHEM 3411 - Organic Chemistry I **or**
- CHEM 3481 - Honors Organic Chemistry I

- CHEM 3418 - Organic Chemistry Lab I **or**
- CHEM 3488 - Honors Organic Chemistry Laboratory I

- CHEM 3421 - Organic Chemistry II **or**
- CHEM 3491 - Honors Organic Chemistry II

- CHEM 3428 - Organic Chemistry Lab II **or**
- CHEM 3498 - Honors Organic Chemistry Laboratory II

Take **one** of the following Biochemistry courses:

- CHEM 3810 - Biochemistry
- CHEM 4810 - General Biochemistry I
- CHEM 5810 - Graduate Biochemistry I

Take **one** of the following Biochemistry courses:

- CHEM 4815 - Structural Biology of Neurodegenerative Diseases
- CHEM 4820 - General Biochemistry II
- CHEM 4825 - Biochemistry of Metabolic Disease
- CHEM 4835 - Biochemistry of Gene Regulation and Cancer
- CHEM 4845 - Molecular Modeling and Drug Design
- CHEM 5830 - Graduate Biochemistry II

Take the following course:

- BIOL 3611 - General Cell Biology

Take **two** of the following Electives courses not already chosen from the Biochemistry list:

- CHEM 3011 - Inorganic Chemistry
- CHEM 3111 - Analytical Chemistry
- CHEM 4121 - Instrumental Analysis
- CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy
- CHEM 4815 - Structural Biology of Neurodegenerative Diseases
- CHEM 4820 - General Biochemistry II
- CHEM 4825 - Biochemistry of Metabolic Disease
- CHEM 4828 - Biochemistry Lab
- CHEM 4835 - Biochemistry of Gene Regulation and Cancer
- CHEM 4845 - Molecular Modeling and Drug Design
- CHEM 5830 - Graduate Biochemistry II
- BIOL 3124 - Introduction to Molecular Biology
- BIOL 3832 - General Genetics
- BIOL 4125 - Molecular Biology Laboratory
- BIOL 3225 - Human Physiology
- BIOL 3763 - Biostatistics
- BIOL 3804 - Developmental Biology
- BIOL 4024 - Introduction to Biotechnology
- BIOL 4064 - Cell Biology of Disease
- BIOL 4165 - Neurobiology
- BIOL 4144 - Medical Microbiology
- BIOL 4068/ BIOL 5068 - The Cell Cycle
- BIOL 4126 - Molecular Genetics

- BIOL 4550 - Cell Signaling

- PHYS 3151 - Biophysics Outlook I **and**
- PHYS 3161 - Biophysics Outlook II

(these two 1-credit courses together fulfill one elective requirement)

- PHYS 3452 - Biophysics of the Cell NM
- PSYC 3832 - Neural Basis of Learning

BIOTECHNOLOGY CERTIFICATE

Introduction

Please click [here](#) to see Integrative Biology department information.

Biotechnology is a rapidly growing field in Colorado and nationally that encompasses many disciplines. Agriculture, biofuels, biomedical biotechnology, pharmaceuticals, microbiology, and medical device development are all well-represented areas of biotechnology in Colorado. The Department of Integrative Biology offers a Certificate program in Biotechnology that allows students to acquire foundational knowledge and specialized skills relevant to these research areas. The certificate is designed to provide a strong background in biochemistry and molecular biology, with an emphasis on applied training via lab work and research experiences. Upon completion of the requirements, students obtain recognition in the form of a Certificate and official designation on their transcript.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

Students may earn the certificate while working on their Bachelors Degree; or, the courses may be taken through non-degree admission. All admissions questions should be directed to the

Registrar's office (303-556-2389). All questions regarding tuition and fees should be directed to the Bursar's office (303-556-2710).

Prerequisites:

Individual courses used to earn the Biotechnology Certificate carry prerequisites that must be met before enrolling.

Students interested in completing the Biotechnology certificate should contact the Department of Integrative Biology. A certificate will be issued and noted on your transcript upon proof of satisfactory completion of the course work. You must contact the Biotechnology Certificate faculty advisor no later than the start of the semester of graduation in order for the certificate recognition to appear on your transcripts.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 18 credits from approved courses.
2. Students must complete a minimum of 18 upper division (3000-level and above) credit hours from approved courses.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. All courses used to satisfy the requirements for the Certificate must be completed at CU Denver.

Program Restrictions, Allowances and Recommendations

1. Individual courses used to earn the Biotechnology Certificate carry prerequisites that must be met before enrolling.
2. All courses used to satisfy the requirements for the Certificate must be completed within a five-year period.

Take **all** of the following courses:

- BIOL 4024 - Introduction to Biotechnology
- BIOL 3124 - Introduction to Molecular Biology

- BIOL 4125 - Molecular Biology Laboratory
- CHEM 4820 - General Biochemistry II **or**
- CHEM 3810 - Biochemistry
- BIOL 3939 - Internship **or**
- BIOL 4880 - Directed Research

Take **one** elective from among those listed below, or a course pre-approved by Biotechnology Certificate faculty advisor:

- BIOL 3612 - Cell Biology Laboratory
- BIOL 3763 - Biostatistics
- BIOL 4055 - Virology
- BIOL 4126 - Molecular Genetics
- BIOL 4144 - Medical Microbiology
- BIOL 4225 - Genomics and Bioinformatics
- BIOL 4622 - Topics in Immunology
- BIOL 4634 - Biology of Cancer
- BIOL 4064 - Cell Biology of Disease
- CHEM 3111 - Analytical Chemistry
- CHEM 4121 - Instrumental Analysis
- CHEM 4828 - Biochemistry Lab
- CHEM 4835 - Biochemistry of Gene Regulation and Cancer

You must contact the Biotechnology Certificate faculty advisor (Dr. Chris Miller) no later than the start of the semester of graduation in order for the certificate recognition to appear on your transcripts.

COMMODITIES CERTIFICATE

Introduction

The Business Schools undergraduate certificates are primarily intended for students currently pursuing a degree in any undergraduate discipline that want to expand their business knowledge to give themselves a leg up when they enter the work force. However, they can also be taken by students with only a high school diploma.

Students can pursue one of our undergraduate certificates, even if they are not CU Denver students. Credit earned as a part of the certificate DOES count towards your undergraduate degree, should you choose to pursue a degree here.

The Business School awards a Certificate (of completion) in Commodities to students completing three finance and commodities courses. Students completing the certificate will have an improved understanding of the complex commodities market. Topics covered include regulation, trading, fundamentals, investing, risk management and ethics on commodity markets. Please contact the Commodities Center for more information.

Program Delivery

This is an on-campus program.

Declaring This Certificate

Please contact the Commodities Center for more information.

CRIMINOLOGY CERTIFICATE

Introduction

Please click [here](#) to see Sociology department information.

Crime and society's responses to it represent core concerns for social scientists, policy makers, civic leaders, community organizations, and citizens across the globe. Criminology is the field of study dedicated to understanding crime as a social phenomenon. Criminologists study the social construction of laws, nature and causes of crime, reactions to the breaking of laws, and the prevention, control and treatment of crime. The Department of Sociology's Criminology Certificate offers an essential foundation for students pursuing careers in criminal justice, victim and community services, criminal law, and non-profit organizations in local and international contexts. The certificate also prepares interested students for law school and graduate programs in sociology and criminology. Students may ultimately use this training to conduct social research on crime, influence public policy, and inform government decisions about crime and law.

Upon successful completion of the certificate, students will:

- Understand the theoretical explanations for the social and behavioral causes of crime and crime reduction
- Possess a fundamental understanding of the criminal-legal and political institutions responsible for crime control and policy
- Be familiar with current trends in criminological thought, research, and activism

- Be able to apply the technical skills of their methodological training to conduct crime analyses and outcomes assessments for programs aimed at crime prevention
- Engage in original research projects involving criminological topics

Program Delivery

- This is an on-campus or online program.

Declaring This Certificate

- Eligibility: While housed in Sociology, criminology is in fact a multidisciplinary field that draws from diverse liberal arts fields, including Psychology, Political Science, Communications, History, Philosophy, among others. Thus, CU Denver undergraduate students in any discipline can enroll in the certificate program. The certificate is also available to non-degree-seeking students who already have earned a BA or BS degree, either at CU Denver or elsewhere.
- Application procedures: Students are encouraged to apply for the Criminology Certificate at any point in their undergraduate studies. To apply, students should print and attach a completed Criminology Certificate Application to an unofficial transcript. These documents should be submitted to the Criminology Certificate Administrator. Once the application is approved, students will be contacted about their acceptance into the program.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses below.
2. Students must earn a minimum grade of C- (1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
3. Students must complete all credits applied to the certificate at CU Denver chosen from the approved courses below. (If students have completed a course required

for the certificate elsewhere, they may add the needed credits in the form of additional elective credits drawn from the approved elective courses.)

4. The certificate will be awarded when the student graduates with the bachelor's degree.

Take the following **required** course:

- SOCY 3490 - Criminology

Take **two** of the following courses:

- SOCY 3115 - Quantitative Methods & Analysis **and**
- SOCY 3119 - Qualitative Methods

OR

2 approved methods courses in the student's major discipline, one on quantitative methods and one on qualitative methods (e.g. PSYC 2090, PSYC 3090, PSCI 3011, PHIL 3440, PHIL 2441, ECON 3801, ECON 3811, GEOG 2080, GEOG 4080). Questions about eligible methods course substitutions should be directed to the criminology certificate administrator.

Take **two** of the following approved elective courses:

- SOCY 2440 - Deviance and Social Control
- SOCY 3040 - Drugs, Alcohol & Society
- SOCY 4340 - Juvenile Delinquency
- SOCY 4460 - Hate Groups and Group Violence
- SOCY 4700 - Sociology of Law
- SOCY 4780 - Violence in Relationships
- ANTH 4090 - Drug Syndemic
- COMM 4040 - Communication, Prisons, and Social Justice [Prerequisite: COMM 2020, or instructor consent]
- COMM 4680 - Mass Media Law And Policy
- ECON 3400 - Economics of Sex and Drugs [Prerequisite: ECON 2022]
- ETST 3704 - Culture, Racism and Alienation
- HIST 3231 - Famous U.S. Trials
- HIST 4308 - Crime, Policing, and Justice in American History
- PHIL 3280 - War and Morality
- PHIL 4260 - Philosophy of Law
- PHIL 4812 - Special Topics in Philosophy
- PSCI 3034 - Race, Gender, Law and Public Policy

- PSCI 4185 - Corruption in the U.S. and Abroad [Prerequisite: PSCI 1001 or 3022]
- PSCI 4427 - Law, Politics and Justice
- PSCI 4807 - Political Violence
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3612 - Domestic Abuse

CULTURAL DIVERSITY STUDIES UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Ethnic Studies department information.

The undergraduate certificate in cultural diversity studies is designed to appeal to undergraduate students with a background in any major. It will allow students to demonstrate to potential employers that they possess the multicultural skills and knowledge necessary to succeed in the workplace. Students will enroll in department courses that focus on the historical context in which race and culture have emerged in the United States.

This certificate is also targeted to non-degree-seeking professionals who seek to acquire multicultural knowledge and the skills necessary to ensure their success in professional environments. Students will be encouraged to think critically about race and race relations. Their expanded understandings of the implications of race and culture in work environments will ensure employers that they offer the highest quality employees opportunities in employment or advancement.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Additional information about the undergraduate certificate in cultural diversity studies may be obtained from ethnic studies department at 303-556-6560 or email: ethnic_studies@ucdenver.edu

Program Delivery

- This is an on-campus program and all courses are available online.

Declaring This Certificate

- Please see your advisor.

General Requirements

- [Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 12 ETST credit hours.
2. Students must complete a minimum of 6 ETST upper division (3000- level and above) credit hours.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all ETST credit hours with CU Denver faculty.

Take the following **required** Cultural Diversity Studies course:

- ETST 2000 - Introduction to Ethnic Studies

Choose **three** Elective courses from any Ethnic Studies Department courses, including the following:

- ETST 2155 - African American History
- ETST 2294 - Race and the Media
- ETST 3254 - Race and Ethnicity in the Inner City
- ETST 3297 - Social History of Asian Americans
- ETST 3396 - History of the American Indian
- ETST 3704 - Culture, Racism and Alienation
- ETST 4558 - Chicano and Latino Politics

There are cross-listed courses in a variety of departments, including history, political science and sociology. Any cross-listed course is acceptable, but the student should register for it under the ETST subject code. A complete listing of department offerings and cross-listed courses can be obtained every semester from the Ethnic Studies Department web page or by calling our office for a copy.

CYBERSECURITY AND SECURE COMPUTING UNDERGRADUATE CERTIFICATE

Undergraduate Certificate in Cybersecurity and Secure Computing

The goal of the undergraduate certificate of Cybersecurity & Secure Computing program is to reduce vulnerability in the national information infrastructure by promoting higher education and research to help prepare cyber defense professionals for careers in both the public and the private sector. The curriculum of this certificate has been created to meet all criteria of NICE (National Initiative for Cybersecurity Education) undergraduate level of certification.

Certificate Objectives

This certificate program focuses on both the technical and analytical aspects of advanced cybersecurity and defense.

Program Objectives:

- Master the fundamental concepts of cybersecurity principles and techniques.
- Learn about potentials for cybersecurity threats and attacks.
- Master cyber-defense tools, methods, and components to secure systems.
- Learn how to take appropriate measures should a system compromise occur.
- Learn principles and practices for secure computing

Learning Outcomes:

- Be able to describe and apply the fundamental concepts of cybersecurity principles and techniques.
- Be able to analyze potential cyber threats and attacks.
- Be able to use cyber defense tools, methods, and components to properly secure systems.
- Be able to effectively and quickly evaluate and mitigate if systems are threatened or compromised.

Certificate Eligibility

Current students in good standing in an undergraduate computer science program (BA or BS), and those completing a minor in computer science are eligible. Applications from other majors

at CU Denver or non-degree students will be evaluated based on their current transcript. The student's application is subject to the approval of the computer science and engineering department chair.

Students planning to pursue a Cybersecurity & Secure Computing Certificate in Computer Science and Engineering should apply as early as possible to facilitate course planning, and no later than census date of the semester prior to graduation with their undergraduate degree.

Process to Attain Certificate Objectives

The following classes need to be taken with a grade of C- or better:

- CSCI 3761 - Introduction to Computer Networks
- CSCI 3453 - Operating System Concepts
- CSCI 4034 - Theoretical Foundations of Computer Science
- CSCI 4741 - Principles of Cybersecurity
- CSCI 4743 - Cyber and Infrastructure Defense

Students must take and pass each course with a grade of C- or better. The Cybersecurity & Secure Computing Certificate requires a minimum cumulative GPA of 2.0.

DATA SCIENCE UNDERGRADUATE CERTIFICATE

Introduction

Coordinator: Adam Spiegler Ph.D.

Telephone: 303-315-1700

E-mail: math.advising@ucdenver.edu

Data scientists will have essential competencies in several areas related to analysis of data. In particular, a data scientist should: have strong programming ability in a language popular in data science (e.g., Python, R, Julia); be able to extract, manipulate, and visualize data; have an understanding of probability and statistics in order to quantify uncertainty; be able to build complex models for finding patterns and explaining data. This certificate should provide students with essential skills for introductory data science.

Program Delivery

This is an on-campus program.

Declaring This Certificate

See the program advisor for an application form.

General Requirements

[Click here](#) for information about Academic Policies.

Program Requirements

1. Students must complete a minimum of 12 credit hours from approved courses.
2. Students must complete a minimum of 6 upper division (3000-level and above) credit hours.
3. Students must earn a minimum grade of C- (1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.25. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete a minimum of 9 upper division level credit hours with CU Denver faculty.

Four courses are required as detailed below.

One Programming Course

In order to ensure adequate programming skills for data science, students should take a course that develops strong programming skills in a programming language popular in data science (e.g., Python, R, Julia). The list of currently approved courses includes:

- MATH 1376 - Programming for Data Science
- MATH 4650 - Numerical Analysis I
- ISMG 4400 - Programming Fundamentals with Python

One Probability or Statistics Course

In order to ensure that students can accurately quantify the likelihood of various outcomes and quantify uncertainty related to estimation and prediction, students should take a course that covers basic probability and statistics. The list of currently approved courses includes:

- MATH 2830 - Introductory Statistics (or equivalent coursework with Undergraduate Committee approval)
- MATH 3382 - Statistical Theory
- MATH 3800 - Probability and Statistics for Engineers

One Data Manipulation and Visualization Course

In order to ensure that students are able to comfortably work with and visualize data, students should take a course developing skills related to obtaining, manipulating, and visualizing data. The currently approved course is:

- MATH 3376 - Data Wrangling & Visualization

One Data Modelling Course

In order to ensure that students are able to build reasonably complex models for explaining or identifying patterns in data, students should take a course that largely focuses on describing the behavior of data (whether synthetic or observed) via tools like simulation, direct model building, association, or a complementary approach. The list of currently approved courses includes:

- MATH 3301 - Introduction to Optimization in Operations Research
- MATH 4387 - Applied Regression Analysis
- MATH 4830 - Applied Statistics

DIGITAL STUDIES CERTIFICATE

Introduction

From social media and mobile phones to the algorithms in self-driving cars, digital and information technologies are everywhere. The Digital Studies Certificate provides students with the opportunity to investigate the relationships between new communication technologies and society and to develop skills creating digital media messages and products.

Social sciences and humanities majors can use this certificate to develop and demonstrate their technical skills, while science and engineering students can use it to build expertise in understanding the social and cultural aspects of new technologies. Students from any CU Denver school or college who earn the Digital Studies Certificate will be able to demonstrate to a wide range of potential employers or graduate schools that they have both technical skills and the ability to critically analyze new media. Students who successfully complete the Digital Studies Certificate will be able to:

- Describe and analyze the relationships between digital media and their cultural, social, political, and ethical contexts
- Use digital media to communicate messages to a variety of audiences
- Use digital media to solve problems in a range of disciplines and situations
- Use digital media and related analytical skills as career-building tools

Program Delivery

- This is a hybrid program, with courses on-campus and online.

Declaring This Certificate

- Eligibility: CU Denver students in any discipline can enroll in the program at any point in their undergraduate studies.
- CLAS's Interdisciplinary Studies program sponsors the certificate, and the CLAS Director of Digital Initiatives will provide advising and administrative management.
- Application Procedures: Students are encouraged to apply for the Digital Studies Certificate at any point in their undergraduate studies. To apply, students should print and complete a Digital Studies Certificate Application and submit it to the CLAS Director of Digital Initiatives.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 12 credits of required courses chosen from the approved courses in each cluster: 1 course (3 credits) from each of the 3 clusters (for a total of 9 credits), plus the remaining 3 credits from any one of the three clusters.
2. Students must complete a minimum of 6 approved credits at the upper-division level taken from the approved courses below. (See below for courses in the three clusters.)
3. Students must earn a minimum grade of B (3.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credits applied to the certificate at CU Denver chosen from the approved courses below.

Program Restriction, Allowances and Recommendations

1. The certificate will be awarded when a student graduates with the bachelor's degree.
2. Co-curricular requirement: Students must attend at least 3 Career Center sessions, which can include events, workshops, or 1-on-1 appointments.

Digital Studies Certificate Course Clusters

- **Theory and Analysis:** Courses in this cluster focus on theorizing, explaining, and describing the relationships between digital, media, and communication technologies and society. They enable students to critically assess and analyze digital media and information, such as understanding the biases in seemingly neutral Google search results or examining how people use Twitter to build social movements
- **Digital Media Production:** Courses in this cluster focus on developing hands-on skills in the use of digital, media, and communication technologies. They provide opportunities for students to develop their skills with a variety of digital tools, such as digital photography, mapping, and social media management.
- **Integration:** Courses in this cluster bring together both understanding and using digital, media, and communication technologies.

Other courses may apply to each cluster with the approval of the Director of Digital Initiatives certificate advisor.

Theory and Analysis Cluster

- ANTH 2400 - Exploring Culture through Social Media
- BUSN 6610 & ISMG 6180 - Information Systems Management and Strategy
- COMM 2030 - Digital Democracy
- COMM 3650 - Media and Society
- COMM 4760 / 5760 - New Media and Society
- ENTP 6022 - Digital Strategy for Entrepreneurs
- GEOG 2080 - Introduction to Mapping and Map Analysis
- ISMG 2050 - Introduction to Business Problem Solving
- ISMG 3000 - Technology In Business
- MUSC 3700 - Music and Entertainment Business in the Digital Age
- PHIL 4920 /5920 - Philosophy of Media and Technology
- INTE 5320 - Games and Learning

Digital Media Production Cluster

- COMM 2071 - Media Writing Skills
- COMM 2081 - New Media Production and Management
- ENGL 3084 - Multimedia Composition
- FINE 1810 - PREDAC: 3D Foundations

- FINE 1820 - PREDAC: Animation Foundations
- FINE 2155 - Introduction to Digital Photography
- FINE 2405 - Introduction to Digital Design
- GEOG 4080 /5080 - Introduction to GIS
- GEOG 4081 /5081 - Cartography and Computer Mapping
- INTE 5340 - Learning with Digital Stories
- INTE 5680 - Producing Media for Learning
- IWKS 2300 /5350 - Computational Foundations of Innovation
- IWKS 3100 /5170 - 3D Design, Computation and Prototyping

Integration Cluster

- COMM 2051 - Introduction to Strategic Communication
- COMM 3660 - Social Media for Social Change
- COMM 4558 /5558 - Digital Health Narratives
- ENGL 4190 - Advanced Topics in Writing & Digital Studies
- ENGL 5165 - Literacy and Technology
- HIST 3260 /5260 - Digital Studies and Strategies
- INTE 5665 - Learning with Social Media and Networking
- INTE 5711 - Creative Designs for Instructional Materials
- IWKS 2100 - Human-Centered Design, Innovation and Prototyping
- IWKS 3180 /5180 - Choose Your Own Adventure
- IWKS 3200 /5200 - Data Science for Innovators
- IWKS 3700 /5700 - Innovation and Society
- PUAD 4003 - Effective Communication for Public Service

ENTREPRENEURSHIP CERTIFICATE

Introduction

The Business Schools undergraduate certificates are primarily intended for students currently pursuing a degree in any undergraduate discipline that want to expand their business knowledge to give themselves a leg up when they enter the workforce. However, they can also be taken by students with only a high school diploma.

Students can pursue one of our undergraduate certificates, even if they are not CU Denver students. Credit earned as a part of the certificate DOES count towards your undergraduate degree, should you choose to pursue a degree here.

The Jake Jobs Center for Entrepreneurship is offering an affordable program in one of the fastest growing business segments in the country-Innovation and Entrepreneurship. All courses are taught by faculty from the Jake Jobs Center for Entrepreneurship at CU Denver. You will find many opportunities including scholarships, mentoring, and networking. You will gain skills that prepare you to start a successful business or become an entrepreneurial asset to an existing company.

Benefits:

- Experiential opportunities
- Cost effective - Scholarships available
- No GPA requirements or prerequisites

Program Delivery

This is an on-campus program.

Declaring This Certificate

For more details about courses and registration, visit the Launchpad Certificate page.

Certificate Requirements

Take **all** of the following required courses:

- ENTP 3299 - Business Model Development & Planning
- ENTP 3200 - Essentials in Entrepreneurship
- ENTP 3230 - Small Business Accounting and Finance

ENVIRONMENTAL STEWARDSHIP OF INDIGENOUS LANDS UNDERGRADUATE CERTIFICATE

Introduction

The Environmental Stewardship of Indigenous Lands (ESIL) certificate is an exciting educational opportunity at the University of Colorado Denver (CU Denver), where Indigenous comprises the terms Native American, American Indian, Alaskan Native, and Hawaiian Native. The ESIL certificate provides a unique training opportunity for students to combine a passion for protecting natural resources with a desire to communicate across diverse cultures and schools of thought. This unique program provides training, internships, and job placement for students interested in environmental issues involving tribal and non-tribal entities.

The certificate is available to current CU Denver undergraduate students, post-baccalaureate students, and transfer students. While the certificate is open to students from all educational backgrounds, ESIL targets students majoring in science, technology, engineering, and mathematics (STEM).

Additionally, the ESIL certificate incorporates professional training through extracurricular activities and internships. The extracurricular activities provide students with culturally-relevant training in topics such as tribal sovereignty, environmental law, transcultural competency, and traditional ecological knowledge (TEK). Both the STEM curriculum and these professional skills are applied during internships in which students practice facilitation as tribal liaisons with partner organizations including Indigenous tribes and government agencies (State and Federal).

These degree requirements are subject to periodic revision by the ESIL certificate advisors. Exceptions and substitutions for individual cases will be made by ESIL advisors only. Students in the ESIL program are required to meet with their assigned advisor before the start of each semester to confirm best plans of study.

The ESIL program is offered at the undergraduate level.

ESIL Academic Advisors

- Dr. David Mays (David.Mays@ucdenver.edu) in the Department of Civil Engineering
- Dr. Rafael Moreno-Sanchez (Rafael.Moreno@ucdenver.edu) in the Department of Geography and Environmental Sciences
- Dr. Timberley Roane (Timberley.Roane@ucdenver.edu) in the Department of Integrative Biology

Program Delivery

This is an on-campus program, with an off-campus internship requirement.

Declaring This Certificate

Admission requirements: Students must officially enroll in the ESIL certificate program following the link at <https://clas.ucdenver.edu/esil/>.

Upon enrollment in the ESIL certificate program, students participate in the ESIL certificate program, complete at least one ESIL internship, and take the ESIL coursework described below. All students are also required to complete any required course prerequisites.

Eligibility: Students in any discipline can enroll in the certificate as long as the certificate course prerequisites have been met.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 32 credit hours of approved courses.
2. Students must complete a minimum of six upper division level (3000-level and above) credits from approved courses.
3. Students must earn a minimum grade of C-(1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate course requirements as pass/fail.
4. Students must complete a minimum of 12 credit hours of approved course with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. For the certificate recognition to appear on the student's transcript, students must meet with an ESIL advisor no later than the start of the semester of graduation.
2. Students must be enrolled in one course per year to maintain active status in the certificate program.
3. Participation is required in ESIL workshops and seminars.
4. ESIL internships are designed to expose students to the professional practice of facilitation and offer important connections and networking opportunities directly with agencies who hire tribal liaisons. Assignment and completion of the internship must be pre-approved by an ESIL advisor. The ESIL certificate requires a written report and presentation to demonstrate proficiency for each internship. The ESIL certificate requires at least one internship through the ESIL program. Biology students may earn academic credit for their internship through BIOL 3939. Geography and Environmental Sciences students may earn academic credit for their internship through GEOG 3939.

5. The ESIL certificate requires the courses listed below. Each course applied to the ESIL certificate may carry prerequisites that must be met prior to course enrollment.

For STEM majors, the course requirements are the following:

Complete all major requirements

and

Complete **one** of the following courses:

- MATH 2830 - Introductory Statistics (note 1)
- GEOG 4080 - Introduction to GIS (note 2)

and

Complete **two** of the following courses:

- COMM 3271 - Communication and Diversity *
- ETST 3036 - American Indian Cultural Images *
- ETST 3110 - Indigenous Studies
- MGMT 4100 - Leveraging Diversity and Inclusion in Business *
- PSCI 3214 - Federal Law and American Indians
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics

*These courses fulfill the core curriculum requirement for cultural diversity.

For non-STEM majors, the following coursework requirements cover the fundamentals of STEM, including science (*i.e.*, chemistry and one other lecture-laboratory sequence), technology (*i.e.*, geographic information systems or GIS), engineering (*i.e.*, environmental engineering), and mathematics (*i.e.*, statistics):

Take **all** of the following courses:

- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I (note 3)
- MATH 2830 - Introductory Statistics (note 1)
- CVEN 3401 - Introduction to Environmental Engineering (note 4)
- GEOG 4080 - Introduction to GIS (note 2)

and

Take **one** additional lecture-laboratory sequence from the following:

- GEOL 1073 - Physical Geology: Surface Processes **and**
- GEOL 1074 - Physical Geology: Surface Processes Laboratory (note 5)

or

- PHYS 2010 - College Physics I **and**
- PHYS 2321 - Intro Experimental Phys Lab I (note 6)

or

- BIOL 2051 - General Biology I **and**
 - BIOL 2071 - General Biology Laboratory I (note 7)
- and**

Complete **two** of the following courses:

- COMM 3271 - Communication and Diversity*
- ETST 3036 - American Indian Cultural Images*
- ETST 3110 - Indigenous Studies
- MGMT 4100 - Leveraging Diversity and Inclusion in Business*
- PSCI 3214 - Federal Law and American Indians
- PSCI 4144 - Indigenous Political Systems
- PSCI 4146 - Indigenous Politics

*These courses fulfill the core curriculum requirement for cultural diversity.

Note 1: Instead of MATH 2830, students may instead take an equivalent statistics course by written approval from their ESIL advisor.

Note 2: Instead of GEOG 4080, students may instead take CVEN 5381 - Introduction to Geographic Information Systems.

Note 3: Instead of CHEM 2031/2038, students may instead take ENGR 1130 - Chemistry for Engineers or CHEM 2081 - Honors General Chemistry I and CHEM-2088 - Honors General Chemistry I Laboratory.

Note 4: Instead of CVEN 3401, students may instead take CVEN 5401 - Introduction to Environmental Engineering.

Note 5: Instead of GEOG 1073/1074, students may instead take CVEN 3718 - Geotechnical Engineering.

Note 6: Instead of PHYS 2010 and PHYS 2321, students may instead take PHYS 2311 - General Physics I: Calculus-Based and PHYS 2321 or PHYS 2351

Note 7: Instead of BIOL 2051/2071, students may instead take BIOL 2095 - Honors General Biology I and BIOL 2096 - Honors General Biology Laboratory I.

FAMILIES AND SOCIAL WELFARE CERTIFICATE

Introduction

Please click [here](#) to see Sociology department information.

Families play a significant part in individuals' lives and society. In sociology, one approach is to view families as a small group, focusing on relational processes like support, socialization, conflict, and intimacy that constitute interactions among family members. Another approach views the family as a major social institution that interacts closely with other institutions including those affecting education, law, healthcare, religion, the economy, criminal justice, and welfare. The family-in its varied and diverse forms-is also key to understanding how inequality is experienced and reproduced in society, as substantial responsibility for caring, nurturing, and raising others is delegated to families. The interplay of these multiple levels-the micro or interpersonal, the meso or institutional, and the macro or structural-also interest sociologists, as individuals influence social structures and institutions, and the latter, in turn, affect family interactions and relationships. This certificate provides students a foundation for understanding the complex role of families and family members at multiple levels, as well as the social systems and organizations responsible for supporting families and individuals. The content and methods courses will prepare students for direct service positions working with individuals and families (e.g., human and social services), or research, policy or advocacy positions addressing family issues (e.g., housing, violence and abuse, parenting, social welfare). Students earning the certificate also will be well-positioned to pursue advanced degrees in social work, public health, counseling, law, sociology, or related disciplines.

Upon successful completion of the certificate, students will:

- Recognize the diversity of family structures within and across cultures
- Understand the theoretical perspectives explaining family behavior and relationships, and those addressing differences in the institution of the family across cultures and over time
- Be familiar with current trends in family structure, and recent research on family functioning and well-being, and how family research informs advocacy and policy work, and social welfare programs
- Be able to apply the technical skills of their methodological training to conduct analyses about families and family life, and outcomes assessments for social welfare programs aimed at helping families
- Engage in original research projects involving family-related issues

Program Delivery

This is an on-campus or online program.

Declaring This Certificate

- Eligibility: While housed in Sociology, the study of families and social welfare is in fact a multidisciplinary field that draws from diverse liberal arts fields, including

Psychology, Political Science, Communications, and History, among others. Thus, CU Denver undergraduate students in any discipline can enroll in the certificate program. The certificate is also available to non-degree-seeking students who already have earned a BA or BS degree, either at CU Denver or elsewhere.

- Application procedures: Students are encouraged to apply for the Families and Social Welfare Certificate at any point in their undergraduate studies. To apply, students should print and attach a completed Families and Social Welfare Certificate Application to an unofficial transcript. These documents should be submitted to the Families and Social Welfare Certificate Administrator. Once the application is approved, students will be contacted about their acceptance into the program.

General Requirements

[Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses below.
2. Students must earn a minimum grade of C- (1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
3. Students must complete all 15 credits applied to the certificate at CU Denver chosen from the approved courses below. (If students have completed a course required for the certificate elsewhere, they may add the needed credits in the form of additional elective credits drawn from the approved elective courses.)
4. The certificate will be awarded when the student graduates with the bachelor's degree.

Take the following **required** course:

- SOCY 3700 - Sociology of the Family

Take **two** of the following courses:

- SOCY 3115 - Quantitative Methods & Analysis
- SOCY 3119 - Qualitative Methods

- **OR**

2 approved methods courses in the student's major discipline, one on quantitative methods and one on qualitative methods (e.g. PSYC 2090, PSYC 3090, PSCI 3011, PHIL 3440, PHIL 2441, ECON 3801, ECON 3811, GEOG 2080, GEOG 4080). Questions about eligible methods course substitutions should be directed to the criminology certificate administrator.

Take **two** of the following approved elective courses:

- SOCY 3010 - Sociology of Human Sexuality
- SOCY 3080 - Sex and Gender
- SOCY 4270 - Social Meanings of Reproduction
- SOCY 4290 - Aging, Society and Social Policy
- SOCY 4640 - Sociology of Childhood and Adolescence
- SOCY 4650 - Sociology of Adulthood and Aging
- SOCY 4780 - Violence in Relationships
- COMM 1041 - Interpersonal Communication
- COMM 3275 - Family Communication
- COMM 4262 - Mediation
- ECON 1010 - Economics of Social Issues
- ECON 3100 - Economics of Race and Gender
- ECON 4210 - Public Finance
- ETST 3125 - Multiracial Families and Communities
- ETST 3230 - African American Family
- HIST 3488 - Tudor-Stuart England
- HIST 4219 - Depression, Affluence and Anxiety: U.S. History, 1929 to the Present
- HIST 4222 - U.S. Society and Thought to 1860
- HIST 4223 - U.S. Society and Thought Since 1860
- HIST 4303 - Sex and Gender in Modern Britain
- HIST 4492 - United States History, 1919-1945
- HIST 4493 - United States History, 1945-1973
- HIST 4494 - Red and Blue America: U.S. History, 1973-Present
- PHIL 3200 - Social and Political Philosophy
- PSCI 4009 - Politics of the Budgetary Process
- PSCI 4024 - State Politics: Focus Colorado
- PSCI 4084 - Local Government and Administration
- PSCI 4085 - Comparative Governance: Environment and Society
- PSYC 3205 - Human Development I: Child Psychology [Prerequisite: PSYC 1000, 1005]

- PSYC 3215 - Human Development II: Adolescence and Adulthood [Prerequisite: PSYC 1000, 1005 or 3205]
- PSYC 3235 - Human Sexuality [Prerequisite: PSYC 1000, 1005]
- PSYC 3405 - Family Psychology [Prerequisite: PSYC 1000, 1005]
- PSYC 4485 - Psychology of Cultural Diversity
- CHIN 1000 - China and the Chinese

FUNDAMENTALS OF BUSINESS ALUMNI CERTIFICATE

Introduction

The AACSB accredited CU Denver Business School provides a business certificate designed to introduce recent graduates from any major to the fundamentals of business and to equip them with the knowledge and skills that complement their major, helping launch their careers.

The business certificate consists of three courses designed for recent college graduates with a bachelor's degree in an area other than business. Emphasis is placed on developing the knowledge and skills that provide a practical business foundation.

Many hiring managers are looking for employees with business skills which may not be acquired in other highly specialized areas of study. The business fundamentals certificate gives you business knowledge and skills that employers want.

Over 300 business partners participate on boards and advisory councils, provide scholarships, advise on curriculum and provide internships and jobs to business school students.

When you are enrolled, you have access to Business School resources including:

- career coaching
- job opportunities
- networking
- paid internships
- job search boot camps
- career fairs

Program Delivery

This is an on-campus program.

Declaring This Certificate

For more information and for assistance declaring this certificate, please contact the Business School at undergrad.advising@ucdenver.edu or 303-315-8100.

GEOGRAPHIC INFORMATION SCIENCE UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

Certificate Advisor: Matt Cross

Email: matthew.cross@ucdenver.edu

The Geographic Information Science (GISci) Certificate in the Department of Geography and Environmental Sciences is designed to provide CU Denver undergraduates and graduates, as well as non-degree seeking students interested in professional development, with proficiency in the application of spatial thinking, geographic information science, and geo-technologies in the social and physical sciences, spanning the natural, built and human environments and emphasizing human-environment interconnections. The GISci Certificate core establishes a broad foundation in spatial technologies and methodologies, including geographic information systems, remote sensing, cartography, spatial extensions to database management systems, and statistics. From this base, students can delve into various specialization areas depending on their interests.

Upon successful completion of the certificate, students will be able to:

- articulate and apply basic theoretical underpinnings of spatial analytical principles, methodologies, and techniques;
- effectively utilize at least three different types of software used for spatial analysis;
- apply geospatial thinking, geographic information science, and geo-technologies appropriately; and
- analyze diverse real-world problems that have a spatial dimension and develop alternative solutions to them.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

- CU Denver undergraduate students in any discipline or major may be admitted to the program.
- Of the four core requirements, only the statistics class has prerequisites, including algebra and introductory calculus. Because of the technical nature of the GIS and remote sensing course work, however, some mathematical experience is desirable prior to beginning the program.
- Students may begin the program in any semester or during the summer by making arrangements with the GISci certificate coordinator, and completing and signing the Application for GISci Certificate. This application is required to be formally registered in the GISci Certificate program, and must be completed no later than the semester prior to the scheduled completion of the certificate.

General Requirements

- [Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 18 GEOG/CVEN credit hours from the approved courses below.
2. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
3. Students must complete all 18 GEOG/CVEN credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. The certificate will be awarded when the student graduates with the bachelor's degree.
2. To obtain the certificate, students must complete five core courses and one elective course from the approved list below, totaling 18 hours.
3. Although the five core courses may be taken in any order, it is advisable to begin with GEOG 2080 - Mapping and Map Analysis followed by GEOG 4080 -

Introduction to GIS, since these courses familiarize students with many key concepts used in the other classes.

4. All core courses are offered on a yearly basis. Any alterations to the program **MUST** be approved by the GISci Coordinator. Any changes to the standard curriculum program must be approved in writing by the GISci Certificate Coordinator and filed with the GISci Certificate Application Form.
5. Because a certificate is a CU Denver certification of a students' specialized knowledge in an advanced subject matter, all courses in a certificate program are expected to be taken in residency at CU Denver. Only in rare circumstances will exceptions be made regarding this policy. Courses taken within the GISci Certificate Program may be used towards one other degree requirement.
6. Please pay attention to prerequisites for specific courses.

Take **all** of the following Geographic Information Science courses:

- GEOG 2080 - Introduction to Mapping and Map Analysis
- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing
- GEOG 4080 - Introduction to GIS
- GEOG 4081 - Cartography and Computer Mapping

Take **one** of the following Electives courses:

- GEOG 4070 - Remote Sensing II: Advanced Remote Sensing
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4090 - Environmental Modeling with Geographic Information Systems
- GEOG 4091 - Open Source Software for Geospatial Applications
- GEOG 4092 - GIS Programming and Automation
- GEOG 4095 - Deploying GIS Functionality on the Web
- GEOG 4235 - GIS Applications in the Health Sciences
- CVEN 5382 - Geospatial Data Development
- CVEN 5385 - GIS Relational Database Systems **or**

an elective approved by the GISci Certificate Coordinator.

Although only one elective is required to complete the Undergraduate GISci Certificate, it is strongly recommended that additional elective courses are taken to broaden the experience and knowledge of the student in GIS analysis and applications. A three-credit hour internship with a geospatial faculty sponsor is highly recommended.

HEALTH AND DEVELOPMENT ECONOMICS UNDERGRADUATE CERTIFICATE

Introduction

There is an increasing need for individuals who understand health related issues and policies, particularly those affecting developing countries, and have the quantitative skills that enable them to analyze and present real-world data to support effective decision-making. The purpose of the Certificate in Health & Development Economics is to provide students with a strong foundation in economic concepts, data analysis, and policy issues pertaining to healthcare and economic development. Students will learn how to use data to develop and evaluate programs and policies using modern statistical methods. The certificate gives students the applied skills and institutional knowledge increasing in demand in the health research sector, enhancing the student's career and professional development. The certificate can also provide a springboard towards pursuing a graduate degree in Health Economics.

These certificate requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their program advisor to confirm the best plans of study before finalizing them.

Admission Requirements

- Be a current CU Denver undergraduate or graduate student in any discipline, or a CU Denver non-degree seeking student with a Bachelor's degree.
- Have a GPA of 2.0 or higher
- Have completed intermediate microeconomics and introduction to econometrics, or equivalent coursework or professional experience.

General Requirements

[Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 12 ECON credit hours.

2. Students must complete a minimum of 12 upper division (3000-level and above) ECON credit hours.
3. Students must earn a minimum grade of C-(1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all certificate credit hours with CU Denver faculty.

Certificate Restrictions, Allowances and Recommendations

1. Students are expected to meet all course prerequisites or have the program director's approval.
2. CU Denver undergraduate students may complete the certificate concurrently with their major and/or minor degree program, counting the credits towards both the certificate and their B.A. or B.S. major/minor degrees. However, courses that have already been counted towards any degree already awarded may not be counted towards the certificate retroactively.
3. Undergraduate students are encouraged to use the certificate program as a bridge to a graduate degree. Qualified students in their senior year may substitute the graduate level ECON 5030 for ECON 4030, Health Economics I (ECON 7661) for Health Economics (ECON 4660), and/or Health Economics II (ECON 7662) for Economic Development (4770). Undergraduate students, non-degree seeking students, and graduate students outside the economics department must meet the prerequisite requirements or **have the graduate advisor's approval** prior to taking any graduate level econ course.
4. No course may be taken more than twice.

Required Courses

- ECON 4030 - Data Analysis with SAS
- ECON 4660 - Health Economics.
- ECON 4770 - Development Economics
- ECON 4812 - Advanced Econometric Methods

Total: 12 Hours

HEALTH COMMUNICATION CERTIFICATE

Introduction

Please click [here](#) to see Communication Department information.

The Undergraduate Certificate in Health Communication (CHC) offers learners the opportunity to acquire and demonstrate expertise in health communication. The certificate program will provide students with a theoretically rich and practically relevant education in how health messages are generated, negotiated, assessed, and understood across a wide range of communication contexts, spanning intrapersonal communication to digital and mass media.

The Undergraduate Certificate in Health Communication serves as a gateway for internships and careers related to health, wellness, and medicine, and further the Communication Department's mission to guide students toward developing the skills, knowledge, and abilities necessary to use communication to create a more civil and humane world.

Beginning in the Fall of 2019, the CHC requires students to complete 15 semester hours (five courses) in a structured manner.

These requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus and online program.

Declaring This Certificate

- Students should apply for the Undergraduate Certificate in Health Communication *after* the completion of the required courses.
- To apply, students must complete the certificate application (see the Communication Department website) and return it to Dr. Tamara Powell in room 3311 of the Student Commons Building, or mail to Department of Communication;
P.O. Box 173364, Campus Box 176; University of Colorado Denver;
Denver, CO 80217-3364. The approved certificate is mailed to the student after final grades are posted for the semester.

- Students who are not already enrolled at CU Denver must also complete an Application for Non-Degree Admission prior to registering for courses. The form should be returned to the Office of Admissions.

Additional information about the undergraduate certificate in Health Communication may be obtained from Dr. Tamara Powell, Student Commons Building 3311, 303-315-0310, or tamara.powell@ucdenver.edu.

General Requirements

- [Click here for information about Academic Policies](#)

Certificate Requirements

1. Students must complete a minimum of 15 credit hours from approved courses.
2. Students must complete a minimum of 12 upper division (3000-level and above) credit hours from approved courses.
3. Students must earn a minimum grade of B (3.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credit hours for the certificate with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Courses may not count for more than two graduation requirements.

Required Courses

To build on a shared set of foundational theories, norms, and skills, all CHC-seeking students take three required courses (9 units) in Communication:

- COMM 2500 - Introduction to Health Communication
- COMM 4500 - Health Communication
- COMM 4575 - Designing Health Messages

Interdisciplinary Health Electives

CHC-seeking students will then broaden their perspective on health communication by taking an interdisciplinary health elective. Students must complete at least one elective (3 units) from the following courses:

- ANTH 4600 - Medical Anthropology
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4558 - Digital Health Narratives
- COMM 4620 - Health Risk Communication
- ENGL 4290 - Rhetoric and the Body
- ENGL 4745 - Humanistic Writing About Medicine and Biology
- ETST 3002 - Ethnicity, Health and Social Justice
- GEOG 3501 - Geography of Health
- PBHL 4040 - Social Determinants of Health
- PBHL 3030 - Health Policy
- PBHL 3041 - Health, Culture and Society
- PBHL 3070 - Perspectives in Global Health
- PHIL 4242 - Bioethics
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- SOCY 3440 - Medical Sociology
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- SOCY 4050 - Health Disparities
- SOCY 4110 - Sociology of Health Care
- SOCY 4220 - Population Change and Analysis
- SOCY 4270 - Social Meanings of Reproduction
- Another elective with a health communication focus may be approved for the CHC in consultation with certificate advisor

Required Capstone Project

CHC-seeking students will complete their certificate by undertaking a semester-long capstone project (3 units) using experiential learning or high impact practice. Students have the choice of taking:

- COMM 3660 - Social Media for Social Change
- COMM 3939 - Internship
- COMM 4051 - Advanced Strategic Communication
- COMM 4525 - Health Communication and Communities (Service Learning)
- COMM 4558 - Digital Health Narratives (Service Learning)

- COMM 4550 - Rhetorics of Medicine & Health (Writing Intensive)
- COMM 4620 - Health Risk Communication (Writing Intensive)
- Discipline-specific health methods class approved by certificate advisor

IMMIGRATION STUDIES

Introduction

Issues of immigration are at the center of modern policy and political debates and are thus a core concern for social scientists, policy makers, civic leaders, community organizations, and citizens. The objective of the History Department's Undergraduate Immigration Studies Certificate is to offer both traditional academic training through coursework and research and also practical experience working with immigrant and refugee communities through an internship. The Immigration Studies Certificate will ultimately prepare students to conduct immigration research, influence immigration public policy, and inform immigrant-related government decisions.

Upon successful completion of the certificate, students will:

- Understand the theoretical explanations for immigration flows, immigrant assimilation and exclusion, and ethnic formation
- Possess a fundamental understanding of the legal and political institutions responsible for immigration policy
- Be familiar with current trends in immigration studies thought, research, and activism
- Be able to apply the content and methodological skills to engage in original research projects involving immigration topics
- Be able to apply the theories and examples from coursework to conduct immigration-focused internships in the workforce

Program Delivery

- This is an on-campus program.

Declaring This Certificate

- Eligibility: While housed in the History Department, Immigration Studies is a multidisciplinary field that draws from Ethnic Studies, Anthropology, Political Science, Education, and Sociology. Thus, CU Denver undergraduate students in any discipline can enroll in the program.
- Application Procedures: Students are encouraged to apply for the Immigration Studies Certificate at any point in their undergraduate studies. To apply, students should print and attach a completed Immigration Studies Certificate Application to an official transcript. These

documents should be submitted to the Immigration Studies Certificate Administrator. Once the application is approved, students will be contacted about their acceptance into the program.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 12 credit hours from the approved courses.
2. Students must complete a minimum of 6 upper division (3000-level and above) credit hours from the approved courses.
3. Students must earn a minimum grade of C- (1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all certificate credit hours with CU Denver faculty.
5. The certificate will be awarded when the student graduates with the bachelor's degree.

Take **both** of the following required courses:

- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3939 - Internship (Students must take HIST 3345 **prior** to enrolling in HIST 3939. For HIST 3939, students will work with the Immigration Studies Certificate Administrator and the Experiential Learning Center to secure an immigration- or refugee-related Internship.)

Take **two** related electives from the following approved courses:

- ANTH 4300 - Migrant Health
- ANTH 4350 - Anthropology of Globalization
- EDFN 3000 - Undocumented Mexican Immigration
- ETST 3108 - Chicano/a and Latino/a History
- ETST 3297 - Social History of Asian Americans
- ETST 3697 - Contemporary Asian American Experience
- ETST 3704 - Culture, Racism and Alienation
- HIST 4412 - Mexico and the United States: People and Politics on the Border
- PSCI 4545 - Immigration Politics

If departments offer additional courses that fit within the themes of the Immigration Studies Certificate, those courses can be counted for credit with the Immigration Certificate Administrator's approval.

LABOR LEADERSHIP UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Political Science department information.

The Labor Leadership certificate is meant to develop the next generation of leaders in labor unions and civic organizations focused on labor and related issues of race, class and gender equity. The certificate is particularly relevant to labor union leaders, rank and file members, and community-based organizational staff who desire to receive continuing education regarding labor leadership. The labor leadership certificate will combine academic instruction with field learning and community-based research projects. The program features active partnerships with local labor organizations, such as unions and community-based groups focused on relevant labor, class and race issues (such as immigrant rights groups, workplace gender equity groups, etc.). Certificate students will enhance synergetic learning in the classroom, and enlarge networking opportunities among all students.

Program Delivery

The certificate can be earned either through our traditional on-campus courses, or entirely through classes offered in a weekend-intensive format in our New Directions program. Students may take classes in either format desired.

Declaring This Certificate

Any undergraduate admitted to CU Denver in a degree-seeking or non-degree seeking program may pursue this certificate.

To declare this certificate, students must meet with the Political Science Department advising faculty.

General Requirements

Click [here](#) for information about Academic Policies.

Program Requirements

1. Students must complete 12 credit hours from the approved courses.
2. Students must complete 6 credit hours of upper division (3000 or 4000 level) level courses.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. All courses in this certificate must be taken in residency at CU Denver.

Complete four of the following courses-substitutions may be approved by the program advisor:

- PSCI 4914 - Community Organizing and Community Development
- PSCI 4326 - Advanced International Political Economy: Globalization
- PSCI 4535 - Labor and Working Class Politics
- PSCI 5424 - The Social Economy and Sustainable Development
- PSCI 5434 - The Cooperative Movement: Politics and Policy
- PSCI 5548 - Labor Law and Collective Bargaining
- PSCI 5550 - Labor, Trade Unions and the Global Economy

LAW ENFORCEMENT CERTIFICATE

Introduction

Please click [here](#) to see School of Public Affairs information.

The undergraduate certificate in Law Enforcement provides a detailed, comprehensive, and advanced education in the field of law enforcement. This program is designed for students who are employed or will work in the field of law enforcement.

The CJLE program applies a multi-faceted approach to higher education that:

1. Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
2. Focuses on specific, yet comprehensive, substantive areas of law enforcement that students can apply to their current or future careers in the field.

Students completing the CJLE certificate program will have the knowledge and skills to evaluate and respond to a variety of situations in law enforcement professions that require technical, analytic, substantive, and ethical decision-making. They will understand the different environments and contexts in which law enforcement carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Certificate

- Please contact spa.advising@ucdenver.edu

General Requirements

- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Law enforcement Certificate requires 18 credit hours of coursework.
2. A maximum of 6 transfer credits may be applied to the certificate.
3. Students must receive a minimum C- grade in each course applied to satisfy the certificate requirements.

Take **all** of the following required courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory
- CRJU 4043 - Law Enforcement
- CRJU 4540 - Evidence-Based Approaches in Law Enforcement

Program Electives:

There are two elective categories, Topic Area and Professional Setting. The Topic Area electives allows the student to explore a different aspect of law enforcement. The Professional Skills elective allows the student to hone skills related to law enforcement.

Topic Area (Students take **one** of the following):

- CRJU 3310 - Contemporary Issues in Law Enforcement
- CRJU 3320 - Police-Community Relations
- CRJU 3520 - Juvenile Justice

- CRJU 3530 - Juvenile Delinquency
- CRJU 4410 - Criminal Law and Constitutional Procedures
- CRJU 4430 - Law and Society
- CRJU 4450 - Homeland Security
- PSCI 4427 - Law, Politics and Justice
- SOCY 4340 - Juvenile Delinquency
- SOCY 4700 - Sociology of Law

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable

Professional Skills (students take one of the following)

- ANTH 3550 - Forensic Anthropology
- CRJU 4310 - Leadership Roles in Criminal Justice
- CSCI 1001 - Computer Forensics I
- GEOG 4080 - Introduction to GIS
- CRJU 4939 - Internship (only for Certificate or Minor and must be related to Law Enforcement and be pre-approved)

Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable

MEDIATION UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Communication department information.

Mediation is a process in which conflict parties attempt to manage their differences with the assistance of a neutral third-party. The Certificate in Mediation is designed to provide intensive and in-depth training in mediation and communication skill competencies. Trained mediators are impartial process experts who utilize communication and conflict philosophy and theories to increase the probability of more favorable outcomes between parties in conflict. The

undergraduate certificate is designed for communication majors or any student interested in developing practical skills in alternative dispute resolution. The courses in this certificate focus on alternative dispute processes that include strategies for managing conflict in personal, public, legal, political, governmental, and corporate contexts. These certificate requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them. Please check spacing here and throughout.

Program Delivery

- This is an on-campus or online program.

Declaring This Certificate

- Students should apply for the Undergraduate Certificate in Mediation after the completion of the required courses.
- To apply, students must complete the certificate application (see the Communication Department website) and return it to Dr. Larry Erbert in room 3008 of the Student Commons Building, or mail to Department of Communication; P.O. Box 173364, Campus Box 176; University of Colorado Denver; Denver, CO 80217-3364. The approved certificate is mailed to the student after final grades are posted for the semester.
- Students who are not already enrolled at CU Denver must complete an Application for Non-Degree Admission prior to registering for courses. The form should be returned to the Office of Admissions.

Additional information about the Undergraduate Certificate in Mediation may be obtained from Dr. Larry Erbert, Department of Communication, 303-315-1918, Larry.Erbert@ucdenver.edu.

General Requirements

- [Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 12 credit hours from approved courses.
2. Students must complete a minimum of 9 upper division (3000-level and above) credit hours from approved courses.

3. Students must earn a minimum grade of B (3.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credit hours for the certificate with CU Denver faculty.

Take the following core course:

- COMM 4262 - Mediation

Take **at least one** of the following two courses (students who take both classes take one elective rather than two; students who take only one must select two electives):

- COMM 4255 - Negotiations and Bargaining
- COMM 4260 - Communication and Conflict

Take **one or two** of the following Elective courses:

- COMM 3271 - Communication and Diversity
- COMM 4240 - Organizational Communication
- COMM 4282 - Environmental Communication

MIDDLE EASTERN POLITICS UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Political Science department information.

The Middle East features often in statements made by politicians, and stories from the region are a constant staple of the media. However, the region is still considered by many to be a "mystery." This perception is in part a result of the misrepresentation of the region and its peoples, in addition to the incessant regional political developments, especially during the current decade. The purpose of this certificate is to provide students with a deeper understanding of the politics of the region that goes beyond stereotypes disseminated by the media and manipulated by political and interest groups. It will introduce students to current research and practice concerning the complex interplay among the different peoples and the states of the Middle East, as well as the interaction between the region and the rest of the world. While the certificate will be issued and managed by the Political Science department, students can take courses from other departments and programs, for instance Geography, History, Modern Languages, Religious Studies and Women and Gender Studies. Such an interdisciplinary approach will expose students to a variety of perspectives on the study of the

Middle East. It will also train students to investigate the interconnections among the different aspects of politics in the region.

Program Delivery

The certificate can be earned either through our traditional on-campus courses, or entirely through classes offered in a weekend-intensive format in our New Directions program. Students may take classes in either format desired.

Declaring This Certificate

Any undergraduate admitted to CU Denver in a degree-seeking or non-degree seeking program may pursue this certificate.

To declare this certificate, students must meet with the Political Science Department advising faculty.

General Requirements

- [Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses.
2. Students must complete all courses at the upper-division level (3000 or 4000 level). With the exception ARAB 2120 (Intermediate Arabic 2).
3. All of the credit hours for this certificate must be earned at the CU Denver.
4. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.

Program Restriction, Allowances and Recommendations

1. Only one course can be an independent study, which must be approved by Political Science Department as the certificate advisor.
2. Students must complete at least three Political Science courses in the certificate.

Complete **one** introductory course:

- PSCI 4736 - The Middle East in World Affairs

- PSCI 4002 - Topics in Political Science (any PSCI section with Middle East as part of the subtitle)

Complete **three** elective courses:

- ARAB 2120 - Intermediate Arabic II
- GEOG 3150 - Middle East
- HIST 4461 - The Modern Middle East
- HIST 4462 - Islam in Modern History
- PSCI 4155 - Political Systems of the Middle East and North Africa
- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4165 - Islamic Politics and Culture
- RLST 3120 - Islamic Traditions
- RLST 3100 - Islamic Politics and Culture
- Relevant Independent Study in any Department, if approved by Political Science Faculty Certificate Advisor.

Complete **one** capstone course:

- PSCI 4156 - The Arab-Israeli Peace Process
- PSCI 4150/ WGST 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism

NONPROFIT MANAGEMENT CERTIFICATE

Introduction

Please click [here](#) to see School of Public Affairs information.

The undergraduate Certificate in Nonprofit Management is designed to appeal to students with a background in any major, or non-degree students, who are interested in working in the nonprofit sector. Completion of the coursework requirements of the certificate and associated extracurricular field experiences allow the student to earn the additional credential of Certified Nonprofit Professional pursuant to standards and competencies set by the National Leadership Alliance.

The certificate is designed to allow students to demonstrate to potential employers that they have the knowledge and skills necessary to succeed in the nonprofit workplace. Competencies covered by the certificate include foundations and management of the nonprofit sector,

cultural competence and diversity, and financial resource development, among others. In addition, students have the opportunity to gain real-world experience and connections through nonprofit internships and field experiences.

Additional information about the undergraduate Certificate in Nonprofit Management may be obtained by contacting spa.advisingbaps@ucdenver.edu.

Program Delivery

- All courses are offered online; certain courses are also offered on campus.

Declaring This Certificate

- Please contact spa.advising@ucdenver.edu.

General Requirements

- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The undergraduate certificate in Nonprofit Management requires 18 credit hours of coursework.
2. All credit hours for the certificate must be completed at CU Denver. Transfer credits are not accepted.
3. Students must earn a minimum C- grade in each undergraduate course applied to satisfy the certificate requirements.

Take **all** of the following required courses:

- PUAD 3110 - Seminar in Nonprofit Management
- PUAD 4140 - Nonprofit Financial Management

Choose **three** from the following list Nonprofit elective courses:

- PUAD 3005 - Collaboration Across Sectors
- PUAD 3110 - Seminar in Nonprofit Management
- PUAD 4140 - Nonprofit Financial Management
- PUAD 4160 - Nonprofit Boards and Executive Leadership
- PUAD 4020 - Social Entrepreneurship
- PUAD 4600 - Special Topics in Public Service: Study Abroad in East Africa
- PUAD 4600 - Special Topics in Public Service : Social Problems and Policies in the Urban Environment

Certified Nonprofit Professional Designation

Students completing the Nonprofit Management certificate may choose to simultaneously earn the national Certified Nonprofit Professional designation from the Nonprofit Leadership Alliance by completing additional extracurricular requirements. Contact spa.advising@ucdenver.edu for more information.

PUBLIC, NON-PROFIT AND COMMUNITY LEADERSHIP UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Political Science department information.

The CU Denver Political Science Department's Public, Non-Profit and Community Leadership Certificate engages students in a focused curriculum in local public leadership, and in the community organizing and development field, including field placements in internships with local community partners. The certificate is tailored to meet the needs of individuals in public and non-profit positions that require development of their leadership competencies and for individuals in informal community leadership positions who want to build their knowledge, skills, and effectiveness.

The program curriculum is anchored around the study and practice of local civic engagement, especially in traditionally marginalized communities. Students will be connected to meaningful work and networking opportunities in local government or in community settings, through community-based coursework, professional internships and service-learning opportunities. The certificate program provides critical education and effective skills-based training for students seeking careers in local government, in non-profit organizations, or in community organizing and development work. Students will be prepared to become change agents in their communities, while developing possible career paths in community-based advocacy/service organizations, public agencies, or international development work.

The certificate is open to non-degree seeking students (with or without an undergraduate degree) as well as students formally pursuing an undergraduate degree at CU Denver. The Certificate can be earned as a stand-alone University certificate, or it can be applied to a current or future degree program. Non-degree seeking students who successfully complete the certificate program would be allowed to transfer in the credits received in the certificate program to complete the Bachelor's Degree in Political Science.

The certificate can be earned either through our traditional on-campus courses, or entirely through classes offered in a weekend intensive format in our New Directions program. Students may take classes in either format desired.

Admissions and Declaring This Certificate

Any current or potential student wishing to declare this certificate should schedule a certificate advising appointment with either the Director of the New Directions program or with the Departmental Undergraduate Advisor, in order to register their intent to pursue the Public, Non-Profit and Community Leadership Certificate and to develop a curriculum plan.

Certificate Requirements:

1. Students must complete 15 credits in PSCI approved coursework.
2. Students must complete a minimum of 6 upper division (3000 level and higher) credit hours from approved coursework.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. All credits must be taken in residence at CU Denver. No transfer credits may apply.

Curriculum and Credit Requirements:

Undergraduate Credit Requirement: the undergraduate certificate requires five "public and community leadership" courses (15 credits), which must include PSCI 4914 (Community Organizing and Development) and an appropriate field study course (typical courses are an academic internship or PSCI 3914, The Urban Citizen).

Take the following **required** Public and Community Leadership course:

- PSCI 4914 - Community Organizing and Community Development

Take **one** of the following field placement courses:

- PSCI 3914 - The Urban Citizen
- PSCI 3939 - Internship
- PSCI 4934 - CU at the Capitol
- PSCI 4944 - CU in the City

Take 9 semester hours of elective Public and Community Leadership courses:

- PSCI 3035 - Political Movements: Race and Gender

- PSCI 3064 - Power and Empowerment in the United States
- PSCI 4025 - Local Governance and Globalization
- PSCI 4074 - Urban Politics
- PSCI 4075 - Gentrification and Social Equity
- PSCI 4084 - Local Government and Administration
- PSCI 4124 - Denver Politics
- PSCI 4206 - Social Movements, Democracy and Global Politics
- PSCI 4207 - Theories of Social and Political Change
- PSCI 4248 - Gender, Globalization and Development
- PSCI 4265 - Social Justice and Globalization
- PSCI 4274 - Conflict Resolution and Public Consent Building
- PSCI 4414 - Non-Profits and Social Change
- PSCI 5548 - Labor Law and Collective Bargaining
- PSCI 5424 - The Social Economy and Sustainable Development
- PSCI 5434 - The Cooperative Movement: Politics and Policy
- PSCI 4535 - Labor and Working Class Politics
- PSCI 4555 - International Women's Resistance
- PSCI 4002 - Topics in Political Science (with advisor approval)
- PSCI 4840 - Independent Study: PSCI (with advisor approval)

RISK MANAGEMENT AND INSURANCE CERTIFICATE

Introduction

The Business Schools undergraduate certificates are primarily intended for students currently pursuing a degree in any undergraduate discipline that want to expand their business knowledge to give themselves a leg up when they enter the workforce. However, they can also be taken by students with only a high school diploma.

Students can pursue one of our undergraduate certificates, even if they are not CU Denver students. Credit earned as a part of the certificate DOES count towards your undergraduate degree, should you choose to pursue a degree here.

Broaden your knowledge of Risk Management and Insurance (RMI) by completing a one-year Certificate in RMI Studies from the University of Colorado Denver. By completing three semester-long RMI courses, all available online, and meeting prior finance course requirements, you will be on your way to enhancing your personal knowledge and providing your employer with RMI awareness and professional skills.

Program Delivery

This is an on-campus program.

Declaring This Certificate

See the Risk Management and Insurance Certificate page for more information.

Certificate Requirements

Take **all** of the following required courses:

- RISK 3809 - Introduction to Risk Management
- RISK 4809 - Property & Casualty Insurance
- RISK 4909 - Corporate Risk Management

SCIENTIFIC FOUNDATIONS OF TECHNICAL INNOVATION CERTIFICATE

Introduction

Please click [here](#) to see Physics department information.

The goal of this certificate is to give students and working professionals an opportunity to broaden their technical knowledge while contributing to regional economic development. Two real-world projects-one for a client and one for the student's own pursuits-are combined with a series of six short courses to provide both context and substance for gaining the knowledge needed to create technical prototypes.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

- Entry into the certificate program requires prior completion of two semesters of calculus-based physics and two semesters of calculus or permission of the certificate advisor.

General Requirements

- [Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 12 credits from the approved courses.
2. Students must complete a minimum of 6 upper-division (3000-level and above) PHYS credit hours from the approved courses below.
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all credit hours with CU Denver faculty. No transfer courses are allowed.

Program Restrictions, Allowances and Recommendations

1. Students should meet with their program director for any substitutions (may be interdisciplinary).

Take **all** of the following Scientific Foundations of Technical Innovation courses:

- PHYS 4850 - Physics for Design and Innovation I
- PHYS 4852 - Physics for Design and Innovation II

Take **six** 1 semester-hour short courses out of the list of Topics in Scientific Instrumentation; the specific sequence must be approved by the certificate advisor.

- PHYS 4400 - Scientific Instrumentation

SOCIOLOGY OF HEALTH AND MEDICINE CERTIFICATE

Introduction

Please click [here](#) to see Sociology department information.

Enhancing the health and quality of life for individuals and communities are central goals to societies the world over. Medical sociology is a subfield devoted to the study of population health, health care systems and policy, and the social dimensions of illness and healing. Medical sociologists study the causes of health inequalities, social constructions of health and illness, origins of medical authority, doctor-patient relationships, community influences on health, and the social forces that affect policy. The Sociology Department's Sociology of Health and Medicine Certificate provides training in the core research methodologies and theories of medical sociology, examining individual experience, institutional structures, laws and policies that affect health, and broader systems of inequality that lead to unequal rates of illness and access to care. This certificate provides depth of training in these areas and is ideal for students interested in graduate-level study and social research on health and medicine as well as those interested in careers in public health, health care services, and non-profit organizations.

Upon successful completion of the certificate, students will:

- Articulate the central explanations for historical shifts in disease, including neighborhood effects and behaviors that may increase the risk of disease and mortality
- Identify social factors that contribute to population health inequalities, including race, ethnicity, gender, class, immigration status, sexuality, or disability
- Understand the social influences that shape medical authority, knowledge, and patient experiences with illness and treatment
- Be able to use different methodologies to understand the social aspects of health and medicine
- Know how to conduct original research, analyze policy, and evaluate community needs for organizations devoted to improving population health

Program Delivery

This is an on-campus or online program.

Declaring This Certificate

- Eligibility: While housed in Sociology, the study of health and medical issues is in fact a multidisciplinary field that draws from diverse liberal arts fields, including Anthropology, Communications, Psychology, and History, among others. Thus, CU Denver undergraduate students in any discipline can enroll in the certificate program. This certificate is also available to non-degree-seeking students who already have earned a BA or BS degree, either at CU Denver or elsewhere.
- Application procedures: Students are encouraged to apply for the Sociology of Health and Medicine Certificate at any point in their undergraduate studies. To apply, students should print and attach a completed the Sociology of Health and Medicine Certificate Application to an unofficial transcript. These documents should be submitted to the Sociology of Health and Medicine Certificate Administrator. Once the application is approved, students will be contacted about their acceptance into the program.

General Requirements

[Click here for information about Academic Policies.](#)

Program Requirements

1. Students must complete a minimum of 15 credit hours from the approved courses below.
2. Students must earn a minimum grade of C- (1.7) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
3. Students must complete all 15 credits applied to the certificate at CU Denver chosen from the approved courses below. (If students have completed a course required for the certificate elsewhere, they may add the needed credits in the form of additional elective credits drawn from the approved elective courses.)
4. The certificate will be awarded when the student graduates with the bachelor's degree.

Take the following **required** course:

- SOCY 3440 - Medical Sociology

Take **two** of the following courses:

- SOCY 3115 - Quantitative Methods & Analysis

- SOCY 3119 - Qualitative Methods

OR

2 approved methods courses in the student's major discipline, one on quantitative methods and one on qualitative methods (e.g. PSYC 2090, PSYC 3090, PSCI 3011, PHIL 3440, PHIL 2441, ECON 3801, ECON 3811, GEOG 2080, GEOG 4080). Questions about eligible methods course substitutions should be directed to the Sociology of Health & Medicine Certificate Administrator.

Take **two** of the following approved elective courses:

- SOCY 3010 - Sociology of Human Sexuality
- SOCY 3040 - Drugs, Alcohol & Society
- SOCY 3570 - Death & Dying: Social & Medical Perspectives
- SOCY 4050 - Health Disparities
- SOCY 4110 - Sociology of Health Care
- SOCY 4270 - Social Meanings of Reproduction
- SOCY 4290 - Aging, Society and Social Policy
- ANTH 3045 - Cannabis Culture
- ANTH 4010 - Medical Anthropology: Global Health
- ANTH 4290 - Anthropology and Public Health
- ANTH 4600 - Medical Anthropology
- COMM 4500 - Health Communication
- COMM 4525 - Health Communication and Community
- COMM 4550 - Rhetorics of Medicine & Health
- COMM 4558 - Digital Health Narratives
- ECON 4660 - Health Economics.
- ETST 3002 - Ethnicity, Health and Social Justice
- GEOG 3501 - Geography of Health
- GEOG 4235 - GIS Applications in the Health Sciences
- HEHM 3100 - Introduction to Health Humanities
- HIST 3606 - Science, Technology, and Society in the Modern World
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
- PHIL 3550 - Philosophy of Death and Dying
- PHIL 4242 - Bioethics
- PSCI 4330 - U.S. Health Policy
- PSYC 3262 - Health Psychology
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3612 - Domestic Abuse
- PSYC 3822 - Aging, Brain and Behavior

- WGST 4345 - Gender, Science, and Medicine: 1600 to the Present

SPANISH FOR INTERNATIONAL BUSINESS CERTIFICATE

Introduction

Please click [here](#) to see Modern Languages department information.

The Department of Modern Languages offers an undergraduate Certificate in Spanish for International Business for students seeking an academic credential showing that they are prepared to meet the challenges of doing business in the Spanish-speaking world.

This certificate is available to all students across the University, as well as non-degree-seeking business professionals seeking to increase their skill set and value in the international market.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with the Chemistry advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

- You must complete the **Application for the Certificate (available on the Department webpage)**. This requires an unofficial transcript from CU Denver showing that you are a current undergraduate student, or a copy of former transcripts indicating an undergraduate degree has been previously granted. This must be completed **prior** to completing the coursework (and applying for graduation, if you are a degree-seeking student) for the certificate.
- To begin coursework, non-degree-seeking students will need to apply to the University as a non-degree seeking student. Once accepted, you will be able to enroll in all of the appropriate classes. The following is a link to that information: <http://www.ucdenver.edu/admissions/non-degree/Pages/default.aspx>.

General Requirements

- [Click here for information about Academic Policies](#)

Program Requirements

1. Students must complete a minimum of 12 SPAN credit hours.
2. Students must complete all 12 SPAN credit hours at the upper division level (3000-level and above).
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. All 12 SPAN credits for the certificate must be earned at the University of Colorado Denver.

Take **all** of the following courses:

- SPAN 3700 - Spanish for International Business I
- SPAN 3710 - Spanish for International Business II

Take **two** of the following courses:

- SPAN 3213 - Contemporary Latin American Culture and Institutions
- SPAN 3223 - Contemporary Spanish Culture and Institutions
- SPAN 3782 - Introduction to Translation I
- SPAN 3792 - Introduction to Translation II
- Variable topics courses (e.g. SPAN 2130 or SPAN 3225) whose specific topic is applicable to Spanish for International Business can be applied to the certificate with advisor approval.

Note: SPAN 2120 (or equivalent proficiency) is a pre-requisite for all SPAN courses numbered 3XXX.

STRATEGIC COMMUNICATION UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Communication department information.

In keeping with worldwide transformations in information technology, media production, image consumption, message distribution, and norms of citizen engagement, the Department of Communication offers an Undergraduate Certificate in Strategic Communication (CSC).

Strategic Communication has been defined as the management function that entails planning, research, publicity, promotion and collaborative decision-making to help any organization's ability to listen to, appreciate and respond appropriately to those persons and groups whose mutually beneficial relationships the organization needs to foster as it strives to achieve its mission and vision.

Beginning in the Fall of 2018, the CSC requires students to complete 12 semester hours (four courses) in a structured manner.

These requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus or online program.

Declaring This Certificate

- Students should apply for the undergraduate certificate in Strategic Communication *after* the completion of the required courses.
- To apply, students must complete the certificate application (see the Communication Department website) and return it to Dr. Hamilton Bean in room 3010 of the Student Commons Building, or mail to Department of Communication; P.O. Box 173364, Campus Box 176; University of Colorado Denver; Denver, CO 80217-3364. The approved certificate is mailed to the student after final grades are posted for the semester.
- Students who are not already enrolled at CU Denver must also complete an Application for Non-Degree Admission prior to registering for courses. The form should be returned to the Office of Admissions.

Additional information about the undergraduate certificate in Strategic Communication may be obtained from Dr. Hamilton Bean, 303-315-1909, or Hamilton.Bean@ucdenver.edu.

General Requirements

- Click [here](#) for information about Academic Policies.

Certificate Requirements

1. The Undergraduate Certificate in Strategic Communication requires 12 semester hours from the approved courses below (four courses).
2. Students must earn a minimum grade of B (3.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
3. A minimum of 6 credits taken from the approved courses must be at the upper division level.
4. All of the credit hours for the certificate must be earned at the University of Colorado Denver.

Required Courses

To build on a shared set of foundational theories, norms, and skills, all CSC-seeking students take two required courses in Communication:

- COMM 2051 - Introduction to Strategic Communication
- COMM 2071 - Media Writing Skills

Electives

CSC-seeking students will then burnish their production skills by taking an elective from chosen areas of content expertise. Phase Two therefore includes taking at least one elective chosen from the following courses:

- COMM 2081 - New Media Production and Management
- COMM 3660 - Social Media for Social Change
- COMM 3939 - Internship
- COMM 4665 - Principles of Advertising
- FINE 2155 - Introduction to Digital Photography
- FINE 2405 - Introduction to Digital Design
- FINE 2415 - Typography Studio
- FINE 3414 - Motion Design I
- Another elective with a strategic communication focus may be approved for the CSC in consultation with Dr. Hamilton Bean or a Department of Communication advisor.

Capstone Project

CSC-seeking students will complete their certificate by undertaking a semester-long

capstone project conducted in conjunction with a community partner. This requirement will be satisfied by taking:

- COMM 4051 - Advanced Strategic Communication
- FINE 4400 - Design Studio III

SUSTAINABLE URBAN AGRICULTURE UNDERGRADUATE CERTIFICATE

Introduction

Please click [here](#) to see Geography and Environmental Sciences department information.

Certificate Advisor: Amanda Weaver

Email: amanda.weaver@ucdenver.edu

The goal of the certificate program is to provide GES students advanced training in sustainable urban agriculture through the integration of university classroom study and field-based practicum conducted at the department's field research station. Requirements for the certificate are therefore divided between on-campus courses and field courses.

Upon successful completion of the certificate, students will:

- Have knowledge of the history of urban farming
- Understand the modern agro-food system
- Participate in sustainable urban agricultural practices

Program Delivery

This is both an on-campus and field-based program.

Declaring This Certificate

- Please see the certificate advisor.

General Requirements

- [Click here for information about Academic Policies.](#)

Certificate Requirements

1. Students must complete a minimum of 12 GEOG credit hours.
2. Students must complete all 12 GEOG credit hours at the upper division level (3000-level and above).
3. Students must earn a minimum grade of C (2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 3.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. Students must complete all 12 GEOG credit hours with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. The certificate will be awarded when the student graduates with the bachelor's degree.
2. All core courses are offered on a yearly basis. Any alterations to the program **MUST** be approved by the certificate advisor.
3. Courses taken within the Sustainable Urban Agriculture Certificate Program may be used towards one other degree requirement.
4. Any changes to the standard curriculum program must be approved in writing by the certificate advisor.
5. Because a certificate is a CU Denver certification of a students' specialized knowledge in an advanced subject matter, all courses in a certificate program are expected to be taken in residency at CU Denver. Only in rare circumstances will exceptions be made regarding this policy
6. Please pay close attention to prerequisites for specific courses.

Take **all** of the following courses (9 credit hours):

- GEOG 4450 - Urban Food and Agriculture: Perspectives and Research
- GEOG 4460 - Sustainable Urban Agriculture Field Study I
- GEOG 4470 - Sustainable Urban Agriculture Field Study II

Take **one** of the following elective courses (3 credit hours):

- GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing
- GEOG 4085 - GIS Applications for the Urban Environment
- GEOG 4265 - Sustainability in Resources Management
- GEOG 4335 - Contemporary Environmental Issues
- GEOG 4640 - Urban Geography: Denver and the U.S.

- GEOG 4680 - Urban Sustainability: Perspectives and Practice
- GEOG 3939 - Internship (a sustainable agriculture internship with a local food/urban agriculture community organization)

VICTIMS AND VICTIM SERVICES CERTIFICATE

Introduction

Please click [here](#) to see School of Public Affairs information.

The undergraduate certificate in Victims and Victim Services Studies provides a detailed, comprehensive, and advanced education in fields related to victims and victim services. The CJVS program is designed to meet the needs of students who wish to work in fields related to victim services or who are currently working in this field and would like to enrich their professional development.

The CJVS program applies a multi-faceted approach to higher education that:

- Enhances analytical thinking and inclusive, relevant approaches to learning and the development of professional skills; and
- Focuses on specific, yet comprehensive, substantive areas of victims and victim services that students can apply to their current or future careers in the field.

Students completing the CJVS certificate program will have the knowledge and skills to evaluate, manage, and respond to a variety of situations and issues that professionals in fields related to victims and victim services face. Specifically, they will possess technical, analytic, substantive, and ethical proficiencies that will facilitate their professional interactions and development. They will understand the different environments and contexts in which victim advocates and other professionals in this field and related ones carry out their responsibilities.

Program Delivery

- Courses are offered on campus, online and in hybrid formats.

Declaring This Certificate

- Please contact spa.advising@ucdenver.edu

General Requirements

- CU Denver's Undergraduate Academic Policies

Program Requirements

1. The Victims and Victim Services Certificate requires 18 credit hours of coursework.
2. A maximum of 6 transfer credit may be applied to the certificate.
3. Students must receive a minimum C- grade in each undergraduate course applied to satisfy the certificate requirements.

Program Core Courses:

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- CRJU 2041 - Criminological Theory
- CRJU 4170 - Victimology
- CRJU 3285 - Trauma in the Criminal Justice System

Program Electives:

There are two elective categories, Violence Focus and Professional Setting. The Violence Focus electives allows the student to learn about an area of violence in a more in-depth capacity. The Professional Setting elective allows the student to hone skills related to service delivery.

Violence Focus (students **take one** of the following):

- CRJU 3250 - Violence in Society
- CRJU 3280 - Trauma Among Correctional Populations
- CRJU 4140 - Domestic Violence and Crime
- ETST 2115 - Genocide in the 21st Century: Darfur and Beyond
- PSCI 4807 - Political Violence
- SOCY 4460 - Hate Groups and Group Violence
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable.

Professional Setting (students **take one** of the following):

- CRJU 4939 - Internship
- HDFR 4090 - Helping Profession Skills in HDFR
- PUAD 4009 - Human Service Organizations
- PMUS 3110 - Social and Political Implications of American Music
- Other electives not already listed may be considered but the student must receive approval from the academic advisor prior to enrollment

Students must adhere to departmental pre-requisites, if applicable

Post Baccalaureate Certificate

ALLIED AND PROFESSIONAL HEALTH SCIENCES POST BACCALAUREATE CERTIFICATE

Introduction

Please click [here](#) to see Integrative Biology Department information.

The health field offers job opportunities and rewarding careers. It is one of the fastest growing industries in the US and the Bureau of Labor Statistics has projected increasing demand and labor shortages for at least the next ten years. The CU Denver Post-Baccalaureate Allied and Professional Health Sciences Certificate was developed as an opportunity for the many students who already have a bachelor's degree and want to shift their career into this large and fast growing industry to improve employment opportunities and potential earnings.

In order to improve their position among many highly qualified applicants to health professions programs and for health science related jobs, we anticipate that many students will need to continue their higher education. The College of Liberal Arts and Sciences has developed a certificate that provides a broad foundation in STEM (Biology, Chemistry and Physics) and advanced health-oriented coursework that is essential for both graduate and professional programs and the needs of the health industry.

Students who have already completed an undergraduate degree but need additional undergraduate pre-requisite courses to apply to health professions programs (including medicine, pharmacy, dentistry, nursing, lab technicians, health research jobs and more) can benefit from the CU Denver Post Baccalaureate Allied and Professional Health Sciences Certificate. CU Denver is well-known for preparing students for applications to health careers and acceptance to health professions programs. This certificate program offers high quality, rigorous preparatory classes and exceptional health careers advising including assistance with letters of evaluation, seminars on application processes, and assistance finding clinical, research, and community service experiences to enhance applications.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their program advisor to confirm the best plans of study before finalizing them. Exceptions and substitutions must be approved by the Director of the certificate.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

When applying to CU Denver, students should select the Undergraduate Degree-Seeking option. After indicating that the student has or will have completed a bachelor's degree, the applicant should be directed to a screen that allows selection into the Allied and Professional Health Sciences Certificate. After admission, students should meet with a Health Professions Advisor (NC 3002) to work collaboratively to develop a course plan that best meets their academic and career goals.

Contact details

Trishia Vasquez

trishia.vasquez@ucdenver.edu

303.315.7541

Health Professions Advising, NC 3002 C

General Requirements

- [Click here for information about Academic Policies](#)

Certificate Requirements

1. Students must complete a total of 32 credit hours with a minimum of 15 credit hours from the approved courses below at CU Denver.
2. Students must complete a minimum of 12 upper-division (3000-level and above) credit hours, from approved coursework.
3. Students must earn a minimum grade of C(2.0) in all certificate courses taken at CU Denver and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Students cannot complete certificate or ancillary course requirements as pass/fail.
4. The 15 credit hours of course work from the approved list below must be completed at CU Denver. Other coursework (up to 17 credit hours) used as pre-requisites or other courses applicable to the certificate program, may be taken at CU Denver or transferred from another university after evaluation and approval.

Program Restrictions, Allowances and Recommendations

1. All upper division level courses used to satisfy the requirements for the Certificate must be completed at CU Denver.
2. Students may use prior/transfer coursework to fulfill requirements and prerequisites, as long as departmental faculty evaluate the coursework and decide they are directly equivalent to the courses at CU Denver.
3. All courses used to satisfy the requirements for the Certificate must be completed within a five-year period.
4. Individual courses used to earn the Certificate may carry other prerequisites that must be met before enrolling.
5. Students must complete all of the following courses or demonstrate equivalent credit through transfer coursework taken within the last 10 years.
6. A prerequisite for any course must be transferred or completed at CU Denver before enrolling in that course.
7. Graduate level courses can substitute for their undergraduate counterparts with approval.
8. Specific requirements may exist pertaining to financial aid.
9. Students must already have earned a Bachelor's degree to enroll for the certificate.
10. Students currently enrolled in Bachelor's, Master's or Doctoral degree programs are not eligible for the certificate.
11. Students who complete the Certificate may not apply the courses used to earn the Certificate toward a second degree, if they choose to return and seek a second degree at CU Denver.

CU Denver Certificate Coursework:

With approval, complete 15 credits from the following list:

- ANTH 3150 - Special Topics in Medical Anthropology
- ANTH 3202 - Anthropology of Health Care Policy
- ANTH 4010/5014 - Medical Anthropology: Global Health
- ANTH 4060/5060 - Evolutionary Medicine
- ANTH 4080/5080 - Global Health Practice
- ANTH 4290/5290 - Anthropology and Public Health
- ANTH 4300/5300 - Migrant Health
- ANTH 4600/5600 - Medical Anthropology
- ANTH 4800/5800 - Special Topics in Medical Anthropology

- BIOE 3010 - Bioinstrumentation
- BIOE 3020 - Introduction to Biomechanical Analysis
- BIOE 3030 - Introduction to Biomaterials
- BIOE 3040 - Physiology for Bioengineering
- BIOE 3050 - Cell & Molecular Bioengineering
- BIOE 3051 - Cell & Molecular Bioengineering Lab
- BIOE 3060 - Biostatistics, Measurement and Analysis
- BIOE 3070 - Bioengineering Lab I
- BIOE 3071 - Bioengineering Lab II
- BIOE 3090 - Introduction to BioDesign
- BIOE 3939 - Undergraduate Internship
- BIOE 4035 - Undergraduate BioDesign II
- BIOE 4045 - BioDesign III
- BIOE 4053 - Optics and Microscopy in Biomedical Research
- BIOE 4063 - 3D Modeling for Bioengineers
- BIOE 4064 - Advanced MatLab For Bioengineers And Life Scientists
- BIOE 4068 - Introduction to Medical Imaging
- BIOE 4069 - Advanced Biomechanics for Undergraduates
- BIOE 4073 - Neural Interfaces and Bionic Limbs
- BIOE 4083 - Polymers in Biomedical Applications
- BIOE 4085 - Tissue Engineering
- BIOE 4420 - Special Topics in Bioengineering
- BIOE 4840 - Independent Study in Bioengineering
- BIOE 4929 - Undergraduate Research Project

- BIOL 3104 - Behavioral Genetics
- BIOL 3124 - Introduction to Molecular Biology
- BIOL 3134 - Advanced Topics
- BIOL 3225 - Human Physiology
- BIOL 3244 - Human Anatomy
- BIOL 3521 - Vertebrate Biology
- BIOL 3525 - Parasitology
- BIOL 3611 - General Cell Biology
- BIOL 3612 - Cell Biology Laboratory
- BIOL 3621 - Introduction to Immunology
- BIOL 3654 - General Microbiology
- BIOL 3674 - Endocrinology
- BIOL 3763 - Biostatistics

- BIOL 3804 - Developmental Biology
 - BIOL 3832 - General Genetics
 - BIOL 3939 - Internship
 - BIOL 4024/5024 - Introduction to Biotechnology
 - BIOL 4050 - Advanced Biology Topics
 - BIOL 4053 - Disease Ecology
 - BIOL 4055 - Virology
 - BIOL 4064 - Cell Biology of Disease
 - BIOL 4068 - The Cell Cycle
 - BIOL 4074 - Human Reproductive Biology
 - BIOL 4125 - Molecular Biology Laboratory
 - BIOL 4126 - Molecular Genetics
 - BIOL 4128 - Topics in Molecular Biology
 - BIOL 4134 - Human Genetics
 - BIOL 4144 - Medical Microbiology
 - BIOL 4165 - Neurobiology
 - BIOL 4225 - Genomics and Bioinformatics
 - BIOL 4425 - Biogeography
 - BIOL 4460 - Environmental Toxicology
 - BIOL 4464 - Exercise Physiology
 - BIOL 4475 - Mechanisms of Human Pathology
 - BIOL 4494 - Population and Evolutionary Genetics
 - BIOL 4550 - Cell Signaling
 - BIOL 4622 - Topics in Immunology
 - BIOL 4634 - Biology of Cancer
 - BIOL 4644 - Advanced Human Anatomy Laboratory
 - BIOL 4674 - Endocrinology
 - BIOL 4815 - Structural Biology of Neurodegenerative Diseases
 - BIOL 4825 - Biochemistry of Metabolic Disease
 - BIOL 4835 - Biochemistry of Gene Regulation and Cancer
 - BIOL 4840 - Independent Study
 - BIOL 4880 - Directed Research
 - BIOL 4990 - Undergraduate Research Seminar
-
- CHEM 2300 - Nutritional Chemistry
 - CHEM 3810 - Biochemistry
 - CHEM 4810 - General Biochemistry I
 - CHEM 4815 - Structural Biology of Neurodegenerative Diseases

- CHEM 4820 - General Biochemistry II
 - CHEM 4825 - Biochemistry of Metabolic Disease
 - CHEM 4835 - Biochemistry of Gene Regulation and Cancer
 - CHEM 4845 - Molecular Modeling and Drug Design
-
- COMM 2500 - Introduction to Health Communication
 - COMM 4500 - Health Communication
 - COMM 4525 - Health Communication and Community
 - COMM 4550 - Rhetorics of Medicine & Health
 - COMM 4558 - Digital Health Narratives
 - COMM 4575 - Designing Health Messages
 - COMM 4620 - Health Risk Communication
-
- GEOG 3501 - Geography of Health
-
- HEHM 3100 - Introduction to Health Humanities
-
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
 - HIST 4348 - Mind and Malady: A History of Mental Illness
-
- IWKS 4500 - Bio-Design and Innovation
 - IWKS 4520 - Design for Healthful Human Longevity
-
- LATN 3000 - Medical Terminology
-
- PHIL 4242 - Bioethics
-
- PHYS 3251 - Biophysics of the Body
 - PHYS 3252 - Biophysics of the Body NM
 - PHYS 3451 - Biophysics of the Cell
 - PHYS 3452 - Biophysics of the Cell NM
-
- PSYC 2205 - Lifespan Developmental Psychology for Health Majors
 - PSYC 2220 - Biological Basis of Behavior

- PSYC 3205 - Human Development I: Child Psychology
 - PSYC 3215 - Human Development II: Adolescence and Adulthood
 - PSYC 3262 - Health Psychology
 - PSYC 3265 - Drugs, Brain and Behavior
 - PSYC 3305 - Abnormal Psychology
 - PSYC 3810 - Neuropsychology
-
- PBHL 1001 - Race, Gender, Class, & Health
 - PBHL 2001 - Introduction To Public Health
 - PBHL 3001 - Introduction to Epidemiology
 - PBHL 3031 - Health, Human Biology and Behavior
 - PBHL 3041 - Health, Culture and Society
 - PBHL 3070 - Perspectives in Global Health
 - PBHL 4080 - Global Health Practice
-
- SOCY 3440 - Medical Sociology
 - SOCY 4110 - Sociology of Health Care
-
- SPAN 3740 - Spanish for the Healthcare Professions I
 - SPAN 3750 - Spanish for the Healthcare Professions II

Other coursework and allowable transfer courses:

Up to 17 credit hours of the following courses may be taken at CU Denver or transferred from another university after evaluation and approval.

- BIOL 2051 - General Biology I
- BIOL 2061 - General Biology II
- BIOL 2071 - General Biology Laboratory I
- BIOL 2081 - General Biology Laboratory II
- BIOL 2095 - Honors General Biology I
- BIOL 2096 - Honors General Biology Lab I
- BIOL 2097 - Honors General Biology II
- BIOL 2098 - Honors General Biology Lab II
- BIOL 3124 - Introduction to Molecular Biology
- BIOL 3225 - Human Physiology
- BIOL 3244 - Human Anatomy

- BIOL 3521 - Vertebrate Biology
- BIOL 3525 - Parasitology
- BIOL 3611 - General Cell Biology
- BIOL 3612 - Cell Biology Laboratory
- BIOL 3621 - Introduction to Immunology
- BIOL 3654 - General Microbiology
- BIOL 3763 - Biostatistics
- BIOL 3804 - Developmental Biology
- BIOL 3832 - General Genetics
- BIOL 3939 - Internship
- BIOL 4055 - Virology
- BIOL 4064 - Cell Biology of Disease
- BIOL 4125 - Molecular Biology Laboratory
- BIOL 4126 - Molecular Genetics
- BIOL 4134 - Human Genetics
- BIOL 4144 - Medical Microbiology
- BIOL 4165 - Neurobiology
- BIOL 4464 - Exercise Physiology
- BIOL 4475 - Mechanisms of Human Pathology
- BIOL 4550 - Cell Signaling
- BIOL 4622 - Topics in Immunology
- BIOL 4634 - Biology of Cancer
- BIOL 4644 - Advanced Human Anatomy Laboratory
- BIOL 4674 - Endocrinology
- CHEM 1000 - Foundations for General Chemistry
- CHEM 1474 - Core Chemistry: Chemistry for Everyday
- CHEM 2031 - General Chemistry I
- CHEM 2038 - General Chemistry Laboratory I
- CHEM 2061 - General Chemistry II
- CHEM 2068 - General Chemistry Laboratory II
- CHEM 2081 - Honors General Chemistry I
- CHEM 2088 - Honors General Chemistry I Laboratory
- CHEM 2091 - Honors General Chemistry II Lecture
- CHEM 2098 - Honors General Chemistry II Laboratory
- CHEM 2300 - Nutritional Chemistry
- CHEM 3411 - Organic Chemistry I
- CHEM 3421 - Organic Chemistry II
- CHEM 3481 - Honors Organic Chemistry I

- CHEM 3491 - Honors Organic Chemistry II
- CHEM 3810 - Biochemistry
- CHEM 4810 - General Biochemistry I
- CHEM 4820 - General Biochemistry II
- COMM 2500 - Introduction to Health Communication
- HEHM 3100 - Introduction to Health Humanities
- HIST 4345 - Gender, Science, and Medicine: 1600 to the Present
- LATN 3000 - Medical Terminology
- MATH 1110 - College Algebra
- MATH 1120 - College Trigonometry
- MATH 1130 - Precalculus Mathematics
- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 2830 - Introductory Statistics
- PBHL 1001 - Race, Gender, Class, & Health
- PBHL 2001 - Introduction To Public Health
- PBHL 3001 - Introduction to Epidemiology
- PBHL 3031 - Health, Human Biology and Behavior
- PHIL 3002 - Ancient Greek Philosophy
- PHIL 3022 - Modern Philosophy
- PHIL 4242 - Bioethics
- PSYC 1000 - Introduction to Psychology I
- PSYC 1005 - Introduction to Psychology II
- PSYC 2205 - Lifespan Developmental Psychology for Health Majors
- PSYC 2220 - Biological Basis of Behavior
- PSYC 3205 - Human Development I: Child Psychology
- PSYC 3215 - Human Development II: Adolescence and Adulthood
- PSYC 3262 - Health Psychology
- PSYC 3265 - Drugs, Brain and Behavior
- PSYC 3305 - Abnormal Psychology
- PSYC 3810 - Neuropsychology
- SOCY 3440 - Medical Sociology
- SOCY 4110 - Sociology of Health Care

Other Programs

CU Denver Core Curriculum

The following represents the CU Denver Core curriculum as approved by the faculty on the Core Curriculum Oversight Committee (CCOC). The Core curriculum is a total of 34-38 semester hours.

English

Students must earn a minimum grade of C- or (1.7) in each course to satisfy this core curriculum requirement.

Both courses are required.

- ENGL 1020 - Core Composition I
- ENGL 2030 - Core Composition II

Mathematics

Students must earn a minimum grade of C- (1.7) to satisfy this core curriculum requirement.

One course is required.

- MATH 1010 - Mathematics for the Liberal Arts
- MATH 1060 - Finite Mathematics
- MATH 1109 - Stretch College Algebra-Part 2
- MATH 1110 - College Algebra
- MATH 1120 - College Trigonometry
- MATH 1130 - Precalculus Mathematics
- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 2830 - Introductory Statistics
- MATH 3041 - Fundamental Mathematics

Arts

One course is required.

- ENGL 2156 - Introduction to Creative Writing
- FINE 1000 - Fostering Creativity
- FINE 1001 - Introduction to Art
- FINE 1450 - Visual Culture: Ways of Seeing
- FITV 1001 - Fundamentals of Film and Television
- FITV 1005 - Introduction to Theatre & Arts in the Community

- FITV 1115 - Horror in Western Culture and Cinema
- LDAR 1015 - Engaging Landscapes for Wicked Change
- PMUS 1001 - Music Appreciation

Humanities

One course is required.

- CHIN 1000 - China and the Chinese
- ENGL 1601 - Storytelling: Literature, Film, and Television
- ENGL 2600 - Literary Classics
- ETST 2155 - African American History
- FINE 2600 - Art History Survey I (beginning Spring 2017)
- FINE 2610 - Art History Survey II (beginning Spring 2017)
- FREN 1000 - Introduction to Cultures of the French- Speaking World
- FREN 2003 - French Language III
- FREN 2004 - French Language 4: Introduction to Advanced Studies
- GRMN 1000 - Germany and the Germans
- HIST 1361 - U.S. History to 1876
- HIST 1362 - U.S. History Since 1876
- HIST 1381 - Backstories: Hidden Origins
- HIST 1400 - Controversies in History
- LCRT 2000 - Rebels, Villains, & Superheroes: How Children's Literature Shapes Our Identities
- PHIL 1012 - Introduction to Philosophy: Relationship of the Individual to the World
- PHIL 1020 - Introduction to Ethical Reasoning
- PHIL 2441 - Logic, Language and Scientific Reasoning
- RLST 1610 - Introduction to Religious Studies
- RLST 2660 - World Religions
- SPAN 1000 - Introduction to Cultures of the Spanish Speaking World

Behavioral Sciences

One course is required.

- ANTH 1302 - Introduction to Archaeology
- ANTH 2102 - Culture and the Human Experience
- COMM 1011 - Fundamentals of Communication
- COMM 1021 - Introduction To Media Studies

- HDFR 2080 - Sex, Human Development and Family Systems
- LING 2000 - Foundations of Linguistics
- PSYC 1000 - Introduction to Psychology I
- PSYC 1005 - Introduction to Psychology II
- SPSY 2200 - Child and Adolescent Mental Health in Schools and Communities

Social Sciences

One course is required.

- CRJU 1000 - Criminology and Criminal Justice: An Overview
- ECON 2012 - Principles of Economics: Macroeconomics
- ECON 2022 - Principles of Economics: Microeconomics
- EDFN 1000 - Equality, Rights & Education
- ENVS 1342 - Environment, Society and Sustainability
- ETST 2000 - Introduction to Ethnic Studies
- GEOG 1102 - World Regions Global Context
- GEOG 1602 - Urban Studies and Planning
- GEOG 2202 - Hazards to Disasters: Perception and Management
- HDFR 1080 - Lifespan Issues in Family Violence
- HDFR 2200 - Love, Family and Human Development
- INTE 2500 - Digital Media and Learning
- PBHL 1001 - Race, Gender, Class, & Health
- PBHL 2001 - Introduction To Public Health
- PSCI 1001 - Introduction to Political Science: The Quest for Freedom and Justice
- PSCI 1101 - American Political System
- PUAD 1001 - Introduction to Leadership and Public Service
- SJUS 2000 - Foundations in Social Justice
- SOCY 1001 - Understanding the Social World
- SOCY 2462 - Introduction to Social Psychology

Natural and Physical Sciences, Mathematics

Two courses are required. One of the two required courses must have a laboratory.

Science Courses with Labs

- ANTH 1303 - Introduction to Biological Anthropology
- BIOL 1550 - Basic Biology: Ecology and the Diversity of Life

- BIOL 1560 - Basic Biology: From Cells to Organisms
- CHEM 1474 - Core Chemistry: Chemistry for Everyday
- CHEM 1494 - Forensic Chemistry
- PHYS 1052 - General Astronomy I

Science Courses with Co-requisite Labs

- BIOL 2051 - General Biology I **and**
- BIOL 2071 - General Biology Laboratory I

- BIOL 2061 - General Biology II **and**
- BIOL 2081 - General Biology Laboratory II

- CHEM 2031 - General Chemistry I **and**
- CHEM 2038 - General Chemistry Laboratory I

- CHEM 2061 - General Chemistry II **and**
- CHEM 2068 - General Chemistry Laboratory II

- ENVS 1044 - Introduction to Environmental Sciences **and**
- ENVS 1045 - Introduction to Environmental Sciences Laboratory

- GEOL 1073 - Physical Geology: Surface Processes **and**
- GEOL 1074 - Physical Geology: Surface Processes Laboratory

- GEOL 1083 - Physical Geology: Internal Processes **and**
- GEOL 1084 - Physical Geology: Internal Processes Laboratory

- PHYS 2010 - College Physics I **and**
- PHYS 2030 - College Physics Lab I

- PHYS 2311 - General Physics I: Calculus-Based **and**
- PHYS 2321 - General Physics Lab I

- PHYS 2020 - College Physics II **and**
- PHYS 2040 - College Physics Lab II

- PHYS 2331 - General Physics II: Calculus-Based **and**
- PHYS 2341 - General Physics Lab II

Science Courses without Labs and Mathematics

- CSCI 1350 - Introduction to Computing in Society
- GEOG 1202 - Introduction to Physical Geography
- PHYS 1100 - Foundations of Physics
- PSYC 2220 - Biological Basis of Behavior

MATH - A mathematics course taken to fulfill the Biological and Physical Sciences, Mathematics area must be from the approved Mathematics list, excluding the course taken to fulfill the Mathematics requirement.

- MATH 1010 - Mathematics for the Liberal Arts
- MATH 1080 - Calculus for Social Sciences and Business
- MATH 1110 - College Algebra
- MATH 1120 - College Trigonometry
- MATH 1130 - Precalculus Mathematics
- MATH 1401 - Calculus I
- MATH 2411 - Calculus II
- MATH 2421 - Calculus III
- MATH 2830 - Introductory Statistics
- MATH 3041 - Fundamental Mathematics

International Perspectives

One course is required.

A preapproved study abroad experience may satisfy this requirement.

- ANTH 3000 - Globalization, Migration and Transnationalism
- CLDE 1000 - Language, Identity, & Power: International Perspectives
- ENGL 3798 - International Perspectives in Literature and Film
- ENGR 3600 - International Dimensions of Technology and Culture
- ETST 3110 - Indigenous Studies

- ETST 3272 - Global Media
- FINE 1002 - International Perspectives through Animation
- FINE 3775 - Asian Art, 1850 to Now
- FITV 1120 - Contemporary World Cinema
- FITV 3550 - World Theatre
- FREN 3200 - The Francophone World in the Post-Colonial Era
- GEOG 3412 - Globalization and Regional Development
- GRMN 3200 - Current German Society and Culture
- HDFR 1000 - Global Human Development & Learning
- HDFR 3250 - Families in Global Perspectives
- HIST 3121 - The World at War, 1914-1945
- HIST 4032 - Globalization in World History Since 1945
- INTB 3000 - Global Perspectives
- INTB 4200 - International Marketing
- INTS 2020 - Foundations of International Studies
- MKTG 4200 - International Marketing
- PBHL 2052 - Global Demography and Health
- PHIL 3410 - Asian Philosophies and Religions
- PSCI 3022 - Political Systems of the World
- PSCI 3042 - Introduction to International Relations
- RLST 3120 - Islamic Traditions
- SOCY 3720 - Global Perspectives on Social Issues

Cultural Diversity

One course is required.

Cultural diversity courses are taught at the upper division level.

- ANTH 3142 - Cultural Diversity in the Modern World
- COMM 3271 - Communication and Diversity
- ECON 3100 - Economics of Race and Gender
- EDFN 3000 - Undocumented Mexican Immigration
- EDFN 4000 - Food Justice in City & Schools
- ENGL 3795 - Race and Ethnicity in American Literature
- ENGR 3400 - Technology and Culture
- ETST 3036 - American Indian Cultural Images
- ETST 3704 - Culture, Racism and Alienation
- FITV 3611 - Drama of Diversity
- HDFR 3020 - Black and Latino Children in Families and Schools

- HIST 3345 - Immigration and Ethnicity in American History
- HIST 3349 - Social Movements in 20th Century America
- LING 3100 - Language in Society
- MGMT 4100 - Leveraging Diversity and Inclusion in Business
- PHIL 3500 - Ideology and Culture: Racism and Sexism
- PMUS 3100 - US Music: Social & Political Impact
- PSCI 3034 - Race, Gender, Law and Public Policy
- PSCI 3035 - Political Movements: Race and Gender
- PSYC 4485 - Psychology of Cultural Diversity
- RLST 4000 - Religion and Cultural Diversity
- SOCY 3020 - Race and Ethnicity in the U.S.
- WGST 3020 - Gender, Sexuality and Race in American Popular Culture
- LCRT 3815 - Literacies in Diverse Families & Communities

Other Degree Requirements

In addition to the CU Denver Core Curriculum requirements listed above, students must complete a major and fulfill all additional School/College requirements. More information on these requirements can be found in the Academic Catalog in the following locations:

- Programs
- CU Denver General Graduation Requirements
- School/College Specific Graduation Requirements
 - Business School
 - College of Architecture and Planning
 - College of Arts & Media
 - College of Engineering, Design and Computing
 - College of Liberal Arts and Sciences
 - School of Education and Human Development
 - School of Public Affairs

Courses

Catalog Course Definitions

Core – Course is approved for specific core curriculum (i.e. arts and sciences curriculum; quantitative reasoning and mathematical skills)

Cross-Listed – Class that is offered along with another class that has the same topic, title, and course content. Max Hours displayed for each cross-listed class is the total number of hours allowed for all courses completed within a particular cross-listed group. *See below for more information on Max Hours.*

Gt - Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer as part of the gtPathways program.

Max Hours (in Course Description) – Total number of applicable credit hours that count toward a student’s degree for a particular course or cross-listed group.

Requisite:

- **Prerequisite** – Specific course completed or “in progress” (i.e. ENGL 1020 or ENGL 1020 with C- or higher)
- **Corequisite** – Specific course taken at the same time (i.e. BIOL 2071 taken same time as BIOL 2051)
- **Restriction** – Restricted to a specific population (i.e. Restricted to MUSC majors or junior standing, etc.)

Course Number Definitions:

- 1000 - 4999 Undergraduate Level
- 5000 - 9999 Graduate Level

Accounting

ACCT 2200 - Financial Accounting and Financial Statement Analysis

The financial accounting process, the role of the profession and the analysis of financial statements. Principal focus on interpretation of financial statements, with emphasis on asset and liability valuation problems and the determination of net income. Prereq: MATH 1070 or MATH 1060 or MATH 1110 or MATH 1080 or MATH 1130 or MATH 1401 or MATH 1120 with a grade of C- or higher. Restriction: Restricted to undergraduate students at a sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 2220 - Managerial Accounting and Professional Issues

Introduces managerial accounting. Shows managers how to use accounting information to make decisions. Principal focus on cost behavior analysis, budgeting and product costing. Prereq: MATH 1070, or MATH 1060, or MATH 1080, or MATH 1110, or MATH 1120, or MATH 1130, or MATH 1401 with a grade of C- or higher and ACCT 2200 with a C- or higher. Restriction: Restricted to undergraduate students at a sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 2550 - Introductory Accounting for Entrepreneurs and the Arts

An integration of financial and managerial accounting processes as they relate to Entrepreneurs, Arts & Media managers and similar applications. This course will cover the analysis and interpretation of financial statements, asset and liability valuation and the

determination of net income. Incorporates the use of accounting information to make decisions focusing on cost behavior analysis, budgeting and product costing in entrepreneurial and arts related businesses. Prereq: MATH 1070 or 1110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 3220 - Intermediate Financial Accounting I

A foundation course in financial accounting, this course provides an intensive analysis of generally accepted accounting principles, accounting theory and the construction and interrelation of financial statements for public corporations. Encourages critical thought and application of financial accounting standards to business transactions. A grade of C or higher is required in this course to proceed to the next level ACCT course or receive credit for the CPA license. Prereq: ACCT 2220 and DSCI/BANA 2010 both with a grade of 'C-' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 3230 - Intermediate Financial Accounting II

Continuing the intensive coverage of financial accounting from ACCT 3220/ACCT 6031, this course covers concepts of financial accounting theory and generally accepted accounting principles not covered in 3220/6031. This typically includes detailed coverage of liabilities and equity, especially the topics of leases, deferred taxes, pensions and stock-options. A grade of C or higher is required in this course to proceed to the next level ACCT course or receive credit for the CPA license. Prereq: ACCT 3220, completed with a grade of a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6032. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 3320 - Intermediate Cost Accounting

Cost accounting links financial and managerial accounting and emphasizes communication between accountants and managers. Topics include managerial uses of cost data for decision making, analysis of activities and cost behavior, the role of accounting in planning and control, and computer-assisted decision modelling. A grade of C or higher is required in this course to proceed to the next level ACCT course or receive credit for the CPA license. Prereq: ACCT 2220 and DSCI/BANA 2010 both with a grade of 'C-' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ACCT 4030 - Financial Accounting

Analysis of financial accounting concepts, the development of accounting thought and principles and critical review of generally accepted accounting principles. (Not recommended for candidates planning to sit for the CPA examination.) Note: Students who have taken ACCT 3220 or ACCT 3230 (or equivalent) may not take this course. Prereq: ACCT 2200 and ACCT 2220 or equivalent. Must have a 'C' or better in courses. Strictly enforced. Max hours: 3 Credits.

Semester Hours: 3 to 3

ACCT 4054 - Accounting Information Systems

This course focuses on the analysis, design, implementation and control of accounting information systems. Emphasis is placed on primary business processes including documentation, modeling, retrieving information to support managerial decisions and controlling risks. Topics include transaction cycles, relational database modeling, data analytics and information systems risks and controls. Must earn a grade of C or better to qualify for graduation at the UG level and to receive credit for the CPA license. Prereq: ACCT 3220 with a grade of C or higher and ISMG 2050 with a grade of 'C-' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6054. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4070 - Management Accounting

Designed to provide students with a foundation in management accounting models and information, with emphasis on management decision making uses of accounting information. (Not recommended for candidates planning to sit for the CPA examination.) Prereq: ACCT 2200 and 2220 or equivalent with a grade of a 'C' or better. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Note: Students who have taken ACCT 3320 or its equivalent may not take this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4240 - Advanced Financial Accounting

Advanced financial accounting concepts and practices with emphasis on accounting for partnerships, business combinations and consolidations. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 3230 or ACCT 6030 or ACCT 6032 each with a grade of C or higher, or department consent. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4280 - Accounting Ethics

This course examines the ethical responsibilities of accounting professionals from a personal and professional perspective, including examples of ethical dilemmas accounting professionals confront. The course utilizes various authoritative codes of conduct, professional standards and

applied ethical theory as ethical guidance for auditors, accountants, tax professionals, and accounting management. A variety of case studies are employed to give students practice in developing a decision making approach in dealing with difficult ethical scenarios. Prereq ACCT 4620. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4282 - Capitalism, Accounting and Ethical Choices

Examines the development of the U.S. economy from 1850 to today with emphasis on the ethics of accounting, capitalism, and government controls. Prereq: ACCT 3220 with a C or higher or permission. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4330 - Managerial Accounting Problems and Cases

Critical analysis of advanced topics in managerial accounting. Considerable use of cases and current readings. Prereq: Completion of ACCT 3320 with a grade of 'C'. Strictly enforced. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4370 - International Accounting

Designed to expose students to the international aspects of accounting and financial management. Includes discussion of some of the different financial accounting practices across countries; financial statement analysis in a global context, international auditing practices and procedures, international tax implications and the implications of operating within the regulations of the Foreign Corrupt Practices Act, the European Union, North American Free Trade Agreement and General Agreement on Tariffs and Trade. Prereq: Completion of ACCT 3220 with a grade of 'C' or better. Strictly enforced. Cross-listed with ACCT 6370 and INTB 6370. Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4410 - Fundamentals of Federal Income Tax

Provisions and procedures of federal income tax laws and requirements affecting individuals and business organizations, including problems of tax planning and compliance. Note: Students cannot receive credit for both ACCT 4410 and ACCT 6140. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 3220 with a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6140. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4420 - Taxation of Business Entities

A federal tax course stressing tax planning issues affecting corporations (both C corporations and S corporations) and partnerships. Note: A grade of C or higher must be earned to receive credit for the CPA license. Note: Students cannot receive credit for both ACCT 4420 and ACCT 6150. Cross listed with ACCT 6150. Prereq: ACCT 2220 with a C- or higher. Prereq: ACCT 4410 with a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4442 - Accounting: Professional Research and Communications

This course provides students with a structured approach to researching and communicating practice-oriented financial accounting, auditing, and tax-related issues. After completing this course, students should be able to effectively: (1) Communicate (both oral and written) solutions to practice-oriented financial accounting, auditing, and tax-related issues. (2) Navigate through U.S. and international accounting, auditing, and tax authorities. (3) Conduct systematic research for all types of accounting-related problems then reach and communicate efficient conclusions using a variety of techniques. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Prereq: ACCT 4620 and ACCT 4410 both with a grade of C or higher. Cross-listed with ACCT 6442. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4490 - Experiential Learning

Designed to provide practical knowledge on developing a professional practice in accounting or financial management. Topics: Marketing, operating a professional practice. Lectures, guest speakers student projects. Prereq: ACCT 3220 completed with a 'C' or better, or permission of instructor. Cross-listed with ACCT 6490. Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4520 - Oil and Gas Accounting

The Oil and Gas Accounting course is designed to give students an overview of the oil and gas industry and the particular accounting issues this industry faces. The focus is on the oil and gas industry but many of the issues discussed are appropriate and applicable to all energy-related entities. This is a valuable learning experience for those interested in acquiring an understanding of the accounting issues for energy management firms in preparation for entry into public accounting. The course enjoys support from the energy industry in the form of guest speakers and project ideas. Prereq: ACCT 3220 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6520. Max Hours: 3 credits. **Semester Hours:** 3 to 3

ACCT 4620 - Auditing Theory

Auditing Theory: Focus on the professional responsibilities of CPAs, generally accepted auditing standards, and PCAOB auditing standards, with emphasis on the theory underlying the development of standards, objectives and procedures. Students cannot receive credit for both

ACCT 4620 & ACCT 6020. Note: A grade of C or higher must be earned to receive credit for the CPA license. A grade of B or higher must be earned if planning to take 6025 in the future. Prereq: ACCT 3220 and 4054 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4625 - Auditing Practice

Focus on the application of generally accepted auditing standards and PCAOB auditing standards to practice. Emphasis on procedures used by CPAs to gather and document audit evidence. Prereq: ACCT 4620 with a grade of C (2.0) or higher. Note: A grade of C or higher must be earned to receive credit for the CPA license. Note: Students cannot receive credit for both ACCT 4625 and ACCT 6025. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4780 - Accounting and Information Systems Processes and Controls

The course is designed to develop knowledge and skills used to understand and evaluate corporate accounting processes and systems. It focuses on financial and information system internal controls and the flow of corporate information through an accounting system. A financial system objective and risk assessment approach is used to present concepts and techniques for evaluating the adequacy of system processes and controls. Cross-listed with ACCT 6510, ISMG 4780, and ISMG 6510. Prereq: Completion of ACCT 2200, ACCT 2220 and ACCT 3054 with a grade of 'C' or better (strictly enforced). Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4800 - Accounting for Government and Nonprofit Organizations

Planning and control of government and nonprofit organizations. Includes program budgets, responsibility accounting and fund accounting. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 3220 with a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ACCT 6080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4840 - Independent Study

Restricted to undergraduate Business majors with junior standing or higher. Max hours: 8 Credits. **Semester Hours:** 1 to 8

ACCT 4900 - Professional Certification in Accounting

This course will prepare students for the Uniform Certified Public Accountant Examination, including the Auditing and Attestation (AUD), Business Environment and Concepts (BEC), Financial Accounting and Reporting (FAR), and Regulation (REG) sections. Topical coverage will

include a balance of most-tested topics, difficult topics, and exposure to topics not addressed in required accounting degree courses. Note: there will be a materials fee of \$1,100 for this course. All materials will continue to be available until successful passage of the CPA Exam. Note: Undergraduate Accounting students typically perform better in this class when taking it during the final semester prior to graduation. Restriction: Restricted to Undergraduate and MS Accounting students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4915 - Accounting for the Public Interest

Applies accounting knowledge and concepts in a not-for-profit organization. Student volunteers help with functions or special projects and are supervised by both faculty members and personnel from the agency to which they are assigned. Prereq: Permission of instructor. Cross-listed with ACCT 6015. Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 4950 - Special Topics

Research methods and results, special topics and professional developments in accounting. Consult the current 'Schedule Planner' for semester offerings. Prereq: Varies according to topic and instructor requirements. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ACCT 5939 - Internship

Max hours: 3 Credits. **Semester Hours:** 1 to 3

ACCT 6015 - Accounting for the Public Interest

Applies accounting knowledge and concepts in a not-for-profit organization. Student volunteers help with functions or special projects and are supervised by both faculty members and personnel from the agency to which they are assigned. Note: This class is rarely offered. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Cross-listed with ACCT 4915. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6020 - Auditing Theory

Focus on the professional responsibilities of CPAs, generally accepted auditing standards, and PCAOB auditing standards, with emphasis on the theory underlying the development of standards, objectives and procedures. Students cannot receive credit for both ACCT 4620 & ACCT 6020. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 6030 or ACCT 6031 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 4620. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6024 - Advanced Financial Accounting

Advanced financial accounting concepts and practice with emphasis on accounting for partnerships, business combinations and consolidations. Prereq: ACCT 3230 or ACCT 6030 or ACCT 6032 each with a grade of C or higher, or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 4240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6025 - Auditing Practice

Focus on the application of generally accepted auditing standards and PCAOB auditing standards to practice. Emphasis on procedures used by CPAs to gather and document audit evidence. Prereq: ACCT 6020 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Students cannot receive credit for both ACCT 4625 and ACCT 6025. Note: A grade of C or higher must be earned to receive credit for the CPA license. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6031 - Intermediate Financial Accounting I

This course is designed to provide students with a comprehensive review and understanding of financial accounting principles, procedures, and financial statements as well as the measurement of income and assets. Skills related to problem solving, analytical thinking, and writing will also be developed. NOTE: Students who have taken ACCT 3220 (or equivalent) may not receive credit for ACCT 6031. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6032 - Intermediate Financial Accounting II

Continuing the intensive coverage of financial accounting from ACCT 3220/ACCT 6031, this course covers concepts of financial accounting theory and generally accepted accounting principles not covered in 3220/6031. This typically includes detailed coverage of liabilities and equity, especially the topics of leases, deferred taxes, pensions and stock-options. Note: A grade of C or higher must be earned to receive credit for the CPA license. NOTE: Students who have taken ACCT 3230 (or equivalent) may not receive credit for ACCT 6032. Prereq: ACCT 6031 with a grade of C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 3230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6033 - Advanced Managerial Accounting

Critical analysis of advanced topics in managerial accounting. Note: This class is rarely offered. Prereq: ACCT 3320. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6054 - Accounting Information Systems

This course focuses on the analysis, design, implementation and control of accounting information systems. Emphasis is placed on primary business processes including documentation, modeling, retrieving information to support managerial decisions and controlling risks. Topics include transaction cycles, relational database modeling, data analytics and information systems risks and controls. Must earn a grade of C or better to qualify for graduation at the UG level and to receive credit for the CPA license. Prereq: ACCT 6031 or BUSN 6550 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 4054 (previously ACCT 3054). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6070 - Intermediate Cost Accounting

Cost accounting links financial and managerial accounting and emphasizes communication between accountants and managers. Topics include managerial uses of cost data for decision making, analysis of activities and cost behavior, the role of accounting in planning and control, and computer-assisted decision modelling Note: A grade of C or higher must be earned to receive credit for the CPA license. Note: STUDENTS WHO HAVE TAKEN ACCT 3320 (or equivalent) MAY NOT TAKE THIS COURSE. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 3320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6080 - Accounting for Government and Nonprofit Organizations

Nonprofit Organizations. Planning and control of government and nonprofit organizations. Includes program budgets, responsibility accounting and fund accounting. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 3220 or BUSN 6550 or ACCT 6031 each with a C or higher, or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 4800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6140 - Fundamentals of Federal Income Tax

Provisions and procedures of federal income tax laws and requirements affecting individuals and business organizations, including problems of tax planning and compliance. Note: A grade of C or higher must be earned to receive credit for the CPA license. Note: Students cannot receive credit for both ACCT 4410 and 6140. Cross-listed with ACCT 4410. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6150 - Taxation of Business Entities

A federal tax course stressing tax planning issues affecting corporations (both C corporations and S corporations) and partnerships. Note: A grade of C or higher must be earned to receive credit for the CPA license. Note: Students cannot receive credit for both ACCT 4420 and ACCT 6150. Cross-listed with ACCT 4420. Prereq: ACCT 6140 or ACCT 4410 with a grade of C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA withing the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6220 - Seminar: Corporate Financial Strategy and Controls

This course is designed to provide a comprehensive understanding of the wide ranging responsibilities of the Controller, including the timely and accurate preparation of the periodic financial statements, maintenance of an adequate records system, a comprehensive set of internal controls and budgets in order to manage and mitigate risk, how to enhance the accuracy of the company's reported financial results and ensure compliance with GAAP or IFRS. Topics also include techniques for cash forecasting, controlling and administering budgets, and developing effective long-range plans. Prereq: ACCT 6030 or ACCT 6032 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6225 - Controllership: Managerial Strategy and Benefits Analy

This course is designed to provide a comprehensive understanding of the wide ranging responsibilities of the Controller from a managerial and tax accounting perspective. Topics include establishing a cost accounting system, planning and control of manufacturing costs, business and strategic planning, mergers and acquisitions and a variety of tax related issues such as employment tax, employee vs. contractor, and choice of entity. The course will also include a discussion of benefits analysis, stock based compensation, ISO, NQSO and 83b elections. Prereq: ACCT 6220 with a grade of C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6230 - Advanced Topics in Mergers and Acquisitions

Mergers and acquisitions are often a key component of organizational strategy for growth and competitive advantage; yet empirical studies indicate many of these transactions fail to meet their intended objectives. This course prepares accounting students as financial leaders to positively influence the achievement of planned synergies and acculturation for more successful M&A transactions. Integrating perspectives from accounting and organizational development, course topics include transaction valuation, contingent consideration, and asset impairment testing to organizational systems theory and post-transaction integration. Prereq: Grade of C (2.0) or higher in ACCT 6020 or ACCT 4620 and ACCT 6070. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6250 - Seminar: Financial Accounting

Nature and origin of accounting theory and the development of postulates, principles and practices. Methodology appropriate to development and evaluation of accounting theory, with special emphasis on accepted research standards and procedures. Note: A grade of C or higher must be earned to receive credit for the CPA license. Co-req: ACCT 6032 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6260 - Seminar: Managerial Accounting

Focuses on the conceptual foundations of managerial accounting. Behavioral and quantitative approaches regarding information for decision making, planning, control, performance evaluation and other issues are investigated. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 6070 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6280 - Accounting Ethics

This course examines the ethical responsibilities of accounting professionals from a personal and professional perspective, including examples of ethical dilemmas accounting professionals confront. The course utilizes various authoritative codes of conduct, professional standards and applied ethical theory as ethical guidance for auditors, accountants, tax professionals, and accounting management. A variety of case studies are employed to give students practice in developing a decision making approach in dealing with difficult ethical scenarios. Prereq: ACCT 6031 or BUSN 6550. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6282 - Capitalism, Accounting and Ethical Choices

Examines the development of the U.S. economy from 1850 to today with emphasis on the ethics of accounting, capitalism, and government controls. Prereq: ACCT 2220 or BUSN 6550 (not strictly enforced). Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6285 - Accounting and Finance for Sustainability

Topics in accounting and finance related to business sustainability include the merits and challenges of a triple-bottom-line perspective, mandatory and voluntary reporting, environmental liability measurement and disclosure, emissions trading, green investments, shareholder activism, microfinance, and socially responsible investing. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6290 - Management Control Systems

Focuses on the design and use of control systems which ensure that people in organizations behave consistently with the organizational goals. Controls for communication, motivation and performance evaluation (along with informational requirements) are stressed through analysis of cases and classroom discussion. Note: This class is rarely offered. Prereq: BUSN 6550 or equivalent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6320 - White Collar and Financial Crimes

Course provides an opportunity to examine criminal activity perpetrated by individuals and/or organizations in a position of trust. White collar and financial crimes are qualitatively different from street crimes or violent crimes, yet they are highly destructive. Cover: types of crime, social impact, prevention, detection, regulating etc. Prereq: BUSN 6550 with a C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6330 - Fraud Auditing

This course provides an introduction to and guidance for creation of an effective fraud audit program in core business systems. The fraud audit is designed specifically to detect potential fraud and is vastly different than the traditional audit. Fraud auditing focuses on proven fraud methodology that allows auditors to discover fraud versus investigating it. The course: • Explains how to create a fraud audit program • Shows auditors how to locate fraud through the use of data mining • Focuses on proven methodology for detecting fraudulent transactions • Explores fraud discovery within specific corporate F&A functions, such as disbursement, procurement, payroll, revenue misstatement, inventory, journal entries, and management override. Prereq: ACCT 6020. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6340 - Financial Statement Analysis

Financial statements are used as an information source on which to base investment, lending potential or even employment. Designed to develop skills in using, understanding, analyzing, and interpreting financial statements and to make students aware of the value and limitations of financial statement information. Note: Should take in the third semester of the graduate program. Prereq: BUSN 6550 or ACCT 6031 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6350 - Current Issues in Professional Accounting

An in-depth analysis of current issues in the accounting profession, including ethics development, and validity of standards and regulations. Prereq: ACCT 3230, ACCT 4620, ACCT 6020 or permission of instructor. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6360 - Fraud Examination

This course examines the theories and methods of the full spectrum of fraud examination including prevention, detection, investigation, and adjudication. In this course, students will explore the significant differences between fraud examination and auditing, going beyond detection into the investigative and adjudication process. Prereq: ACCT 6020 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6370 - International Accounting

Designed to expose students to the international aspects of accounting and financial management. Includes discussion of some of the different financial accounting practices across countries; financial statement analysis in a global context, international auditing practices and procedures, international tax implications and the implications of operating within the regulations of the Foreign Corrupt Practices Act, the European Union, North American Free Trade Agreement and General Agreement on Tariffs and Trade. Prereq: BUSN 6550 or equivalent. Note: Students cannot receive credit for both ACCT 6370 and INTB 6370. IFRS's are reviewed and compared with the requirements of US GAAP. Cross-listed with INTB 6370 and ACCT 4370. Prereq: ACCT 6031 or BUSN 6550. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6380 - Forensic Accounting

An examination of investigative auditing, fraud auditing, litigation support, and economic quantification of damages. Prereq: ACCT 4620 or ACCT 6020. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6400 - Taxation of C Corporations and Shareholders

This course is a study of federal income tax problems facing corporations and corporate shareholders. The course addresses introductory corporate tax issues found in Subchapter C of the Internal Revenue Code, including defining a "corporation" for federal income tax purposes; tax consequences associated with the formation of a corporation; taxation of corporate operations (including an analysis of the differences that exist between earnings and profits, dividend distributions and taxable income); corporate redemption transactions; partial

liquidations; complete liquidations; and the acquisition, sale and disposition of corporate entities in transactions governed by Sections 336(e) and 338 of the Internal Revenue Code. Prereq: ACCT 6150 with a grade of C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits.

Semester Hours: 3 to 3

ACCT 6410 - Advanced Tax for Individuals

This course is an advanced federal income tax course stressing the use of the Internal Revenue Code, Treasury regulations, case law, and administrative guidance to resolve federal income tax issues affecting individuals. Topics include items of gross income inclusion, exclusions, deductions, items of non-recognition, characterization of income, and tax rates. Prereq: Grade of C or higher in ACCT 6140 or ACCT 4410. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6442 - Accounting: Professional Research and Communications

This course provides students with a structured approach to researching and communicating practice-oriented financial accounting, auditing, and tax-related issues. After completing this course, students should be able to effectively: (1) Communicate (both oral and written) solutions to practice-oriented financial accounting, auditing, and tax-related issues. (2) Navigate through U.S. and international accounting, auditing, and tax authorities. (3) Conduct systematic research for all types of accounting-related problems then reach and communicate efficient conclusions using a variety of techniques. Prereq: ACCT 6030 or ACCT 6032 or ACCT 3230 each with a grade of C or higher, or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with ACCT 4442. Max hours: **Semester Hours:** 3 to 3

ACCT 6450 - Tax Research

This course provides a study of various methodologies used in tax research and tax planning and requires students to present their results through various forms of business communication. In particular, this course explores techniques (with an emphasis on electronic/on-line techniques) for locating and researching judicial cases, statutory materials and legislative histories, and administrative materials promulgated by the Internal Revenue Service applicable to tax-related issues and problems. Students must present their tax research results for various client-based hypothetical factual patterns in written formats, including memoranda and client letters, and through individual oral and group presentations. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6470 - Internal Auditing

Intro course for business students and CIA candidates. Topics include: IA fundamentals; IA standards; internal controls; managing the IA department; IA working papers, procedures and evidences; fraud detection and prevention; ethics; evaluation of the IA function, and Sarbanes-Oxley Act of 2002. Prereq: ACCT 4620 or ACCT 6020. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits.

Semester Hours: 3 to 3

ACCT 6480 - Partnership Taxation

This course focuses on fundamental tax issues relating to partnerships and partners arising from the formation, operation, and liquidation of partnerships. Course work includes an examination of pertinent federal income tax returns of a partnership. Prereq: ACCT 6150 with a grade of C or higher. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6490 - Experiential Learning

Designed to provide practical knowledge on developing a professional practice in accounting or financial management. Topics: Marketing, operating a professional practice. Lectures, guest speakers (if you are interested in being a guest lecturer for the class contact the instructor), and student projects. Prereq: ACCT 3220 or permission of instructor. Cross-listed with ACCT 4490. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6510 - Advanced Accounting Information Systems

The course is designed to develop knowledge and skills used to understand and evaluate corporating accounting processes and systems. Focuses on financial and information system internal controls and the flow of corporate information through an accounting system. A financial system objective and risk assessment approach is used to present concepts and techniques for evaluating the adequacy of system processes and controls. Prereq: ACCT 6054 or department consent. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6520 - Issues in Oil and Gas Accounting

The Oil and Gas Accounting course is a course designed to give students an overview of the oil and gas industry and the particular accounting issues this industry faces. The focus is on the oil and gas industry but many of the issues discussed are appropriate and applicable to all energy-related entities. This is a valuable learning experience for those interested in acquiring an understanding of the accounting issues for energy management firms in preparation for entry into public accounting. The course enjoys support from the energy industry in the form of guest speakers and project ideas. Prereq: BUSN 6550 or ACCT 3220 or permission of instructor.

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Cross-listed with ACCT 4520. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6620 - Seminar: Auditing and Other Assurance Services

A graduate seminar course providing in-depth exposure to specialized topics in auditing and other assurance services, with an emphasis on recent developments in the profession. Includes coverage of generally accepted auditing standards and PCAOB standards. Note: A grade of C or higher must be earned to receive credit for the CPA license. Prereq: ACCT 6020. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6800 - Special Topics

Research methods and results, special topics and professional developments in accounting. Consult the current 'Schedule Planner' for semester offerings as new special topics courses are frequently added. Prereq: Varies according to topics and instructor requirements. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ACCT 6840 - Independent Study

Permission of instructor required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

ACCT 6900 - Professional Certification in Accounting

This course will prepare students for the Uniform Certified Public Accountant Examination, including the Auditing and Attestation (AUD), Business Environment and Concepts (BEC), Financial Accounting and Reporting (FAR), and Regulation (REG) sections. Topical coverage will include a balance of most-tested topics, difficult topics, and exposure to topics not addressed in required accounting degree courses. Note: there will be a materials fee of \$1,100 for this course. All materials will continue to be available until successful passage of the CPA Exam. Note: Undergraduate Accounting students typically perform better in this class when taking it during the final semester prior to graduation. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ACCT 6939 - Internship/Cooperative Education

Supervised experiences involving the application of concepts and skills in an employment situation. Prereq: 15 semester hours for MS students and 21 hours for MBA students and a cumulative 3.2 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ACCT 6950 - Master's Thesis

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 8 Credits. **Semester Hours:** 1 to 8

Anthropology

ANTH 1000 - Anthropology: Past and Present

Anthropology is the study of humankind in all of its diversity and complexity. Anthropologists have traditionally approached the study from four distinct perspectives: biological, cultural, linguistic and archaeological. This course considers how anthropologists study humankind from these four perspectives and the robust picture of humanity that emerges. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 1111 - Freshman Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

ANTH 1302 - Introduction to Archaeology

Introduces the study of past cultures and their environments. Emphasis is on the scientific method, aspects of research design and analytical techniques used by archaeologists to determine chronology, taphonomy, source production areas, exchange networks, and human-environment interactions. Note: Three hours of lecture and a two-hour lab each week. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3 **Semester Hours:** 4 to 4

ANTH 1303 - Introduction to Biological Anthropology

Introduces the study of human biological evolution, both processes and outcomes, from primate ancestors to fossil hominids to contemporary human populations. Methods of obtaining and interpreting data concerning the genetic, biological and evolutionary basis of physical variation in living and skeletal populations. Note: 3 hours of lecture and a 2 hour lab each week. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1 **Semester Hours:** 4 to 4

ANTH 2102 - Culture and the Human Experience

An application of the concept of culture to several aspects of the human experience, including gender relations, emotion and personality, cognition, language, health and healing and economic behavior. In exploring these dimensions of the human experience, the course focuses on selected cultures from each of the world's major geographic areas. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3 **Semester Hours:** 3 to 3

ANTH 2400 - Exploring Culture through Social Media

Introduction to social media and analysis applied to cultural change. Focus on theories and practices of non-fiction image-making and "doing digital ethnography" to examine a range of experience and knowledge among different societies, communities, technologies, policy discourses and ourselves. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 2840 - Independent Study

Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ANTH 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Sophomore standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ANTH 3000 - Globalization, Migration and Transnationalism

Examines the cultural dynamics of globalization, including: the development of special economic zones in the global south, rural to urban migration, transnational migration, the maintenance of transnational ties, and cross-border social formations. Reviews the dynamics of globalization through case studies and film. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3006 - Sustainable Development and Equity

Investigates theories, policies and discourses of development and equity and their relationship to health, socio-environmental problems. Considers the connections between green environmental knowledge and neoliberalism, the success and failures of development along public health, economic equality, social justice and ecological lines. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3008 - Contemporary World Problems: An Anthropological Perspective

This course examines contemporary problems confronting humanity from an anthropological perspective - a historical, holistic and comparative framework that will be used to critically assess these issues and identify forces driving them. Problems to be addressed include climate and environmental change, resource depletion, and poverty and inequality. Prereq: Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3042 - Lost Worlds and Crystal Skulls

This class explores the differences between science and pseudoscience specifically within the realm of anthropology. Scientific method and critical thought are employed in a way that trains students to question and recognize the difference between fact and fiction in data. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3045 - Cannabis Culture

Familiarizes students with anthropological approaches to the culture of cannabis, including medicinal and recreational. Topics: history, cultural uses, legalization, cannabis capitalism, health effects, race and inequality, regulatory policies, retailing and consumption. Ethnographic research for data collection emphasized. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3101 - Foundations of Cultural Anthropology

Covers current theories in cultural anthropology and discusses the nature of field work. Major schools of thought and actual field studies are explored with an emphasis on anthropological data gathering, analysis and writing. Prereq: ANTH 2102 with a C- or higher. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3121 - Language, Culture, and Communication

Definitions of language and communication and their relationship to human behavior, thought and culture. The classification of languages, linguistic universals, language acquisition, multilingualism, and nonhuman communication, with consideration of the evolutionary implications of such studies. Prereq: ANTH 2102 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3142 - Cultural Diversity in the Modern World

An in-depth analysis of the phenomena of culture and application of the culture concept to understanding cultural diversity in the modern world. Applies the concept of culture to several basic aspects of human social life, for example: social class and gender relations, ethnicity, racism and sexism, education, health and economic behavior. Students explore these issues in the context of case studies of particular groups and/or communities, focusing primarily on the diversity of cultural expression in contemporary U.S. Note: This course may count for the

International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3150 - Special Topics in Medical Anthropology

Seminar series on current issues in medical anthropology. Faculty offer a range of different courses, including the political economy of drugs, health and human rights, and reproductive health. Prereq: ANTH 2102 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3200 - Human Migration: Nomads, Sojourners, and Settlers

Explores the relationship between human migration, voluntary and forced and social organization and culture in the modern world. Case studies include pastoralists, foragers, refugees, immigrants, sojourners and settlers and their impact on health, culture, identity, ethnicity, tradition and nationality. Cross-listed with PBHL 3200. Max hours: 3 Credits.

Semester Hours: 3 to 3

ANTH 3202 - Anthropology of Health Care Policy

Uses the tools and methods of cultural anthropology to analyze health care reform in the U.S. We examine analyses of the current health care system, debates over its reform, compare the US health care system to that of health care systems worldwide. Max hours: 3 Credits.

Semester Hours: 3 to 3

ANTH 3210 - Urban Food Systems and Sustainability

Urbanites are increasingly removed from the complex of factors that provide us food. Being concerned about sustainability, we need to understand the complex webs in food systems and their implications for the health and natural systems. This problem-based course will wrestle with urban food systems organized to address the 3 E's of sustainability: environmental, economic, and equity. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3250 - Climate, Environment and Society

This course will engage social theory and case studies to examine Climate Change, its impact and consequences for human life, and what communities and societies are doing to address it. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3301 - World Prehistory

Explores of 3.5 million years of human cultural development that examines the prehistory of Africa, Asia, Europe and the Americas. Patterns and processes that underlie the earliest hominid expansion out of Africa, tool use, origins of fire, the peopling of the Americas, the development of metallurgy, the domestication of plants and animals and the rise of cities and

the state are examined. Emphasis is on both regional developments and landmark projects that have helped clarify prehistory. Note: Introductory course in Archaeology (ANTH 1302) recommended. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3310 - Colorado Archaeology

A survey of the prehistoric and protohistoric peoples of the five major culture areas of Colorado: the Four Corners, Great Basin, Rocky Mountains, High Plains, and Front Range. Of special interest will be the study of the initial peopling of Colorado, economic and political organization, ethnic interaction and the history of archaeological work in the region. Prereq: ANTH 1302 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3315 - North American Archaeology

Course provides a survey of the prehistoric and historic archaeology of the United States, Canada and Northern Mexico. Current knowledge of the subject and current debates are discussed. Prereq: ANTH 1302 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3316 - History of Human Environmental Impacts

Humans exist as active members of an ecosystem. There is increasing awareness that human actions have changed the environment and continue to do so. While ecologists, climatologists, and engineers work to address current and future environmental problems, the discipline of archaeology can provide a time depth and crosscultural breadth of perspective on how such issues have impacted human societies. This course will investigate and critically assess the claim that environmental and ecological factors have played a key role in the dissolution of once thriving civilizations. Examples will be drawn from across time and space, specifically emphasizing the archaeological record and the perspective it provides on a problem that is of critical relevance today. In this course students will: 1) Learn how humans have engaged with their environments over the course of our species' evolutionary history; 2) Critically assess contemporary discussions of collapse and ecocide by contextualizing human environment interactions within the frameworks of resilience, niche construction, and ecosystem engineering; 3) Use 'lessons from the past' to inform contemporary ecological debates; 4) Objectively evaluate the factual basis of various claims made about how humans affect, have affected, and likely will affect their environments; 5) Actively engage with the community to build sustainable gardens. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3320 - Southwestern Archaeology

Considers the origins, characteristics, and interrelationships of the major culture areas in the American southwest, including the Anasazi, Hohokam, Mogollon, Sinagua and Northern Mexico. Note: ANTH 1302 recommended but not required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3330 - Topics in Archaeology

A flexible format for addressing specific topics in archaeology. Examples include the archaeology of the Great Plains, the Mediterranean Region, etc. Prereq: ANTH 2102 with a C- or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ANTH 3410 - Anthropology of Work

Explores the culture of workforces and workplaces. Ethnographic methods and collaborative research practices comprise the framework of the course to examine people, occupations and work cultures engaged in production and consumption of commodities at local and global levels. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3420 - Anthropology and Politics of the Global Tobacco Epidemic

Examines anthropological perspectives on tobacco, tobacco-related health policy making, and cigarette manufacturers and leaf-buying companies in the global tobacco epidemic. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3500 - Human Osteology

Provides in-depth knowledge of human osteology, including the following topics: skeletal anatomy; age, sex and stature determination; skeletal trauma/pathology; and taphonomy. Recitation component provides hands-on experience with skeletal material. Prereq: ANTH 1303 with a C- or higher. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

ANTH 3512 - Human Evolution

Provides an overview of the fossil and archaeological evidence for human origins. Theory and method in paleoanthropology is emphasized. The goal is to outline current knowledge of human biological evolution and the lifeways of our evolutionary relatives. Prereq: ANTH 1303 with a C- or higher. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3550 - Forensic Anthropology

Provides an introduction to methods used in forensic anthropology for investigating human remains in cases of medicolegal importance, including recovery, attribution of demographic characteristics, analysis of disease and trauma and determination of personal identity. Prereq: ANTH 1303 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3560 - Human Variation and Adaptation

This course explores the nature of modern human biological variation and adaptation. We address the evolutionary and biological theory that informs our study of contemporary human

anatomy and physiology. Topics covered include, the nature vs. nurture debate, variation in skin pigmentation and the concept of "race", skeletal adaptations, adaptations to extreme environments and sexbased variation. Term offered: every other year. Prereq: ANTH 1303 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3590 - Primate Behavior Research at the Zoo

Students will review information on primates, learn about data collection models, design a behavior observation project on captive primates, collect and analyze behavior data, write and present a formal scientific paper. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3666 - Anthropology of Death

The primary goal of the course is to identify and understand the range of human expression through the treatment of human remains in anthropological literature with focus on burials, mortuary practices, and associated rituals. Along with more theoretical papers, specific case studies will be used to address a variety of topics and issues, such as historic and prehistoric social organization, bio-archaeology, cannibalism, human sacrifice, mummification, the ethics of studying human remains, and the treatment of pets in prehistory. The time range that we will cover in the course will span from the Neolithic to the early 20th century, and numerous cultures from all parts of the globe will be our subject matter. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 3700 - Current Topics in Anthropology

This undergraduate course offers a flexible format for addressing specific topics of special interest in anthropology, such as: aging, race and prejudice, class, warfare and aggression, ethnicity, myth and folklore, language and communication, Colorado prehistory and topics in evolutionary theory. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ANTH 3910 - Cross-Cultural Field Experience

An intensive contact with another culture through supervised travel in the U.S. or in a country other than the United States. Written reports required. Note: Class includes pre-trip orientation lectures; in-country lectures by local resource people and supervising CU-Denver faculty. Max hours: 6 Credits. **Semester Hours:** 3 to 6

ANTH 3939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ANTH 4000 - Special Topics in Anthropology

Designed to give students a chance to evaluate critically some practical or theoretical problem under faculty supervision and to present results of their thinking to fellow students and instructors for critical evaluation. Prereq: Junior standing or higher. Cross-listed with ANTH 5000. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 4

ANTH 4010 - Medical Anthropology: Global Health

This course is concerned with the underlying biological and cultural determinants of health throughout the human life cycle in global and cross-cultural perspective. Note: The first of a two-course sequence in medical anthropology and global health studies; the second is ANTH 4020. Prereq: Junior standing or higher. Cross-listed with ANTH 5014. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4030 - Ethnobiology

Considers the relationship between human society and plants and animals in the natural world. Primary focus on the perception and cognitive organization of the environment and how that affects the definition and use of plants and animals as resources. Prereq: Junior standing or higher. Cross-listed with ANTH 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4040 - Anthropology of Food and Nutrition

Examines the myriad relationships between food as a biological necessity and eating as a socially and culturally conditioned activity. Takes a biocultural perspective that considers not only the tremendous variety of foods we eat, but also the complex meanings and importance attached to food and eating. Prereq: Junior standing or higher. Cross-listed with ANTH 5040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4050 - Quantitative Methods in Anthropology

Surveys the ways of deriving meaning from anthropological data by numerical means, including, but not confined to basic statistical procedures. Prereq: Junior standing or higher. Cross-listed with ANTH 5053. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4060 - Evolutionary Medicine

Evolutionary medicine is a relatively new approach for understanding patterns of human health and disease. In this course, students will learn how human evolutionary history has shaped our susceptibility and resistance to both chronic and infectious diseases. Prereq: ANTH 1303 with a C- or higher. Cross-listed with ANTH 5060 and PBHL 4060. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4070 - Culture of Development and Globalization

Anthropological critiques of development and globalization point out that they have occurred without regard for the diversity of human culture and human need. Beginning with this analysis, this course goes one step further by examining culture and values of development and how they affect the way development gets done. Note: students should consult with the instructor prior to enrolling in this course. Prereq: Junior standing or higher. Cross-listed with ANTH 5070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4080 - Global Health Practice

A travel-study course that provides students the opportunity to work on global health issues in the context of a supervised internship experience. In addition to a formal internship placement or directed research opportunity, students attend formal lectures and participate in seminars devoted to addressing those health issues most relevant to the country in which the course is being taught. Prereq: Junior standing or higher. Cross-listed with ANTH 5080 and PBHL 4080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4090 - Drug Syndemic

Psychotropic drugs, both legal and illicit, are a predominant part of our everyday lives. This course examines their use and meaning within cultures, and the social, political and economic issues that surround their production, use and misuse. Prereq: Junior standing or higher. Cross-listed with ANTH 5090 and PBHL 4090. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4121 - Zooarchaeology

Introduction to the theory and methods of zooarchaeology through lectures, readings, and hands-on lab work identifying and analyzing mammalian skeletal material. Students will learn what mammalian remains indicate about biological and cultural evolution of humans. Cross-listed with ANTH 5121. Prereq: ANTH 1303 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4150 - Human Biocultural Adaptability

The chief concern of this course is the relationship between ourselves and our surroundings and the very immediate ways the environments in which we live affect us. The view is of ourselves as a part of, not apart from, these environments. Prereq: Junior standing or higher. Cross-listed with ANTH 5150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4170 - Culture and the Environment

Examines the historical origins of Western and non-Western ideas of the environment and the place of people within it. The imposition of Western ideas on non-Western groups regarding

environmental policy is also examined, with special attention given to practices of conservation, development and transnational monetary policy. Prereq: Junior standing or higher. Cross-listed with ANTH 5170. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4180 - The Nature of Power

Introduces the major theories of power used in contemporary anthropology, with an emphasis on cross-cultural perspectives. Explores how power is defined, determined and exercised globally and locally and how different systems of power articulate with one another. Prereq: Junior standing or higher. Cross-listed with ANTH 5180. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4200 - Gender in Cross-Cultural Perspective

A comparative analysis of gender-based status and social roles of women and men, with women's status and roles emphasized due to their near-universal construction as the "Other" sex. Examines in cross- and sub-cultural context the relations among women's status and their subsistence and reproductive activities; and the division of labor by sex, ideology and political economy. Prereq: Junior standing or higher. Cross-listed with ANTH 5200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4230 - Anthropology and Community Based Participatory Research

The seminar explores anthropological critiques, knowledge production and multi-media approaches to community based participatory research (CBPR) such as photovoice and digital storytelling to understand the history of CBPR and analyze partnerships between university researchers and community representatives. Cross-listed with ANTH 5230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4260 - Human Reproductive Ecology

Considers the determinants of fertility variation within and among traditional human societies. Biocultural and ecological perspectives on pubertal timing, marriage patterns, birth seasonality, duration of birth intervals and reproductive senescence. Prereq: Junior standing or higher. Cross-listed with ANTH 5260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4270 - Anthropology of the Body

Explores how society, through culture, creates collective and individual bodies; embodied experience across the life course; and the body as an expression of social power, bodily modification and adornment. Note: ANTH 2102 or ANTH 3101 are recommended be taken before this course for undergraduate students. Cross-listed with ANTH 5270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4290 - Anthropology and Public Health

"This course critically explores anthropological approaches to public health problems. Through a number of key issues and case studies, we examine how public health practice can be enhanced through anthropological research, theory and methodology. Prereq: Junior standing or higher. Cross-listed with ANTH 5290. Max hours: 3 Credits." **Semester Hours:** 3 to 3

ANTH 4300 - Migrant Health

This course examines health issues associated with transnational migration from an anthropological point of view. Drawing upon case studies, we examine the health of migrant communities in both host and sending nations. Prereq: Junior standing or higher. Cross-listed with ANTH 5300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4320 - Archaeology of Mexico and Central America

Surveys the major prehistoric and protohistoric cultures and societies of that area of Mexico and Central America identified with the evolution of Meso-American civilization. Major topics include early human colonization of the Americas, the domestication of plants and animals, the emergence of regionally-based cultures and societies, trade and exchange and the evolution of urbanism and the state. Primary emphasis on such ancient cultures and societies as those of the Olmec, Zapotec, Maya, Teotihuacan, Toltec and Aztec. Prereq: Junior standing or higher. Cross-listed with ANTH 5320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4330 - Lithic Analysis

Examines the theoretical basis and methodological tools used by archaeologists in the analysis of prehistoric stone tools. Topics of discussion include the mechanics of stone fracture, typologies, use wear analysis and core reduction techniques. Prereq: Junior standing or higher. Cross-listed with ANTH 5330. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4350 - Anthropology of Globalization

This course provides an overview of anthropological contributions to the study of globalization. Particular attention is devoted to: transformations in global capitalism, state and immigration policy, transnational families, health and transnationalism. Prereq: Junior standing or higher. Cross-listing ANTH 5350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4380 - Archaeology of Hunters-Gatherers

Explores the theory and methods used by archaeologists to investigate prehistoric hunter gatherers. Topics of concern include mobility, subsistence, procurement, and socio-political organization. Prereq: Junior standing or higher. Cross-listed with ANTH 5380. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4390 - Laboratory Methods in Archaeology

Methods and theories of archaeology are used to scrutinize the collection and interpretation of data and the relationships of archaeology to other disciplines. Core materials emphasize the critique of basic archaeological assumptions. Note: Course content varies slightly each time it is offered, in response to student needs and the availability of projects (e.g., laboratory work, urban excavation, survey and mapping). May be repeated for credit when topics change. Prereq: Junior standing or higher. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4400 - Archaeology of Power and Inequality

Addresses inequality and power through a long-term archaeological and theoretical perspective. Discusses explanations for the origins of power and inequality and their role in early small-scale societies and emerging complex politics. Prereq: Junior standing or higher. Cross-listed with ANTH 5400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4440 - Museums in the 21st Century

This is an advanced course on natural history/anthropology museums. It will examine practical issues facing museums, and consider the complex questions that museums raise. The class includes lectures, discussions, and hands-on collection work, and exhibit/ outreach development. Cross-listed with ANTH 5440. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4450 - Development and Conservation: Contemporary Issues

Applies the theoretical paradigms of political ecology to contemporary issues of sustainable development. Case studies are chosen illustrating topics based on faculty expertise and student interaction. The first part of the course presents theoretical perspectives relevant to the chosen topic. In the second half, students participate in directed problem solving activities. Prereq: Junior standing or higher. Cross-listed with ANTH 5450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4460 - Development and Conservation: Theory and Practice

Examines the praxis of anthropological knowledge of human ecosystem interaction and development of economic opportunities. Issues of biodiversity, resource conservation, sustainable development and globalization are studied. Prereq: Junior standing or higher. Cross-listed with ANTH 5460. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4500 - Advanced Issues in Human Evolution

This flexible course offers an advanced treatment of issues in human biological evolution. Topics may emphasize morphological evolution, behavioral evolution, the environment of

human evolution, non-human primate comparative information. Prereq: Junior standing or higher. Cross-listed with ANTH 5500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4550 - Primate Comparative Anatomy

Examines human and non-human primate anatomical diversity. Students learn primate anatomy and the morphological differences among species. Explanations for the evolutionary origins of differences are reviewed, focusing on evolutionary theory, comparative methods and biomechanics. Prereq: Junior standing or higher. Cross-listed with ANTH 5550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4560 - Human Ecology

Studies demographic and ecological variables as they relate to human populations. Aspects of natural selection, overpopulation and environmental deterioration are considered. Prereq: Junior standing or higher. Cross-listed with ANTH 5560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4570 - Landscape Archaeology

Introduces spatial archaeology through intrasite analysis and regional studies. Methods treated include site location and quantitative spatial organization. Theoretical topics include definitions of community, ancient urbanism and the impact of subsistence and politics on relations to the landscape. Prereq: Junior standing or higher. Cross-listed with ANTH 5570. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4580 - Neanderthals and the Origin of Modern Humans

Focuses on the human fossil record for the taxon *Homo sapiens*, including the earliest members of this group ("early" or "archaic" *Homo sapiens*), the Neanderthals and so-called "anatomically modern" *Homo sapiens*. The goal of the course is to survey the major issues within the area of modern human origins, and to learn about the evolutionary relationships, lifeways and behaviors of these groups. Prereq: Junior standing or higher. Cross-listed with ANTH 5580. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4590 - Primate Behavior

Studies nonhuman primate behavior with emphasis on understanding social behavior, ecology and issues related to human evolution. Prereq: Junior standing or higher. Cross-listed with ANTH 5590. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4600 - Medical Anthropology

Introduces students to the theories and concepts of medical anthropology, the study of human health and illness. Explores conceptions of the body, modalities of healing, the clinical encounter, and new medical technologies. Prereq: Junior standing or higher. Cross-listed with ANTH 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4640 - Darwinian Approach to Human Behavior

The evolution of human behaviors from a Darwinian perspective, focusing on the natural selection of behaviors that maximize reproductive success. Includes topics such as male and female reproductive strategies, female mate choice, male violence and resource acquisition and control. Prereq: Junior standing or higher. Cross-listed with ANTH 5640. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4800 - Special Topics in Medical Anthropology

Seminar series on current issues in medical anthropology. Faculty offer a range of different courses, including the political economy of drugs, health and human rights, and reproductive health. Prereq: Junior standing or higher. Repeatable. Cross-listed with ANTH 5800. Max hours: 9 Credits. **Semester Hours:** 3 to 9

ANTH 4810 - Integrating Anthropology

Designed to build on specialized course work in the subdisciplines of anthropology, this course emphasizes the basic concepts that integrate and unite the discipline and give it unique perspective. These are the concepts of culture, adaptation and human evolution. In the last several weeks of the course, students consider the applicability of the anthropological perspective to specific human issues. Note: Centers on the critical examination and discussion of presentations made by department faculty and graduate students. Note: this course assumes that students have completed course work equivalent to a minor in anthropology. Prereq: Junior standing or higher. Cross-listed with ANTH 5810. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 4840 - Independent Study

Directed study based on a specific subfield of anthropology. Note: Permission of instructor required. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ANTH 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ANTH 4910 - Field Experience in Archaeology

Students participate in archaeological field research and data recovery and conduct laboratory analysis of materials recovered in the field. Emphasis is placed on excavation technique and accuracy of record keeping. Prereq: Junior standing or higher. Cross-listed with ANTH 5910. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 6

ANTH 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 9

ANTH 5000 - Special Topics in Anthropology

Designed to give students a chance to evaluate critically some practical or theoretical problem under faculty supervision and to present results of their thinking to fellow students and instructors for critical evaluation. Prereq: Permission of instructor. Restriction: Restricted to Anthropology graduate students. Cross-listed with ANTH 4000. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 6

ANTH 5014 - Medical Anthropology: Global Health

This course is concerned with the underlying biological and cultural determinants of health throughout the human life cycle in global and cross-cultural perspective. Note: The first of a two-course sequence in medical anthropology and global health studies; the second is ANTH 5024. Prereq: Graduate standing. Cross-listed with ANTH 4010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5030 - Ethnobiology

Considers the relationship between human society and plants and animals in the natural world. Primary focus on the perception and cognitive organization of the environment and how that affects the definition and use of plants and animals as resources. Note: this course assumes that students have completed introductory coursework in anthropology and/or biology. Prereq: Graduate standing. Cross-listed with ANTH 4030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5053 - Quantitative Methods in Anthropology

Surveys the ways of deriving meaning from anthropological data by numerical means, including, but not confined to basic statistical procedure. Note: this course assumes that students have completed a college-level algebra course. Prereq: Graduate standing. Cross-listed with ANTH 4050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5060 - Evolutionary Medicine

Evolutionary medicine is a relatively new approach for understanding patterns of human health and disease. In this course, students will learn how human evolutionary history has shaped our susceptibility and resistance to both chronic and infectious diseases. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4060 and PBHL 4060. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5070 - Culture of Development and Globalization

Anthropological critiques of development and globalization point out that they have occurred without regard for the diversity of human culture and human need. Beginning with this analysis, this course goes one step further by examining culture and values of development and how they affect the way development gets done. Note: students should consult with the instructor prior to enrolling in this course. Prereq: Graduate standing. Cross-listed with ANTH 4070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5080 - Global Health Practice

A travel-study course that provides students the opportunity to work on global health issues in the context of a supervised internship experience. In addition to a formal internship placement or directed research opportunity, students attend formal lectures and participate in seminars devoted to addressing those health issues most relevant to the country in which the course is being taught. Note: this course assumes that students have completed HBSC/ANTH 4010/5014, HBSC/ANTH 4020/5024, HLTH 6070 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4080 and PBHL 4080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5121 - Zooarchaeology

Introduction to the theory and methods of zooarchaeology through lectures, readings, and hands-on lab work identifying and analyzing mammalian skeletal material. Students will learn what mammalian remains indicate about biological and cultural evolution of humans. Cross-listed with ANTH 4121. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5200 - Gender in Cross-Cultural Perspective

A comparative analysis of gender-based status and social roles of women and men, with women's status and roles emphasized due to their near-universal construction as the "other" sex. Examines, in cross- and sub-cultural context, the relations among women's status and their subsistence and reproductive activities; and the division of labor by sex, ideology and political economy. Prereq: Graduate standing. Cross-listed with ANTH 4200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5230 - Anthropology and Community Based Participatory Research

The seminar explores anthropological critiques, knowledge production and multi-media approaches to community based participatory research (CBPR) such as photovoice and digital storytelling to understand the history of CBPR and analyze partnerships between university researchers and community representatives. Prereq: Graduate standing. Cross-listed with ANTH 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5260 - Human Reproductive Ecology

Considers the determinants of fertility variation within and among traditional human societies. Biocultural and ecological perspectives on pubertal timing, marriage patterns, birth seasonality, duration of birth intervals and reproductive senescence. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5270 - Anthropology of the Body

Explores how society, through culture, creates collective and individual bodies; embodied experience across the life course; and the body as an expression of social power, bodily modification and adornment. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ANTH 4270. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5290 - Anthropology and Public Health

This course critically explores anthropological approaches to public health problems. Through a number of key issues and case studies, we examine how public health practice can be enhanced through anthropological research, theory and methodology. Prereq: Graduate standing. Cross-listed with ANTH 4290. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5300 - Migrant Health

This course examines health issues associated with transnational migration from an anthropological point of view. Drawing upon case studies, we examine the health of migrant communities in both host and sending nations. Prereq: graduate standing. Cross-listed with ANTH 4300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5320 - Archaeology of Mexico and Central America

Surveys the major prehistoric and protohistoric cultures and societies of that area of Mexico and Central America identified with the evolution of Meso-American civilization. Major topics include early human colonization of the Americas, the domestication of plants and animals, the emergence of regionally-based cultures and societies, trade and exchange and the evolution of urbanism and the state. Primary emphasis on such ancient cultures and societies as those of the

Olmec, Zapotec, Maya, Teotihuacan, Toltec and Aztec. Note: this course assumes that students have completed an introductory archaeology course. Prereq: Graduate standing. Cross-listed with ANTH 4320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5330 - Lithic Analysis

Examines the theoretical basis and methodological tools used by archaeologists in the analysis of prehistoric stone tools. Topics of discussion include the mechanics of stone fracture, typologies, use wear analysis and core reduction techniques. Note: this course assumes that students have completed ANTH 1302 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4330. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5350 - Anthropology of Globalization

This course provides an overview of anthropological contributions to the study of globalization. Particular attention is devoted to: transformations in global capitalism, state and immigration policy, transnational families, health and transnationalism. Note: previous coursework in anthropology is strongly recommended for success in this course. Prereq: Graduate standing. Cross-listing ANTH 4350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5380 - Archaeology of Hunters-Gatherers

Explores the theory and methods used by archaeologists to investigate prehistoric hunter gatherers. Topics of concern include mobility, subsistence, procurement, and socio-political organization. Note: this course assumes that students have completed ANTH 1302 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4380. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5400 - Archaeology of Power and Inequality

Addresses inequality and power through a long-term archaeological and theoretical perspective. Discusses explanations for the origins of power and inequality and their role in early small-scale societies and emerging complex politics. Note: this course assumes that students have completed ANTH 1302 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5440 - Museums in the 21st Century

This is an advanced course on natural history/anthropology museums. It will examine practical issues facing museums, and consider the complex questions that museums raise. The class includes lectures, discussions, and hands-on collection work, and exhibit/ outreach development. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ANTH 4440. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5500 - Advanced Issues in Human Evolution

This flexible course offers an advanced treatment of issues in human biological evolution. Topics may emphasize morphological evolution, behavioral evolution, the environment of human evolution, non-human primate comparative information. Prereq: Graduate standing. Cross-listed with ANTH 4500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5530 - Anthropological Genetics

An advanced survey of molecular and population genetics and their applications in anthropology. Topics vary, including but not limited to: genetic epidemiology, genetic distance studies, behavioral genetics, developmental genetics, sociobiology, and use of mitochondrial DNA to reconstruct population histories. Emphasis is on applications of new technology and methodology, as well as new genetic paradigms replacing classical models of genetic causation. Note: this course assumes that students have completed undergraduate coursework in biological anthropology or genetics. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5550 - Primate Comparative Anatomy

Examines human and non-human primate anatomical diversity. Students learn primate anatomy and the morphological differences among species. Explanations for the evolutionary origins of differences are reviewed, focusing on evolutionary theory, comparative methods and biomechanics. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5560 - Human Ecology

Studies demographic and ecological variables as they relate to human populations. Aspects of natural selection, overpopulation and environmental deterioration are considered. Note: this course assumes that students have a background in biological or physical anthropology. Prereq: Graduate standing. Cross-listed with ANTH 4560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5570 - Landscape Archaeology

Introduces spatial archaeology through intrasite analysis and regional studies. Methods treated include site location and quantitative spatial organization. Theoretical topics include definitions of community, ancient urbanism and the impact of subsistence and politics on relations to the landscape. Note: this course assumes that students have completed ANTH 1302 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4570. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5580 - Neanderthals and the Origin of Modern Humans

Focuses on the human fossil record for the taxon *Homo sapiens*, including the earliest members of this group ("early" or "Archaic" *Homo sapiens*), the Neanderthals and so-called "Anatomically modern" *Homo sapiens*. The goal of the course is to survey the major issues within the area of modern human origins, and to learn about the evolutionary relationships, lifeways and behaviors of these groups. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4580. Max hours: 3 Credits.

Semester Hours: 3 to 3

ANTH 5590 - Primate Behavior

Studies nonhuman primate behavior with emphasis on understanding social behavior, ecology and issues related to human evolution. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4590. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5600 - Medical Anthropology

Introduces students to the theories and concepts of medical anthropology, the study of human health and illness. Explores conceptions of the body, modalities of healing, the clinical encounter, and new medical technologies. Prereq: Graduate standing. Cross-listed with ANTH 4600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5640 - Darwinian Approach to Human Behavior

The evolution of human behaviors from a Darwinian perspective, focusing on the natural selection of behaviors that maximize reproductive success. Includes topics such as male and female reproductive strategies, female mate choice, male violence and resource acquisition and control. Note: this course assumes that students have completed ANTH 1303 or equivalent. Prereq: Graduate standing. Cross-listed with ANTH 4640. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5800 - Special Topics in Medical Anthropology

Seminar series on current issues in medical anthropology. Faculty offer a range of different courses, including the political economy of drugs, health and human rights, and reproductive health. Prereq: graduate standing. Repeatable. Cross-listed with ANTH 4800. Max hours: 9 Credits. **Semester Hours:** 3 to 9

ANTH 5810 - Integrating Anthropology

Designed to build on specialized course work in the subdisciplines of anthropology, this course emphasizes the basic concepts that integrate and unite the discipline and give it unique

perspective. These are the concepts of culture, adaptation and human evolution. In the last several weeks of the course, students consider the applicability of the anthropological perspective to specific human issues. Note: Centers on the critical examination and discussion of presentations made by department faculty and graduate students. Restriction: Restricted to Anthropology graduate students. Cross-listed with ANTH 4810. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 5840 - Independent Study

Directed study based on a specific subfield of anthropology. Prereq: Permission of instructor required. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

ANTH 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ANTH 5910 - Field Experience in Archaeology

Students participate in archaeological field research and data recovery and conduct laboratory analysis of materials recovered in the field. Emphasis is placed on excavation technique and accuracy of record keeping. Note: this course assumes that students have a background in archaeology. Prereq: Graduate standing. Cross-listed with ANTH 4910. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 6

ANTH 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ANTH 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Max hours: 9 Credits. **Semester Hours:** 3 to 9

ANTH 6000 - Seminar in Current Research Topics

An inquiry into current research of critical and general interest to anthropologists. Variable format. Note: students should receive permission from the instructor prior to registering for

this course. Prereq: Graduate standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ANTH 6040 - Advanced Topics in Medical Anthropology

A flexible seminar format for dealing with topics of special interest in medical anthropology on an advanced graduate level. Topics to be considered vary from semester to semester. Examples include high altitude adaptation, anthropological perspectives on substance abuse, epidemiology, environmental and occupational health, the health consequences of cultural change and cross-cultural psychiatry. Note: Topics vary from semester to semester. Note: students should receive permission from the instructor prior to registering for this course. Prereq: Graduate standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

ANTH 6041 - Human Genetics: Legal, Ethical and Social Issues

Examines legal, ethical and social issues that have come about with advances in human genetics. Topics include privacy, informed consent, discrimination, forensics, medical malpractice and property rights. Prereq: Graduate standing. Cross-listed with HBSC 6320 and 7320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6063 - Qualitative Research Design and Methods

Much of the data collected in the social sciences is interview and text-based. This course explores methods for collecting and analyzing these data and theoretical paradigms that underlie these methods. Restriction: Restricted to Anthropology graduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6103 - Current Theory in Ethnography

An in-depth inquiry into important theories in cultural anthropology through extensive primary source reading. Practice in formulating theory, critical thinking and theoretical writing are emphasized. Note: First course in a two-course required graduate sequence. Note: this course assumes that students have completed undergraduate coursework in cultural anthropology. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6133 - Anthropological Perspectives on Language

An intensive introduction to linguistic anthropology. Following a brief survey of technical linguistics, focus is on: the roles of language in society; multilingualism; language and identity; language and worldview; language, gender, class and power; language as social action; and other topics. Students carry out investigations based on models from their reading, as well as responding to the theoretical approaches of the field. Note: this course assumes that students have completed undergraduate coursework in cultural anthropology. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6307 - Contemporary Perspectives in Archaeology

Explores contemporary theoretical methodological perspectives in archaeology. Structured to proceed from a survey of the history of archaeological thought based on recent retrospectives, to an analysis of works reflecting current perspectives and directions. Topics include: archaeological interpretation, classical versus scientific archaeology, versus culture-history, functionalist and materialist paradigms, ethno-archaeological and text-based studies, neo-evolutionism, interactionist models, Marxist perspectives, processual theory. Note: this course assumes that students have completed undergraduate coursework in archaeology. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6317 - Archaeological Research Design and Analysis

Examines the methods and techniques used in archaeology, including theory-building, hypothesis testing and middle range theory. Core materials emphasize the learning and critique of basic archaeological assumptions and the methods and theories used to scrutinize the collection and interpretation of data. Topics include chronometric applications and paleo-environmental reconstruction. Note: this course assumes that students have completed ANTH 6307 or equivalent. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6503 - Biological Anthropology Core: The Fossil Record

Examines the historical development and modern practice of biological anthropology, including the theoretical and methodological foundations of this field. Emphasis is placed on the evidence for human and non-human primate evolution and the processes that influenced this evolution. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6513 - Biological Anthropology Core: Modern Human Variation

Considers the theory and methods used in investigations of biological variation in contemporary human populations. This includes the biological and cultural sources responsible for creating and maintaining contemporary variation as well as their functional consequences. Methods of research design and how to write a grant and scientific articles are considered. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ANTH 6520 - Seminar: Selected Topics in Physical Anthropology

A flexible seminar format for dealing with topics of special interest in physical anthropology on an advanced graduate level. Topics vary from semester to semester. Examples include: anthropology of nutrition, paleoecology, primate evolution, field experience in paleontology, advanced osteology and advanced human ecology. Note: This course assumes that students have completed undergraduate work in biological/physical anthropology. Prereq: Restricted to Graduate and Graduate Non-Degree students. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ANTH 6840 - Independent Study: ANTH

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ANTH 6950 - Master's Thesis

Term offered: fall, spring, summer. Max hours: 6 Credits. **Semester Hours:** 1 to 6

Arabic

ARAB 1000 - Introduction to Cultures of the Arabic-Speaking World

Introduces students to the Arabicspeaking cultures of North Africa, some Asian countries, and the Gulf States, with a focus on politics, culture, economics, literature and the arts. Taught in English. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ARAB 1010 - Beginning Arabic I

Beginning course in Modern Standard Arabic (MSA) designed for students who have not had any experience with the language. Term offered: spring, fall. Max Hours: 5 Credits. **Semester Hours:** 5 to 5

ARAB 1020 - Beginning Arabic II

Beginning course in Modern Standard Arabic (MSA) designed for students who have not had any experience with the language. Note: This course assumes that students have passed ARAB 1010 or equivalent, or have taken one year of high school Arabic, or possess equivalent proficiency. A grade of C- or higher in ARAB 1010 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

ARAB 2110 - Intermediate Arabic I

Third-semester course in Modern Standard Arabic (MSA) designed for students who have had two semesters or comparable proficiency in the language. Note: This course assumes that students have passed ARAB 1020 or equivalent, or have taken two years of high school Arabic, or possess equivalent proficiency. A grade of C- or higher in ARAB 1020 is recommended for success in this course. This course is not intended for native speakers. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARAB 2120 - Intermediate Arabic II

Fourth-semester course in Modern Standard Arabic (MSA) designed for students who have had three semesters or comparable proficiency in the language. Note: This course assumes that

students have passed ARAB 2110 or equivalent, or have taken three years of high school Arabic, or possess equivalent proficiency. A grade of C- or higher in ARAB 2110 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARAB 2840 - Independent Study

Independent study for students wishing to pursue nonoffered studies in Arabic language and culture. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ARAB 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ARAB 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Architecture

ARCH 1110 - Introduction to Architecture

Introduces students to the essential ways of looking at and thinking about buildings, sites and cities, exposing students to the various perspectives, positions and practices that they will encounter in both an architecture curriculum and in architectural practice. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 1710 - Architectural Drawing: Analysis and Representation

This course explores the development of graphic skills emphasizing drawing as a means to analyze and represent architectural ideas throughout the design process. Using freehand and mechanical drawing methods students will learn the conventions and opportunities of the three architectural projections. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 2110 - Design Studio I

Introduces students to the principles of design and composition through studies of architecture's formal, spatial, and geometric systems. Students explore these using a variety of

drawing techniques including diagramming and drawings that are exploratory, analytical and developmental. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 2230 - Architectural History I

Introduces architecture and urbanism from prehistory to the mid-seventeenth century by exploring the social, cultural, technical, philosophical and aesthetic ideas that shaped buildings and other architectural and urban settings in different parts of the world. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3110 - Design Studio II

Introduces students to the expressive potential of architecture's elements and systems. Students explore techniques for translating and expressing ideas in buildings through the static, dynamic and sequential manipulation of architectural form and space. Prereq: ARCH 2110. Restriction: Restricted to undergraduate ARCH students within the College of Architecture and Planning. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 3120 - Design Studio III

Focuses on the design of buildings in their relationship to physical, natural and cultural contexts. Students explore non-formal concepts and translate them into architectural experiences that integrate program, site and climate. Prereq: ARCH 3110. Restriction: Must be an undergraduate Architecture student. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 3130 - Construction Practices: Material and Structural Systems

Provides an overview of the materials, systems, assemblies and processes that inform the design and construction of buildings, reviewing the building technologies and developing student understandings of the interrelationship between the interconnected elements and systems that define buildings and spaces. Prereq: PHYS 2010/2030 and MATH 1130 are recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3230 - Architectural History II

Introduces architecture and urbanism from the mid-seventeenth century to the present, exploring the forces that shaped buildings and other architectural and urban settings in different parts of the world. Prereq: ARCH 2230. Restriction: Open to all undergraduate majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3330 - Building Systems I

Introduces the concepts of thermal behavior of buildings, climate as a determinant of building design, energy use in buildings, natural and mechanical means of environmental control,

plumbing, electrical, communication systems, water supply and sanitation systems. Recommended Prereq: MATH 1130 OR MATH 1110 & 1120; PHYS 2010/2030 OR PHYS 2311/2321. Restriction: Restricted to undergraduate ARCH students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3340 - Theory of Structures I

Introduction to the analysis and design of structural elements and focuses on the principles of statics and the strength of materials. Topics include stress determination, deflection and the behaviors of tension, compression and shear in various structural elements. Recommended Prereq: MATH 1130 OR MATH 1110 & 1120; PHYS 2010/2030 OR PHYS 2311/2321. Restriction: Restricted to undergraduate ARCH students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3430 - Construction Practices: Building Envelope

Discusses the principles and processes of building construction and introduces the major systems and assemblies that inform construction practices. Stresses the relationship between architectural concepts and emerging building technologies, teaching students how to select appropriate materials, systems and assemblies. Prereq: ARCH 3130. Restricted to sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3600 - Special Topics Cultural

Special topics in architecture studies related to cultural inquiries including theory, cultural diversity, and/or cross cultural thinking. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ARCH 3601 - History of American Architecture

This course investigates the history of architecture in the United States as a chronological survey of buildings, architects, landscapes, and urban forms and as an exploration of the social, political, economic, technological, and similar issues that inform this built environment. Prereq: ARCH 2230 and 3230. Restriction: Restricted to undergraduate ARCH students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3602 - Architecture Photography

Architecture elective in photography of space, interior, and exterior with an emphasis on design composition of architecture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3603 - Modern Architecture

Examination of that period in architecture called the Modern Movement, its proponents and its influence on the design of buildings today. Extensive readings and writings required. Prereq: ARCH 2230. Restriction: Restricted to Sophomore standing or higher. Max hours: 3 Credits.

Semester Hours: 3 to 3

ARCH 3690 - Cultural Research Abroad

Topics in architecture studies related to cultural inquiries including theory, cultural diversity, and/or cross cultural thinking in other cultures. Work shall include preparation in culture, history and language skills in other countries. Repeatable. Max Hours: 6 Credits. **Semester**

Hours: 3 to 3

ARCH 3691 - Cultural Design Abroad

Design topics in architecture studies related to cultural inquiries including design, cultural implications of design, and/or cross cultural application of design. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ARCH 3692 - International: Project Delivery

This course is the delivery of the design solution developed in ARCH 3703. Critical thinking skills will be honed as students respond to construction material and technology limitations during the 10 day build in a South American cultural setting. Prereq ARCH 3703. Restriction: Restricted to undergraduates with a Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3693 - Rome: Architecture & Urbanism

The objective of this course is to provide a broad overview of the city's major architectural sites, topography, infrastructure and systems of urban design and organization through the study of the rich palimpsest of buildings, piazzas and landscapes from antiquity to the present day.

Coreq. ARCH 3694 Restricted to undergraduate BS-ARCH students with Junior standing or higher. Cross-listed with ARCH 6755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3694 - Rome: Documentation, Analysis and Design

With graphic representation as the primary mode of inquiry, this course is an intensive study of a single building, piazza or landscape within the rich urban fabric of Rome. The graphical inquiry will be supported by pre-departure research and onsite observation and presentations. Coreq: ARCH 3693. Restricted to undergraduate BS-ARCH students with Junior standing or higher. Cross-listed with ARCH 6760. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3700 - Special Topics Design

Special topics in architecture studies related to design inquiries including theory, design skills, and/or analytical thinking. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ARCH 3701 - Survival Sketching

The focus of this course will be the sketchbook and the keeping of a sketchbook. Restriction: Restricted to undergraduate ARCH students within the College of Architecture and Planning with sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3702 - Design Thinking

Students will be introduced to tools that will enable them to reframe design dilemmas in favor of productive resolutions. Course content will include examples and specific techniques of design thinking, including empathy, abductive reasoning, testing, plussing and diagramming. Prereq: sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3703 - International: Design in Context

The course is a project-based design seminar. In collaboration with a small community in Central America, students have the opportunity to engage in the context of another culture, environment, construction limitations and economic constraints. The course integrates architecture, engineering, and business. Restriction: Restricted to ARCH-BS majors with Junior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3704 - The Poetic Detail-Studies in Tectonics—Wood

This research seminar focuses on tectonics through traditional timber frame and wood construction case studies. The relationship between function, aesthetics, detail, and tectonics are explored in relation to contemporary concerns. Learning by making. Cross-listed with ARCH 6357. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3705 - Human Centered Design, Innovation and Prototyping

Introduces techniques for collaborative design by interdisciplinary teams: design thinking, problem solving, and rapid prototyping. Teams of students design and implement increasingly complex projects while acquiring essential innovation and problem-solving skills. The course will culminate in a final project chosen by each team. Cross-listed with IWKS 2100. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3706 - 3D Design, Computation, and Prototyping

Introduces the design and computer-controlled fabrication of three-dimensional objects using both additive (3D printing) and subtractive (laser cutter, CNC router/mill) processes. Various commercial and open-source software tools for 3D design (CAD), manufacturing (CAM) and visualization will be explored. Increasingly complex projects throughout the semester will be used to illustrate fabrication techniques. The course will culminate in a final project. Restriction: Restricted to ARCH-BS majors with sophomore standing. Cross-listed with IWKS 3100 and 5170. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3707 - Color Theory + Application

This course will explore Color perception and theory; media/medium technique/application and landscape/built-environment drawing preparation, composition and presentation. The objective is to develop your understanding of color interaction and interrelationship especially, as it pertains to the use of color in the design and implementation of the built environment. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max Hours: 3 Credits **Semester Hours:** 3 to 3

ARCH 3708 - Introduction to the Essentials of Biomimicry

Biomimicry is the conscious emulation of nature's genius that can be applied to the fields of design, engineering, medicine, transportation, and social interaction. This class will be geared towards designers and will give an overview of the discipline, the (3) Essential Elements, the human-nature connection, The Biomimicry Thinking Methodology, and Life's Principles. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max Hours: 3 Credits **Semester Hours:** 3 to 3

ARCH 3709 - Furniture Design

Students learn how to design and build furniture in the College's woodshop. Topics include ergonomics, properties of materials, principles and techniques of joinery and techniques of hand and machine tools. Cross-listed with ARCH 6180. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3800 - Special Topics - Technical

Special topics elective will include coursework in either Digital Media In Design courses, Design-Build site Construction, or the Science and Art of Engineering Buildings. Additional topics will be develop in conjunction with the required undergraduate technical electives. Restriction: Must be an undergraduate Architecture student with sophomore standing or higher. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

ARCH 3801 - Introduction to Digital Media

Introduces Building Information Modeling (BIM) systems as a means to integrate and optimize design processes and building systems in the professional practice of architecture. Topics include creation of simulated, complex, three-dimensional environments in support of the architectural design studio sequence. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3802 - Arch Project Presentation

Architecture elective in digital and analog methods of presentation and composition for various audiences and formats. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3804 - Green Tech Eco-Furniture Fabrication I

Green Tech I is the first of two courses that are a "real build" course in which students advance their knowledge of environmental design through full-scale construction of architectural elements, furnishings, accessories, finishes, outdoor gear, or even clothing. Restriction: Restricted to ARCH-BS majors with sophomore standing or higher. Coreq: ARCH 3806. Cross-listed with ARCH 6375. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3805 - Beginning Revit

Introduction to Building Information Modeling through Autodesk's Revit Architecture software. The course explores fundamental architectural concepts as they are developed and expressed in Revit. Appropriate program use and team learning experiences are emphasized. Prereq: ARCH 3110 and 3130. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3806 - Green Tech Eco-Furniture Fabrication II

Green Tech II is the second of two courses that are a "real build" course in which students advance their knowledge of environmental design through full-scale construction of architectural elements, furnishings, accessories, finishes, outdoor gear, or even clothing. Restriction: Restricted to ARCH-BS majors with sophomore standing or higher. Coreq: ARCH 3804. Cross-listed with ARCH 6376. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3807 - Small Eco Home Design & Fabrication

This unique, quick-paced seminar focuses on small-scale residential design, from tiny-homes, to prefab, and movable residences. Students learn Small Home design, methods, and technology systems, then using green materials, they design and fabricate architectural elements and furniture for enhancing small-scale living. Restriction: Restricted to ARCH-BS majors with sophomore standing. Cross-listed with ARCH 6377. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3808 - Architectural Design and Fabrication

This course explores architectural production using advanced 3D-modeling, fabrication, and construction documentation techniques. The course connects contemporary design practice with material experimentation and architectural production. Prereq: ARCH 3801. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3809 - Architectural Design and Graphics

This course explores the varied mediums of graphic representation in architecture. Using advanced tutorials in 3D-modeling, computer-generated rendering, and workflows through multiple software platforms, students will create work that is reflective of contemporary architecture culture. Prereq: ARCH 3801. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 3949 - Internship I

Experiential learning student internships sponsored by faculty in a field related to architecture. Minimum of 45 work hours per credit. Prereq: Permission of instructor, advisor and acceptance in BS Architecture program. Must also have sophomore standing. Minimum 15 credit hours with 2.75 GPA. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ARCH 4110 - Design Studio IV

Design Studio IV. Introduces students to analysis and design as complementary processes. Students learn how to form design intentions based on analytical research and close study of the relationship between architecture, precedent and culture, and to consider buildings as settings that address issues of culture, society, economy and ecol. Prereq: ARCH 3120. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 4120 - Design Studio V

Explores the place and role of architecture as an instrument of critical social engagement and cultural change, the role of history and precedent in the design process, and the role of detail through projects that demonstrate student's proficiency as designers. Prereq: ARCH 4110. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 4340 - Theory of Structures II

Focuses on the relationship between architectural concepts and the selection of structural systems. Addresses the qualitative and quantitative analysis of reinforced concrete, steel, and wood structural systems and members. Prereq: ARCH 3340. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 4440 - Building Systems II

Focuses on the environmental systems in commercial and other nonresidential buildings. Discusses natural and artificial lighting, HVAC systems, acoustics, vertical transportation and fire protection. Recommended Prereq: MATH 1130 OR MATH 1110 & 1120; PHYS 2010/2030 OR PHYS 2311/2321. Restriction: Restricted to undergrad ARCH students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 4840 - Independent Study

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to architecture. Prereq: Restricted to undergraduate ARCH students within the College of Architecture and Planning with sophomore standing or higher. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ARCH 4949 - Internship II

Experiential learning student internships sponsored by faculty in a field related to architecture. Minimum of 45 work hours per credit. Permission of instructor, advisor and acceptance in BS Architecture program. Must also have sophomore standing. Minimum 15 credit hours with 2.75 GPA. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ARCH 5000 - Math and Physics for Architects

Provides the review of mathematics and physics. This is a prerequisite for the graduate technology courses. Does not count toward the required credits for the MARCH degree. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5110 - Design Studio I

The first of two elemental design studios focused on on the language of design, organizational and spatial systems and principles as well as on analog and digital methods of visualizing architectural ideas and forms. Restriction: Restricted to Graduate Architecture students within the College of Architecture and Planning. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 5120 - Design Studio II

The second of two elemental design studios focused on translating organizational and spatial systems, principles and concepts into architectural systems. Through a number of small scaled design exercises students learn how organizational and spatial systems can be leveraged in the design of their buildings. Prereq: ARCH 5110 and ARCH 5510. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 5130 - Design Studio III

The first of the two analytical design studios addresses how design ideas are formed through the analysis of the program in terms of action and perception and how to transform those ideas into formal strategies and specific architectural experiences. Prereq: ARCH 5120. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 5140 - Design Studio IV

The second of the two analytical studios will build upon ideas developed in the previous studio concerning how the analysis of the program in terms of action and perception inform the formal strategies and the design of specific architectural experiences. Prereq: ARCH 5130. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 5210 - Introduction to Architecture

Introduces important ways of looking at architecture and acquaints students with the various perspectives that they will later find in the rest of the curriculum. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5220 - History and Theory Architecture I

Introduces world architecture and urbanism from prehistory to the Italian Renaissance. The course helps students understand the various cultural, technological, philosophical, and aesthetic ideas that helped shape buildings through history. Buildings and settlements on all continents and in all of the major world cultures are discussed. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5230 - History and Theory Architecture II

Examines world architecture and urbanism from the Italian Renaissance to the present. Helps students understand the various cultural, technological, philosophical and aesthetic ideas that helped shape buildings through history. Buildings and settlements on all continents and in all of the major world cultures are discussed. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5310 - Building Construction I

The first of a two-course sequence that provides an overview of the structure, systems, assemblies and processes that make a building. Provides a broad view of building technology and an understanding of the interrelationship of all the parts. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5320 - Building Construction II

This course focuses on principles and processes of building construction, and introduces major constructional systems. It stresses the relationship between architectural concepts and building technology and assemblies. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5330 - Sustainable Systems I

The first course in the sustainable systems sequence introduces concepts and design methods of energy-efficient environmental control in buildings including thermal and moisture loads, heating, ventilation and air conditioning equipment and systems, and active and passive thermal strategies. Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5340 - Sustainable Systems II

The second course in the sustainable systems sequence introduces concepts and design methods of plumbing, power distribution, renewable electricity, artificial illumination, daylighting, acoustics, vertical transportation, fire protection, and telecommunication systems in buildings with a focus on energy and resource efficiency. Prereq: ARCH 5330. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5350 - Structures I

The first course in the structures sequence introduces the analysis and design of structural elements and focuses on the principles of statics and the strength of materials. Topics include stress determination, deflection and the behaviors of tension, compression and shear in various structural elements. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5360 - Structures II

Focuses on the relationship between architectural concepts and the selection of structural systems. Addresses the qualitative and quantitative analysis of reinforced concrete, steel and wood structural systems and members. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5410 - Professional Practice

Introduces the essential elements of professional practice through topics such as internship, licensing, services, modes of practice, fees, marketing, documents, specification and production procedures. Examines traditional and emerging forms of practice. Restriction: Restricted to

Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5420 - BIM: Principles & Practices

Introduces basic aspects of building information modeling (BIM) concepts, software, development, management and delivery for architectural projects. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5430 - Social Context of Design

Focuses on the ethical, social, cultural and psychological principles, which people bring to the perception and design of the built environment. Its major topics include: ethical values; cultural patterns and values; social, cultural and personal ritual; and pre-design and programming. Prereq: Graduate ARCH students only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5450 - Sustainable Design Practices

This course explores sustainable principles and practices as it relates to the design, construction of both the building and its site. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 5510 - Architectural Graphics

This course explores the development of graphic skills emphasizing drawing as a means to design. It includes investigation of drawing types and methods; diagramming of ideas and systems; informative, exploratory and developmental sketching. Restriction: Restricted to Graduate Architecture students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6150 - Design Studio V

The first of two reflective studios will assume reflective/critical stance towards programmatic issues or rather cultural presuppositions and critically explore the ways in which architecture can play a critical as well as an affirmative role within the broader cultural context. Prereq: ARCH 5140. Coreq: ARCH 6151. Max hours: 6 Credits. **Semester Hours:** 6 to 6

ARCH 6170 - Design Studio VI

This is the second of two reflective studios, which focuses on the comprehensive design of an architectural project including considerations of structural systems, environmental systems, life safety concerns, regulatory considerations, wall sections, building assemblies and significant

detail. Prereq: ARCH 6150. Coreq: ARCH 6171. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 6 to 6

ARCH 6171 - Integration Seminar

In this seminar students will develop and document the technical aspects of their Design Studio VI design projects including, life safety, mechanical, electrical, plumbing, conveyance, accessibility systems and material assemblies. Prereq: ARCH 6150, ARCH 6151. Coreq: ARCH 6170. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ARCH 6180 - Furniture Design

Students learn how to design and build furniture in the College's woodshop. Topics include ergonomics, properties of materials, principles and techniques of joinery and techniques of hand and machine tools. Cross-listed with ARCH 3709. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6185 - Digital Design & Fabrication

An introductory class to Computer Aided Design (CAD) and Computer aided manufacturing (CAM). Students explore how these technologies apply to the field of architecture with a focus is on parametric/algorithmic design approaches and mass customization manufacturing techniques. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6190 - Special Topics in Design Studies

Various topics in design, according to current faculty and student interests. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ARCH 6195 - Aspen Summer Workshop

Three weeks with three world class architecture firms in Roaring Fork Valley. The firms lead students through a unique design project that develops and challenges their observational, conceptual, and visualization abilities. Drawing as a means of seeing, understanding and creating dominates the process/ethic of the course. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6205 - Urban Housing

This course examines housing trends and patterns; supply and demand factors; housing policies; housing challenges (e.g., inequitable distribution, special needs, segregation/discrimination, and homelessness); sociological, demographic, and economic considerations; and the roles of planners and the public and private sectors. Cross-listed with LDAR 6755 and URPL 6405. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6210 - History of American Architecture

Examines the history of American architecture from prehistoric times to the present, mainly within the geographical borders of the present-day United States. Helps students understand the various cultural, technological, philosophical and aesthetic ideas that helped shape American buildings. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6212 - History of Modern Architecture

Examines the various theories, accomplishments and ideals of modern architecture in the 20th century. Issues include the relationship between theory and practice, architecture and ideology, technology, abstraction and representation, functionalism and formalism, utopianism and social responsibility. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6220 - History of Architectural Theory

Investigates the history of architectural theories in the West from antiquity to the present. Explores the various ideas that have been proposed to explain or to direct architectural design and examines the relationship between the theories and the buildings themselves. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6222 - Contested Terrains

Explores the different processes, factors and forces and determines and influences occupation, land use and built form through the phenomena of conflict and contestation. Design is inherently located within the disputes and discourses involving landscape as location and resource. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6230 - Preservation Theory and Practice

The practice of historic preservation has evolved in a specific policy context. This introductory course introduces basic American institutions and laws associated with preservation as well as standards, definitions, and practices associated with these. Cross-listed with HIPR 6010. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6231 - Regionalisms & the Vernacular

This class explores the history of the built environment from the perspective of evolutionary change; peoples attempting to meet utilitarian needs, respond to environmental forces, societal expectations, and aesthetic aspirations through design. The course looks closely at vernacular structures in a global context. Cross-listed with HIPR 6110. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6232 - Reading the City

Design and planning professionals, including preservationists, must learn to work in environments with which they have had little previous knowledge. This course emphasizes gaining understanding of a novel environment and translating that knowledge into a well researched and media savvy professional presentation. Prereq: HIPR 6410 is recommended. Cross-listed with HIPR 6610. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6233 - Historic Buildings in Context

This course covers the concept of "historic significance" and develops skills in understanding and professionally utilizing this concept. Procedures and skills are introduced. Prereq: HIPR 6010 or permission of instructor. Cross-listed with HIPR 6210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6240 - History Of The City

Introduces students to the history of global cities through selected typologies. Explores similarities and differences among cities considered against the larger cultural, political and socio-economic envelope of which they are part. Provides awareness of origins, growth and evolution of urban form. Cross-listed with URBN 6640. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6241 - Studies in Tectonics

This research seminar focuses on tectonics - the logic of structure & material combinations (wood, metal, stone, masonry etc.). Through case studies, the relationship between function, aesthetics, detail, and tectonics are explored in relation to contemporary architectural concerns. Prereq: HIST I & II. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6254 - Architecture, In Theory

Explores theories and texts that have influenced the analysis and the production of architectural form. The focus is on the expressive potential of architectural forms and the

modalities of the realization of this potential. Cross-listed with DSPL 7016. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6255 - Cultural Institutions

Selected types of cultural institutions including art museums, libraries, cultural centers, theaters, etc. are studied in this research seminar. Through case studies and readings, their ongoing cultural, architectural and corporate values are examined. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6256 - Community Development

This course introduces community development, examining planners' and other stakeholders' roles in the field; key theories and practices; community dynamics; community-based organizations; asset-based development; social equity; and the influence of local physical and economic factors on community development. Cross-listed with URPL 6400. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6257 - Community Engaged Design Practice

Obtain real-world pre-design and conceptual design experience in complex urban environments focusing on evolving trends in sustainability. Using digital trans-disciplinary learning students will develop comprehensive sustainable strategies that draw from their own sustainable philosophy developed during this class. Cross-listed with LDAR 6635 and LDAR 4435. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6258 - Social Justice in Planning

This course investigates various social justice issues encountered in planning, including conflict resolution; advocacy; environmental justice; social equity; culture and diversity; disadvantaged populations; public engagement techniques; affordability; equal access; and policy impacts. Cross-listed with URPL 6410 and LDAR 6637. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6259 - The Art of Traditional Design

Introduction to Philosophy, History and Design Methods of Traditional Design derived from Greek precedents developed through the Renaissance and later the Beaux Arts. The course will emphasize this influence on the Architecture of the United States. Restriction: Restricted to

graduate students within the College of Architecture and Planning. Max hours: 3 Credits.
Semester Hours: 3 to 3

ARCH 6260 - Architectural Precedents

Explores a number of traditional answers to recurring design issues, such as how to approach and enter a building or how to design a facade. In a seminar setting, students examine traditional ideas for their underlying principles and design new architectural compositions based on those principles. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6270 - Form and Formation of Cities

This course investigates the origins and types of human settlements; the history of cities and urbanization; urban morphology and the evolution of the built environment; urban form principles and theory; and types of urbanism. Cross-listed with URPL 6350, URBN 6633, and LDAR 5530. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6275 - History Native Amer Arch

Introduces Native American architecture from the 12th century to the present. The course helps students understand the various cultural, technological, philosophical and aesthetic ideas that helped shape these buildings throughout history. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits.
Semester Hours: 3 to 3

ARCH 6290 - Special Topics in Cultural Studies

Various topics in cultural studies, according to current faculty and student interests. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Repeatable. Max hours: 21 Credits. **Semester Hours:** 3 to 3

ARCH 6310 - Greenbuilding Tech

This seminar will advance the student's knowledge of environmental building and construction methods through studies in material resources, innovative green systems, alternate green technology, energy efficiency, and affordability in "green architectural design." Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6313 - LEED Certification, Greenbuilding Seminar

This RIGOROUS course will use the LEED Certification process to provide a framework for assessing building performance and meeting sustainability goals, following the 1st step in a two stage Professional Accreditation process, focusing on LEED GA, Green Associate Accreditation. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6314 - LEED AP Advanced Greenbuilding Seminar

This advanced LEED Certification and Accreditation course builds on the first LEED GA course, providing a framework for assessing green building performance and sustainability goals, exploring advanced green building concepts and preparing the student for the LEED AP BD+C exam. Prereq: ARCH 6313 or instructor approval. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6351 - Building Conservation

This course emphasizes the relationship between knowledge acquisition, professional judgement, and design modification. Topics include: 1) Historic Building Types & Methods, 2) Field and Lab Methods of Building Assessment, and 3) Management of Building Rehabilitation. The course takes an integrative approach to the scientific, aesthetic, managerial and legal dimensions of preservation. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6352 - Documentation, Analysis, Representation

This methods course focuses on skills development in in-situ documentation of the historic environment. The course includes modules on: a) historic records, b) archaeological evidence, c) building and site measurement, d) photographic & Photometric methods, e) geo-spatial data, f) graphic representation, and g) reporting formats. Cross-listed with HIPR 6310. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6353 - Daylighting Design

Daylighting is the use of light from the sky to illuminate building interiors. The objective of this course is to introduce students to the fundamentals of daylighting design including how it is perceived and how it impacts building energy flows. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6355 - Urban Conservation: Context for Reuse

Human habitats (especially cities) are dynamic. The preservationist cannot freeze cities in a static representation of the past. The course deals with philosophical and political contexts, but

emphasizes the role of strategic design intervention in the shaping of evolving cities. Cross-listed with HIPR 6410. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6356 - Adaptive Reuse: Business and Practice

Existing buildings and infrastructure afford challenges and opportunities for reuse. This course explores the business, and financial aspects of adapting the built environment for contemporary uses. The course is suitable for designers, planners, historians and social scientists. Restriction: Restricted to majors within the College of Architecture and Planning. Cross-listed with HIPR 6220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6357 - The Poetic Detail-Studies in Tectonics—Wood

This research seminar focuses on tectonics through traditional timber frame and wood construction case studies. The relationship between function, aesthetics, detail, and tectonics are explored in relation to contemporary concerns. Learning by making. Cross-listed with ARCH 3704. Restriction: Restricted to ARCH-BS majors with sophomore standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6370 - Introduction To Design Build

Introduction to Design Build project delivery methods important to architects. Lecture, research on the industry and an individual student project are the methods used to introduce ethical questions, role of the architect, owner, consultant and subcontractors. Work leads to studio project or case study. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6373 - Construction in Design Build

Using a single project, students fully explore the design phase, estimating, scheduling and project management skills in traditional construction. Course is concurrent with an advanced studio and builds a project on a site. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6375 - Green Tech Eco-Furniture Fabrication I

Green Tech I is the first of two courses that are a "real build" course in which students advance their knowledge of environmental design through full-scale construction of architectural elements, furnishings, accessories, finishes, outdoor gear, or even clothing. Coreq: ARCH 6376. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Cross-listed with ARCH 3804. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6376 - Green Tech Eco-Furniture Fabrication II

Green Tech II is the second of two courses that is a "real build" course in which students advance their knowledge of environmental design through full-scale construction of architectural elements, furnishings, accessories, finishes, outdoor gear, or even clothing. Students must be enrolled in both Green Tech I and Green Tech II in the same semester. Coreq: ARCH 6375. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Cross-listed with ARCH 3806. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6377 - EcoFAB: Furniture Design and Fabrication for Small-Scale Residential Architecture

This unique, quick-paced seminar focuses on small-scale residential design, from tiny-homes, to prefab, and movable residences. Students learn Small Home design, methods, and technologies, then using green materials, they design and fabricate architectural elements and furniture for enhancing small-scale living. Restriction: Restricted to ARCH graduate students. Cross-listed with ARCH 3807. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6390 - Special Topics in Technology

Various topics in technology, according to current faculty and student interests. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Repeatable. Max hours: 18 Credits. **Semester Hours:** 3 to 3

ARCH 6412 - Construction Documents

Introduces the concepts and techniques of construction documents. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6413 - Construction Leadership

The final course is an integrated architecture, engineering, and construction business course bringing together executives, principals, and managers to current industry topics and provide students opportunities to apply management and leadership principles from the various fields to case study projects. Crosslisted with CVEN 5238. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6420 - Integrated Practice & BIM Technology

This class will be a general overview of integrated practices and technologies used in today's industry. Understanding the nature of how information is created and managed using BIM technologies will help us define a road map for how information passes downstream and bring

value to a project. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6450 - Pre-Design

Course lectures, readings, and case studies cover pre-design methodologies, research, documentation, facilitation and consensus building. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6463 - BIM: Emerging Prof. Practices

The 21st century architect's emerging role is designing the design process. BIM (Revit) attempts to optimize the entire process, including all participants, from conceptual design, through post-building occupancy. These capabilities are explored and developed. Prereq: ARCH 5430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6464 - BIM: Advanced Design Concepts

BIM's complexity (Revit) challenges all designers. The emerging tool is very sophisticated, but its benefit are not realized from modeling alone. We address architectural design as a multifaceted optimization process: concept, form, and function. Prereq: ARCH 5430. Cross-listed with ARCH 6390. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6470 - ACE Mentoring

Graduate students work with professional architects, designers, and engineers mentoring students in selected local high schools to learn problem solving, graphics and model making to produce a design project. Student mentors develop lesson plans, outcomes and keep a weekly journal. Cross-listed with LDAR 6470 and URPL 6850. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6471 - Managing Quality & Risks

A lecture and seminar on approaches to risk management including contracts, insurance, financial analysis, dispute resolution and client relationships. Utilizing case study approach, quality assurance will be defined and studied in the design and building phase of workings. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6472 - Architecture in a Single Source Project Delivery

Directed to the practice of architecture with design build and other single source delivery systems. This course examines requirements of codes, zoning, building systems and legal questions for the architect. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6473 - Research Tools & Methods

Introduces the thesis in architecture and establishes the scholarly basis for the research and construction of a Master's Thesis project. This course will provide the student with the research practices and methodologies to develop the scholarship and products required to produce a Thesis Project Proposal. Completion of this course is a prerequisite for the student to submit the Thesis Proposal for departmental approval to continue with the remaining 9 credits of thesis work. Cross-listed with LDAR 6949. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6475 - BIM/Flow of Information

The course is geared toward CAP students, non-degree seeking working professionals and other students interested in the Integrated Construction, Management and Leadership (ICML) Certificate. This class will be a general overview of Virtual Design and Construction (VDC) in today's AEC industry. Restriction: Graduate students. Junior standing and above undergraduate students are eligible to take course with approval by instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6490 - Special Topics in Professional Studies

Various topics in professional studies according to current faculty and student interests. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Repeatable. Max Hours: 18 Credits. **Semester Hours:** 3 to 3

ARCH 6510 - Digital Applications in Design

This course introduces first year design students to the Graphic Design Concepts and Digital Applications necessary to create digital, printed and physical presentations of their work. Students learn computer skills including: raster and vector based programs and digital modeling. Prereq: ARCH 5110 and ARCH 5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6515 - Adv. Digital Representation

In this course students will learn advanced techniques of architectural representation using digital modeling, rendering engines, and post processing in the Adobe Creative Suite. Prereq: ARCH 5510 and 6510 or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6530 - The Art of Proportion

This course covers the use of proportional systems in the Classical tradition. Students complete a series of graphic exercises culminating in the construction of a Beaux-Art style ink-wash of a classical column. Cross-listed with ARCH 6290 and HIPR 6090. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6550 - Digital Portfolio Design

This course introduces students to the Graphic Design Concepts and the Digital Applications used to create both Printed and Web-based Portfolios. Students must have completed ARCH 5110 and have a working knowledge of Photoshop. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6560 - Architecture Photography

Emphasizes and understanding of light, composition, color and problem solving, with a particular goal of applying these skills to the photography of architectural exteriors and interiors. For students who have access to adjustable 35 mm digital cameras. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6570 - Sketching As Seeing

Sketching promotes seeing, and seeing promotes thinking. This course is designed to help you think & see by the regular practice of sketching & the discipline of keeping a sketchbook. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6575 - 2D-3D & 4D Design Space

The graphics language of words and art bridge intention and design. Passing ideas and mental imagery through digital technology's 2D, 3D and 4D filters is the challenge. Students develop concepts in AutoCAD, visualize in 3DStudio Max, and narrate the process in Adobe Premiere. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6580 - High-Performance Façade Design

It is the intent of the course to provide graduate students with a comprehensive understanding of the technical concepts and specific skills necessary to undertake in actual practice the design, detailing, specification, and construction administration of high-performance building facades.

Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max Hours: 3 Credits **Semester Hours:** 3 to 3

ARCH 6590 - Special Topics in Representational Studies

Various topics in representational studies, according to current faculty and student interests. Prereq: ARCH 5510. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

ARCH 6710 - Architecture in Other Cultures

Various studies of architecture and urbanism in foreign countries. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 12 Credits. **Semester Hours:** 1 to 9

ARCH 6715 - The Built Environment in Other Cultures I: Research Design

The intent is to broaden students' perspectives by asking them to examine design within another culture. Each student prepares a proposal of study including a statement of the problem to be addressed, the type of field research to be undertaken and the nature of the report to be produced. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6755 - Rome: Architecture & Urbanism

The objective of this course is to provide a broad overview of the city's major architectural sites, topography, infrastructure and systems of urban design and organization through the study of the rich palimpsest of buildings, piazzas and landscapes from antiquity to the present day. Coreq: ARCH 6760. Restriction: Restricted to ARCH graduate students. Cross-listed with ARCH 3693. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6760 - Rome: Documentation, Analysis and Design

With graphic representation as the primary mode of inquiry, this course is an intensive study of a single building, piazza or landscape within the rich urban fabric of Rome. The graphical inquiry will be supported by pre-departure research and onsite observation and presentations. Coreq. ARCH 6755. Restriction: Restricted to ARCH graduate students. Cross-listed with ARCH 3694. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6775 - Bluff General Elective

Provides students the opportunity to focus their attention on one of three areas: technical studies, professional studies, or cultural studies. Students will complete coursework as it relates to Design Build Bluff. Counts as a general elective. Restriction: Restricted to Architecture

graduate students within the College of Architecture and Planning. Max hours: 3 Credits.
Semester Hours: 3 to 3

ARCH 6840 - Independent Study

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to architecture. Prereq: Permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARCH 6910 - Teaching Assistantship

Work with a faculty member in a course to help with class preparation and delivery. This is intended for students who may be considering a career in teaching architecture. Prereq: Permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ARCH 6930 - Architecture Internship

Designed to provide professional practice experience. The internship is composed of eight hours per week working in a practicing professional's office during the regular semester. Students must complete the second-year level before taking this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 6931 - Architecture Internship

Designed to provide professional practice experience. The internship is composed of eight hours per week working in a practicing professional's office during the regular semester. Students must complete the second-year level before taking this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARCH 7840 - Independent Study

Max hours: 3 Credits. **Semester Hours:** 1 to 3

Bioengineering

BIOE 1010 - Bioengineering Design and Prototyping I

BIOE 1010 introduces students to bioengineering, and provides an introduction to possible careers and research topics in bioengineering. Students also learn human anatomy by understanding how to incorporate visual human data sets into computer prototyping and design tools. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 1020 - Bioengineering Design and Prototyping II

BIOE 1020 extends work from BIOE 1010 by introducing students to practical skills around computer-aided design (CAD), modeling and prototyping with focus on project-oriented work aimed at design, prototyping and metrology of specific medical devices. Prereq: BIOE 1010 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 2010 - Introduction to Programming for Bioengineers

Digital computers are the primary tools of modern engineers. This class introduces the undergraduate to general computing concepts, computer languages, and programming techniques. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Prereq: MATH 1401 with a C- or higher. Max Hours: 2 Credits. **Semester Hours:** 2 to 2

BIOE 2020 - Introduction to Computational Methods for Bioengineers

A modern engineer is required to solve problems involving the physical world not only on paper, but also using numerical tools implemented on digital computers. This class introduces the students a first set of numerical algorithms for the solution of calculus-based engineering problems. Prereq: BIOE 2010 and MATH 2411 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Max Hours: 2 Credits. **Semester Hours:** 2 to 2

BIOE 2840 - Independent Study in Bioengineering

Covers topics which students may wish to pursue on their own initiative with guidance from department faculty. Credit is awarded upon completion of a project. Department consent required. Restriction: Restricted to BIOE-BS majors. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 3010 - Bioinstrumentation

This course is intended for junior bioengineering students to facilitate their development into bioengineering investigation. The course has been designed to introduce fundamental principles of circuit theory, analog and digital electronics and biological instrumentation techniques commonly used in biomedical research. Prereq: BIOE 1020, 2020; PHYS 2331/2341; CHEM 3411/3418, MATH 2421, 3195, and BIOL 2061/2081 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3020 - Introduction to Biomechanical Analysis

This course will offer an overview of solid and fluid mechanics, as applied to biomechanical systems. After completing this course, students should have enough understanding of biomechanics to: (1) perform and interpret basic analytical of biomech. systems; (2) analytically reason through a design; (3) and choose a specialty. Prereq: BIOE 1020, 2020; PHYS 2331/2341;

CHEM 3411/3418, MATH 2421, 3195 and BIOL 2061/2081 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering , Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3030 - Introduction to Biomaterials

This course will cover different kinds of biomaterials in biomedical applications, and their physiological response in the biological environment. In addition, it will cover material properties, host response, and characterization techniques. Prereq: BIOE 1020, 2020; PHYS 2331/2341; CHEM 3411/3418, MATH 2421, 3195, and BIOL 2061/2081 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3040 - Physiology for Bioengineering

This course will introduce students to central concepts in human physiology. This includes the structure, function and homeostatic role of key organs within the body; the engineering principles governing these systems and processes; and designing engineering-based solutions to overcome dysfunction in disease. Prereq: BIOE 1020, 2020; PHYS 2331/2341; CHEM 3411/3418, MATH 2421, 3195, and BIOL 2061/2081 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3050 - Cell & Molecular Bioengineering

An examination of the structure and function of eukaryotic cells. Emphasis is placed on mechanisms of intracellular and transmembrane transport, cellular control, gene expression, and intercellular and intracellular signaling. Experimental methods and applications will be discussed. Prereq: BIOE 3010, 3020, 3030, 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3051 - Cell & Molecular Bioengineering Lab

Laboratory experience in cell and molecular biology techniques. Experimental methods and applications will be discussed and performed including basic microscopy, PCR, purification and separation techniques, and protein assays. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Co-req: BIOE 3050. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3060 - Biostatistics, Measurement and Analysis

Students will learn and apply parametric statistics, including t-tests, ANOVA, and regression methods, using commercially available statistical software to the analysis of clinical and/or

biological data. Further, they will be introduced to measurement error and the propagation of error technique. Restriction: Restricted to BIOE-BS majors. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3070 - Bioengineering Lab I

Core bioengineering lab required of all major students. This lab introduces students to experimental techniques in the areas of Biomaterials, Biomedical Instrumentation, and Biomechanics. Prereq: BIOE 1020, 2020; PHYS 2331/2341; CHEM 3411/3418, MATH 2421, 3195, and BIOL 2061/2081 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3071 - Bioengineering Lab II

Lab sequence 2 of 2. A series of modules focused on quantitative techniques relative to Bioengineering. Modules will include Physiological data acquisition and analysis, Medical Imaging and Assistive Technologies. Prereq: BIOE 3070 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3090 - Introduction to BioDesign

BioDesign I is the first course in a three sequence design process that provides students with a framework for identifying medical needs through clinical observation, environment analysis and product screening. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 3939 - Undergraduate Internship

Department of Bioengineering Internship. Credit may be applied toward technical electives in the BS in Bioengineering degree. Department consent required. Restriction: Restricted to BIOE-BS majors. Repeatable. Max Hours: 3 Credits. Semester Hours: 1 to 3 **Semester Hours:** 1 to 6

BIOE 4035 - Undergraduate BioDesign II

This represents the second semester of the core undergraduate Biodesign sequence. Students gain experience around Design and Prototyping, Verification and Validation, and evaluation of key components around biomedical technology development. Prereq: BIOE 3090. Restriction: Restricted to full Bioengineering majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4045 - BioDesign III

This course represents the capstone culmination of the core undergraduate Biodesign experience. Students finalize all design, prototyping, testing and validation components, and present the project per professional standards to professionals and peers. Prereq: BIOE 4035 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4053 - Optics and Microscopy in Biomedical Research

Undergraduate overview of optical imaging, ranging from classical microscopy to advanced, non-linear techniques and includes theory, technology and applications in biomedical sciences. This will prepare students for developing and applying state-of-the-art optical imaging in their research. Cross-listed with BIOE 5053. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4054 - Regulatory Affairs

This course covers standards of quality assurance and regulatory pathways that guide biomedical engineering industry. Cross-listed with BIOE 5054. Restriction: Restricted to BIOE majors or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4057 - Rehabilitation and Assistive Technology

This course provides students with an overview of technologies and their use by and for persons with disabilities. Cross-listed with BIOE 5057. Restriction: Restricted to students with BIOE designation, or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4058 - Intro to Design, Disability, and Aging

This course provides an introduction to the topic of disability and aging and the application of bioengineering principles for persons living with functional impairment(s) across the lifespan. Cross-listed with BIOE 5058. Restriction: Restricted to BIOE majors or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4063 - 3D Modeling for Bioengineers

This course instills in the 3D modeling skills specific to the biomedical industry. Topics include computer aided design (CAD), medical imaging, image processing, patient specific image to three-dimensional (3D) model reconstruction, non-uniform rational b-spline (NURBS) surfaces, finite element and computational fluid dynamics (FEA/CFD) analyses and physical modeling using rapid prototyping. Prereq: 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4064 - Advanced MatLab For Bioengineers And Life Scientists

MatLab programming for undergraduate bioengineers and life scientists. Topics include MatLab syntax and optimization as well as techniques for working with scalars, time-series, images and multi-dimension datasets. Surface/Curve fitting. modeling, automation and classification will be covered. Cross-listed with BIOE 5064. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4065 - Introduction to iOS Apps

This course will introduce students to best practices in developing Health centered iOS Apps. Topics will focus on Xcode, Object Oriented Design, Objective-C, Cocoa, Core Data and the iOS emulator. Cross-listed with BIOE 5065. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4066 - Advanced Topics in iOS Apps

This course will introduce undergraduates to advanced topics focused on creating health centered iOS Apps. Topics will cover best practices for developing Apps across the iOS product lineup including Apple Watch and developing for Apple Health kit. Deployment and validation will also be covered. Cross-listed with BIOE 5066. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4067 - Human Factors and Usability Testing for Bioengineers

This course provides an introduction to human factors testing and evaluation in the context of medical devices and assistive technology (AT). Particular focus will be given towards designing and applying usability testing to inform product design decisions or improvements. Topics include human factor considerations for aging and disabled populations (and their care providers), usability techniques, user experience data collection and interpretation, etc. Students will engage in hands-on human factors assessments such as contextual inquiry of surgery patients, cognitive walkthroughs with simulating disability, and product usability testing and iteration. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4068 - Introduction to Medical Imaging

This course will introduce undergraduates to the basic physics, technologies, and clinical methodologies underlying Ultrasound, MRI, CT, PET and SPECT imaging systems. The course will include lectures, and visits to campus hospital and research imaging systems as well as hands on ultrasound labs. Cross-listed with BIOE 5068. Prereq: BIOE 3010, 3020, 3030, and 3040 with

a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4069 - Advanced Biomechanics for Undergraduates

This course covers advanced topics such as blood flow dynamics, introduction to non-linear finite deformation techniques, blood rheology, and computational techniques. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Cross-listed with BIOE 5069. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4073 - Neural Interfaces and Bionic Limbs

This course will introduce undergraduates to topics in neural interfaces (Brain machine interfaces, peripheral nerve interfaces etc), the issues involved in the design of mechatronic limb systems and the decoding algorithms used to map the neural interface to the mechatronic limb. Cross-listed with BIOE 5073. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4083 - Polymers in Biomedical Applications

This course will introduce undergraduate students to fundamental synthetic method and basic characteristics of various polymeric biomaterials and their crucial roles in different biomedical applications. It will also cover how the polymers can be modified to enhance biomedical applications. Cross-listed with BIOE 5083. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4085 - Tissue Engineering

This course covers tools, techniques, characterization and applications in modern tissue engineering. Cross-listed with BIOE 5085. Restriction: Restricted to BIOE-BS majors within the College of Engineering, Design and Computing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 4420 - Special Topics in Bioengineering

Special topics of particular interest to undergraduate in the Bioengineering program. Registration requires departmental approval. Prereq: BIOE 3010, 3020, 3030, and 3040 with a C- or higher. Restriction: Restricted to BIOE-BS majors. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BIOE 4840 - Independent Study in Bioengineering

Covers advanced topics which students may wish to pursue on their own initiative with guidance from department faculty. Credit is awarded upon completion of a project. Department Consent Required. Restriction: Restricted to BIOE-BS majors. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 4929 - Undergraduate Research Project

Department of Bioengineering Research Project. Credit may not be applied toward the BS in Bioengineering degree. Department consent required. Restriction: Restricted to BIOE-BS majors. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 5010 - Cell and Molecular Biology for Bioengineers

Introduction to cellular and molecular biology, with a focus on using engineering methods and literature to analyze structure and function of cells throughout lifecycle and multiple scales. Design experiments to test hypotheses. Prereq: Graduate standing in Bioengineering or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5011 - Systems Physiology for Bioengineers

Use engineering principles to study key physiological systems. Topics: cardiovascular, neuroscience, urological, or renal medicine. Related engineering principles: pressure-flow relationships, stress-strain, electromechanical coupling and signal transduction. Prereq: Graduate standing in Bioengineering or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5020 - Analytic Methods for Engineering Analysis

This course provides mathematical tools essential for graduate level bioengineering work. Studies selected topics from probability, linear algebra, and vector calculus, with emphasis on bioengineering applications. Prereq: Graduate standing in Bioengineering or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5021 - Numerical Methods for Engineering Analysis

Provides computational skills and knowledge of numerical methods for engineering/scientific computation using Matlab. Topics: root finding, interpolation, difference and integration rules, solution of initial and boundary value ODEs, and introduction to the solution of PDEs. Prereq: Graduate standing in Bioengineering or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5030 - Technology for Bioengineers

This course will prepare students fundamental bioengineering principles common to areas of active research. This includes fundamental principles behind systems and instrumentation in mechanics, electronics, fluid flow and clinical imaging modalities, as well as an introduction to polymeric biomaterials. Prereq: Graduate standing in Bioengineering. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOE 5031 - Technology for Bioengineers II

This course continues the introduction to imaging from BIOE 5030 (Technology for Bioengineers I) but with a much stronger emphasis on quantitative methods of medical image analysis and description of medical imaging physics. Prereq: Graduate standing in Bioengineering. Grade of B or better in BIOE 5030, or consent of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5039 - Mechatronics and Embedded Systems

The course focuses on the design and construction of microprocessor-controlled electro-mechanical systems. Lectures review critical circuit topics (Ohm's law, RLC circuits, DC and AC signals, diode and transistor circuits, operational amplifiers, and digital signals), introduce microprocessor architecture and programming, discuss sensor and actuator component selection, robotic systems, and design strategies for complex, multi-system devices. Lab work reinforces lectures and allows hands-on experience with robotic and embedded systems design. Students must design and build an embedded systems device related to assistive technology. Note: Project expenses may be incurred (\$50 maximum). Restriction: Restricted to graduate students in the Department of Bioengineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5040 - Research Methods for Bioengineers

This course provides an introduction to research methods for bioengineers in order to prepare for basic research, clinical applications and commercialization of medical technologies. Topics include literature review, regulatory policy. Prerequisite: Graduate standing in Bioengineering (MS/PhD). Max hours: 2 Credits. **Semester Hours:** 2 to 2

BIOE 5041 - Clinical Experiences for Bioengineers

This course provides opportunities for clinical experiences such as observing surgeries and touring intensive care units to prepare students for clinical applications and foster collaborations with clinical practitioners. Experiences take place through the school year. Prerequisites: Graduate standing in Bioengineering (MS/PHD). Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

BIOE 5053 - Optics & Microscopy in Biomedical Research

Graduate overview of optical imaging, ranging from classical microscopy to advanced non-linear techniques and includes theory, technology and applications in biomedical sciences. This will prepare students for developing and applying state-of-the-art optical imaging in their research. Cross-listed with BIOE 4053. Prereq: Grad standing or permission from the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5054 - Regulatory Affairs

This course covers standards of quality assurance and regulatory pathways that guide biomedical engineering industry. Cross-listed with BIOE 4054. Restriction: Restricted to BIOE majors or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5057 - Rehabilitation and Assistive Technology

This course provides students with an overview of technologies and their use by and for persons with disabilities. Cross-listed with BIOE 4057. Restriction: Restricted to students with BIOE designation, or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5058 - Intro to Design, Disability, and Aging

This course provides an introduction to the topic of disability and aging and the application of bioengineering principles for persons living with functional impairment(s) across the lifespan. Cross-listed with BIOE 4058. Restriction: Restricted to BIOE majors or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5063 - 3D Modeling for Bioengineers

Course instills 3D modeling skills specific to biomedical industry. Topics include computer aided design, medical imaging, image processing, patient specific image to three-dimensional model reconstruction, non-uniform rational b-spline surfaces, finite element, computational fluid dynamics analyses, physical modeling using rapid prototyping. Restrictions: Matriculated CEDC students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5064 - Advanced MatLab For Bioengineers And Life Scientists

MatLab programming for graduate bioengineers and life scientists. Topics include MatLab syntax and optimization as well as techniques for working with scalars, time-series, images and multi-dimension datasets. Surface/Curve fitting. modeling, automation and classification will be covered. Cross-listed with BIOE 4064. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5065 - Introduction to iOS Apps

This course will introduce graduate students to best practices in developing Health centered iOS Apps. Topics will focus on Xcode, Object Oriented Design, Objective-C, Cocoa, Core Data and the iOS emulator. Cross-listed with BIOE 4065. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5066 - Advanced Topics in iOS Apps

This course will cover advanced topics focused on creating health centered iOS Apps. Topics will cover best practices for developing Apps across the iOS product lineup including Apple Watch and developing for Apple Health kit. Deployment and validation will also be covered. Cross-listed with BIOE 4066. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5067 - Human Factors and Usability Testing for Bioengineers

This course provides an introduction to human factors testing and evaluation in the context of medical devices and assistive technology (AT). Particular focus will be given towards designing and applying usability testing to inform product design decisions or improvements. Topics include human factor considerations for aging and disabled populations (and their care providers), usability techniques, user experience data collection and interpretation, etc. Students will engage in hands-on human factors assessments such as contextual inquiry of surgery patients, cognitive walkthroughs with simulating disability, and product usability testing and iteration. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5068 - Introduction to Medical Imaging

This course will introduce graduate students to the basic physics, technologies, and clinical methodologies underlying Ultrasound, MRI, CT, PET and SPECT imaging systems. The course will include lectures, and visits to campus hospital and research imaging systems as well as hands on ultrasound labs. Cross-listed with BIOE 4068. Restriction: Restricted to Bioengineering students with graduate student status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5069 - Advanced Biomechanics for Graduates

This course covers advanced topics such as blood flow dynamics, introduction to non-linear finite deformation techniques, blood rheology, and computational techniques. Restriction: Restricted to Bioengineering students with graduate student status, or by Permission of Instructor. Crosslisted with BIOE 4069. Max hours: 3 credits. **Semester Hours:** 3 to 3

BIOE 5073 - Neural Interfaces and Bionic Limbs

This course will introduce graduate students to topics in neural interfaces (Brain machine interfaces, peripheral nerve interfaces etc), the issues involved in the design of mechatronic limb systems and the decoding algorithms used to map the neural interface to the mechatronic

limb. Cross-listed with BIOE 4073. Restrictions: Matriculated CEDC students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5074 - Introduction to Laboratory Animal Research

This course provides basic theoretical and practical knowledge on the use of the most common laboratory animal species, animal models and welfare, general concepts on animal biology and husbandry, and essential principles of anesthesia, analgesia, surgery and peri operative care. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5083 - Polymers in Biomedical Applications

This course will introduce graduate students to fundamental synthetic method and basic characteristics of various polymeric biomaterials and their crucial roles in different biomedical applications. It will also cover how the polymers can be modified to enhance biomedical applications. Cross-listed with BIOE 4083. Prereq: Graduate standing at CU Denver or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5085 - Tissue Engineering

This course covers tools, techniques, characterization and applications in modern tissue engineering. Cross-listed with BIOE 4085. Restriction: Restricted to Bioengineering students with graduate student status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOE 5420 - Special Topics in Bioengineering

Special topics of particular interest to graduate students in Bioengineering. Prereq: Graduate standing within the Department of Bioengineering or permission of instructor. Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 6

BIOE 5840 - Independent Study in Bioengineering

Graduate level independent study in Bioengineering with a faculty mentor. Prereq: Graduate standing within the Department of Bioengineering or permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 5939 - Graduate Internship

Department of Bioengineering Internship. Credit may not be applied toward the MS in Bioengineering degree. Enrollment by department permission only. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 6655 - Foundations of Doctoring MS Years

This course is for CU MD-MS students who are on leave of absence from SOM and wish to maintain clinical exposure and training during the leave. Prereq: Phase I & II SOM classes and graduate standing in BIOE. Repeatable. Max Hours: 20 Credits. **Semester Hours:** 1 to 5

BIOE 6950 - Masters Thesis

Research for Master Thesis under supervision of faculty thesis advisor. Prerequisites: Consent of thesis advisor. Restrictions: Satisfactory progress toward MS-Bioengineering degree. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 6960 - Master's Project

Training for Master's Project under the supervision of faculty project advisor. Prereq: Department Consent. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

BIOE 8990 - Doctoral Dissertation

Research for doctoral dissertation under supervision of faculty advisor. Prerequisites: Consent of dissertation advisor. Restrictions: Satisfactory progress toward PhD-Bioengineering Degree. Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

Biology

BIOL 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 1 to 3

BIOL 1136 - Human Biology

Topics include: basic human body chemistry, healthy internal body balance, new disease treatments, human inheritance and human beings as part of Earth's living systems. Note: For students who are not majoring in biology. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 1200 - Drugs, Health, and Wellness

Taught by CU Anschutz practicing health care professionals, the course provides an introduction to contemporary drug-related issues, such as drug misuse and abuse, medical and recreational marijuana, drug discovery and development, personalized medicine, common illnesses experienced by typical college age students, and personal health and wellness. This course does not count toward the major. Max hours: 2 Credits. **Semester Hours:** 2 to 2

BIOL 1332 - Topics in Biology.

Special topics in introductory biology will be covered. Repeatable. Max hours: 9 Credits.

Semester Hours: 1 to 3

BIOL 1550 - Basic Biology: Ecology and the Diversity of Life

Introduces the process of science, gene expression, biological diversity, evolution, and ecology. Highlights applications to contemporary issues. Lecture and lab course. Note: For students who are not majoring in biology. Biology and health career majors should not take this course.

Students may not receive credit for this course if they have already received credit for BIOL 2051 and BIOL 2061. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1

Semester Hours: 4 to 4

BIOL 1560 - Basic Biology: From Cells to Organisms

Introduces the process of science, cell structure and function, survey of representative human and plant systems, and genetics. Highlights applications to contemporary issues. Lecture and lab course. Note: For students who are not majoring in biology. Biology and health career majors should not take this course. Students may not receive credit for this course if they have already received credit for BIOL 2051 and BIOL 2061. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 4 to 4

BIOL 2051 - General Biology I

Introduces four major areas of study: (1) the chemistry of biological systems; (2) the structure and function of the cell; (3) cellular energy transformations (photosynthesis and respiration); and (4) genetics (mitosis, meiosis, patterns of inheritance, molecular genetics). Note: This class is intended for students planning to take upper division biology courses and for biology majors. Biology majors and pre-health career students must also take the accompanying laboratory - BIOL 2071. It is recommended that students have completed CHEM 1000 or high school chemistry prior to taking this course. No co-credit with BIOL 2095. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 3 to 3

BIOL 2061 - General Biology II

This course is a continuation of BIOL 2051. Introduces four major areas of study: (1) evolution, (2) animal structure and function, (3) plant structure and function and (4) ecology. Note: This class is intended for students planning to take upper division biology courses and for biology majors. Biology majors and pre-health career students must also take the accompanying laboratory - BIOL 2081. Prereq: BIOL 2051 or 2095 with a grade of "C-" or higher. No co-credit with BIOL 2097. Term offered: fall, spring, summer. Max hours: 3 Credits. GT:

Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 3 to 3

BIOL 2071 - General Biology Laboratory I

Introduces the basic scientific approach through investigations, observations, and experiments in cell biology, basic biochemical techniques, genetics, molecular genetics and applications of biotechnology. Note: This class is intended for students planning to take upper division biology courses and for biology majors. No co-credit with BIOL 2096. Term offered: fall, spring, summer. Max hours: 1 Credit. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 1 to 1

BIOL 2081 - General Biology Laboratory II

Investigations, observations, and experiments in evolution, bioinformatics, ecology, and animal behavior, anatomy, and physiology; requires off-campus field work. Note: This class is intended for students planning to take upper division biology courses and for biology majors. Prereq: BIOL 2071 or 2096 with a C- or higher. Students are strongly encouraged to take BIOL 2061 concurrently or before they take this course. No co-credit with BIOL 2098. Term offered: fall, spring, summer. Max hours: 1 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 1 to 1

BIOL 2095 - Honors General Biology I

Honors level course limited to students in the BA/BS/MD, Denver Bound and UNHL programs. Four major topics covered: the chemistry of biological systems, the structure/function of the cell, cellular energy transformations and genetics. Restriction: Restricted to Biology honors students within the College of Liberal Arts and Sciences(student group BH01). Instructor permission required. No co-credit with BIOL 2051. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 2096 - Honors General Biology Lab I

Honors level course limited to students in the BA/BS/MD, Denver Bound and UNHL programs. Introduces the basic scientific approach and report preparation through exercises and experiments in cell biology, basic biomedical techniques, genetics, molecular genetics and applications of biotechnology. Instructor permission required. Restriction: Restricted to Biology honors students within the College of Liberal Arts and Sciences(student group BH01). No co-credit with BIOL 2071. Term offered: fall. Max hours: 1 Credit. **Semester Hours:** 1 to 1

BIOL 2097 - Honors General Biology II

Honors level course limited to students in the BA/BS/MD, Denver Bound and UNHL programs. This course is a continuation of BIOL 2095. Introduces four major areas of study: evolution,

animal structure/function, plant structure/function, and ecology. Prereq: Students need to have completed BIOL 2095 or BIOL 2051 with a grade of C- or higher and Restricted to Biology honors students within the College of Liberal Arts and Sciences(student group BH01). Instructor permission required. No co-credit with BIOL 2061. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 2098 - Honors General Biology Lab II

Honors level course limited to students in the BA/BS/MD, Denver Bound and UHL programs. Advanced study of evolution, plant and animal anatomy, developmental biology and includes two off-campus ecology field trips. Prereq BIOL 2096 or BIOL 2071 with a grade of C- or higher. Restriction: Restricted to Biology honors students within the College of Liberal Arts and Sciences(student group BH01). No co-credit with BIOL 2081. Term offered: spring. Max hours: 1 Credit. **Semester Hours:** 1 to 1

BIOL 2750 - Introduction to Molecular Research Techniques

Designed to give background knowledge and hands-on experience for a person wanting to work in a molecular-research laboratory. Introduction to basic molecular techniques including micropipetting, making media, DNA and RNA isolation, restriction digest, RT-PCR, and gel electrophoresis. Max hours: 2 Credits. **Semester Hours:** 2 to 2

BIOL 2840 - Independent Study

Student will contribute to ongoing faculty or graduate student's lab or field-based investigation that makes an original intellectual or creative contribution to the discipline. Associated coursework includes scientific reading/writing/presentation(s). Note: registration by special processing form only. Prereq: Students must have completed one year of general biology with a grade of "C-" or higher and must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BIOL 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have completed 15 hours of BIOL courses with a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BIOL 3020 - Practical Laboratory Skills

Designed for Students who are interested in working in a professional biology laboratory. Covers improvement of manual dexterity skills, understanding common laboratory apparatus and handling biological macromolecules and living cells. Prereq: BIOL 2010 (or 2061/2097/2030), BIOL 2011 (or 2081/2098/2031), BIOL 2020 (or 2051/2095/2040), and BIOL 2021 (or 2071/2096/2041) AND CHEM 2031(or 2081), CHEM 2038(or 2088), CHEM 2061(or 2091) and 2068(or 2098) with a C- or higher. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

BIOL 3104 - Behavioral Genetics

Interdisciplinary course on relationships between behavior and heredity, with emphasis on human behavioral genetics. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Cross-listed with PSYC 3104. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3124 - Introduction to Molecular Biology

Provides an understanding of the structure and function of genetic material, with respect to the regulation of gene expression and protein synthesis. Emphasizes eukaryotic systems and understanding the significance of contemporary laboratory-based research. Prereq: BIOL 3832 with a grade of C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3134 - Advanced Topics

Periodic examination of current topics in the field of biology. (See Schedule Planner for current topics). Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 8

BIOL 3137 - Advanced Special Topics with Lab

Periodic examination of current topics in the field of biology. (See Schedule Planner for current topics). Prereq: BIOL 2010 (or 2061/2097/2030) and BIOL 2011 (or 2081/2098/2031) and BIOL 2020 (or 2051/2095/2040) and BIOL 2021 (or 2071/2096/2041) with a C- or higher. Max hours: 15 Credits. **Semester Hours:** 1 to 15

BIOL 3225 - Human Physiology

The basic orientation of the course is toward understanding the functioning of the body as a set of homeostatic mechanisms. Particular emphasis is placed on membrane potentials, muscle, circulation, respiration, digestion, the kidney, the control of metabolism and acid-based balance. Note: This is a combined lecture and lab course. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, 2081/2098 and CHEM 2031/2081, 2038/2088, 2061/2091 and 2068/2098 with a C- or higher. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 3244 - Human Anatomy

This course introduces structural aspects of the human body from a systems-based approach, in both lecture and laboratory. The systems addressed include the integument, skeletal, muscular, nervous, digestive, respiratory, circulatory, immune, renal, reproductive and endocrine systems. Anatomical models, microscope slides and human cadavers are used in lab. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096 and 2081/2098 with a C- or higher. Term offered: fall, spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

BIOL 3330 - Plant Diversity

Surveys all major plant groups using evolutionary and ecological principles to interpret patterns of diversity in form and function. Topics include reproduction and life cycles, adaptations and ecological interactions, paleobotany and biogeography, classification and taxonomy and evolution. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096 and 2081/2098 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3411 - Principles of Ecology

A lecture course that examines the interrelationships between organisms and their environments. Subject matter includes organism, population and ecosystem levels of study and application to current environmental issues. The emphasis is on the underlying principles of ecology that involve all types of organisms. Note: Satisfies core ecology requirement for biology major. May not be used as upper division biology elective. No co-credit with BIOL 3412. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3413 - Ecology Laboratory

Provides hands-on experiences in ecology and appreciation for using research tools to study ecological systems. Students will learn a wide range of techniques and concepts related to population, community, ecosystem, urban, and physiological ecology. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, or be concurrently enrolled in BIOL 3411 in order to enroll in this course. Max Hours: 2 Credits. **Semester Hours:** 2 to 2

BIOL 3445 - Introduction to Evolution

Introduction to the processes and patterns of evolution. Topics include: history of evolutionary thought, origin of life, evidence for evolution , phylogenetics, evolutionary genetics, natural selection and other evolutionary forces, speciation and biodiversity , evolution of sexual reproduction and social organization. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096 and 2081/2098. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3521 - Vertebrate Biology

The Subphylum Vertebrata consists of fish, amphibians, reptiles, birds and mammals--some of the most fascinating and most threatened species on earth. This course covers the evolution, taxonomy, anatomy, physiology, ecology and conservation of these organisms. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 3525 - Parasitology

This course is designed to provide a foundation in parasitology and to improve skills in scientific writing to students interested in biodiversity, veterinarian medicine, public health, & health care. Prokaryotes are addressed briefly; the focus of this course is the natural history of 'traditional' eukaryotic parasites. Topics include evolutionary associations of parasites with plants and animals (including humans), modes of transmission, and general life cycles. Subject matter includes basic anatomy, epidemiology, and physiology, with a brief introduction to immunology. Note: may be used as an upper-division biology elective. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 3611 - General Cell Biology

Covers the structure and function of the cell including bioenergetics, membranes, secretion, respiration and the cell cycle. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, 2081/2098 and CHEM 2031/2081, 2038/2088, 2061/2091 and 2068/2098 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 3612 - Cell Biology Laboratory

Laboratory course covering topics in cell and molecular biology, such as protein folding, membrane potential, organelle function, cell signaling and fertilization; as well as associated methods, including microscopy, cell culture and PCR. Basic skills are emphasized in recitation and laboratory. Prereq: General cell biology with a grade of "C-" or higher or permission of instructor. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 3621 - Introduction to Immunology

Provides an introduction to the basic concepts of immunology, including development of the immune system, innate immunity, aspects of the adaptive immune system, and the role of the immune system in disease, as well as allergies and autoimmunity. Prereq: BIOL 3611 and 3832 with a C- or higher. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 3654 - General Microbiology

Covers all aspects of the biology of microorganisms: their cellular structures and function, growth and metabolism, general and molecular genetics, diversity and interactions with other

organisms and the environment (ecology). The objective is to provide students with a thorough introduction to microbiology including basic micro-biological laboratory techniques. Note: This is a combined lecture and lab course. Prereq: Grade of C- (1.7) or higher in BIOL 2051/2095, 2061/2097, 2071/2096, 2081/2098 & CHEM 2031/2081, 2038/2088, 2061/2091 and 2068/2098. Term offered: fall, spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

BIOL 3674 - Endocrinology

This systematic survey of the endocrine system looks at the cellular basis and biochemical characteristics of individual endocrine tissues. Their function in the regulation of other endocrinological, physiological, and behavioral events is analyzed. The course emphasizes the human system and complements studies in physiology, behavior and neurobiology. Prereq: BIOL 3611 with a grade of C- or higher. Students will not earn credit for this course if they have already earned credit for BIOL 4674. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3763 - Biostatistics

Introduces statistical thinking in biology. Emphasizes data exploration and probability-based inference methods including estimation, testing, and confronting models with data. Concepts and examples for general and applied biology, including ecology and the health sciences. Includes exposure to statistical software. Prereq: BIOL 2051/2095, BIOL 2061/2097, BIOL 2071/2096, BIOL 2081/2098 with a grade of C- or higher, and MATH 1110, or MATH 1120, or 1130, or 1401, or 2411, or 2421 or 2830 with a C- or higher. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 3804 - Developmental Biology

Covers gamete development, fertilization, and embryo development including establishing body axes, tissue differentiation and organ formation. Note: Students will not earn credit for BIOL 3804 if they have earned credit for BIOL 4054 and will not earn credit for BIOL 4054 if they have earned credit for BIOL 3804. Prereq: General cell biology with a grade of "C-" or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3832 - General Genetics

Introduces molecular, classical, developmental and population genetics. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 3840 - Independent Study

Student will contribute to ongoing faculty or graduate student's lab or field-based investigation that makes an original intellectual or creative contribution to the discipline. Associated coursework includes scientific reading/writing/presentation(s). Prereq: Students must have

completed one semester of general biology with a grade of "C-" or higher and must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

BIOL 3939 - Internship

Approved internships will provide opportunities to apply classroom knowledge in a professional environment and expand the student's knowledge of biology. Associated coursework includes scientific reading/writing and presentation(s). Prereq: BIOL 2051 or 2095 and BIOL 2061 or 2097 with a C or higher AND have junior level standing with a 2.75 GPA. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BIOL 4024 - Introduction to Biotechnology

Introduces aspects of biotechnology within a historical context, including medical, forensic, agricultural and microbial biotechnology. Addresses principles behind state-of-the-field techniques in recombinant DNA technology, bioinformatics, proteomics and genomics. Biotechnology regulations and ethics will also be discussed. Prereq: BIOL 3832 with a C- or higher. Cross-listed with BIOL 5024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4050 - Advanced Biology Topics

Examines current topics in the field of biology. Topics vary from term to term. See Schedule Planner for current topics. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Cross-listed with BIOL 5050. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

BIOL 4052 - Advanced Ecology

This combination seminar and lecture course focuses on state-of-field knowledge, current theories and recent models in selected areas of ecology, such as theoretical ecology, evolutionary ecology, population biology and ecosystems ecology. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5052. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4053 - Disease Ecology

The study of the underlying principles that influence the spatio-temporal patterns of infectious disease in environments. Students will apply ecological theories about concepts such as biodiversity, trophic interactions, landscape structure, and nutrient cycling to the study of disease. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or

higher, in order to enroll in this course. Cross-listed with BIOL 5053. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 4055 - Virology

This is an upper level undergraduate/graduate class providing an in-depth study of the history of virology, different types of viruses, viral disease, research to combat viral infections, and different uses of viruses in biotechnology. Note: Students will not earn credit for this course if they have already earned credit for BIOL 4051 or BIOL 5051. Prereq: BIOL 3611 with a grade of C- or higher. Cross-listed with BIOL 5055. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4064 - Cell Biology of Disease

Builds on the foundations laid in the prerequisite courses. How alterations in membrane transport, autophagy, mitochondria, lysosomes, cilia, unfolded protein response and autophagy lead to major human diseases. A major emphasis is the control and integration of cellular activities. Prereq: General cell biology with a C- or higher. One semester of Biochemistry is strongly recommended for optimal student success. Cross listed with BIOL 5064. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4068 - The Cell Cycle

Provides an in-depth study of the molecular regulation of the eukaryotic cell cycle. Includes mitosis, meiosis, developmental cell cycles, cell cycle checkpoints and cell cycle defects in cancer. Prereq: Students must have completed BIOL 3611 and BIOL 3832 with a C- or higher in order to enroll in this course. Biochemistry strongly recommended. Cross-listed w/BIOL 5068. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4074 - Human Reproductive Biology

Comprehensive study of anatomy and physiology of human reproduction. Embryogenesis of male and female reproductive systems and detailed analysis of contraception, world population growth, population control and implications of population growth are also covered. Prereq: BIOL 3611 with a C- or higher. Cross-listed with BIOL 5074. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4125 - Molecular Biology Laboratory

Provides hands-on experiences in molecular biology and an appreciation for using the tools of molecular biology to study biological systems. Emphasis is placed on DNA cloning, PCR, mRNA and protein detection in the context of gene editing. Experimental design and the theories underlying the techniques are also discussed. Prereq: BIOL 3124 with a C- or higher or Coreq: BIOL 3124. Cross-listed with BIOL 5125. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4126 - Molecular Genetics

Examines molecular techniques and their application to experimental genetics, specifically organization and mapping of genomes, application and model systems in defining hereditary components of disease, and mechanisms of identifying mutations and their implications for disease. Also addresses application of recombinant DNA technology. Prereq: Completion of Introduction to Molecular Biology with a C- or higher is required in order for students to enroll in this course. Cross-listed with BIOL 5126. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4128 - Topics in Molecular Biology

Literature-based course examining the regulation of gene expression in eukaryotic systems, as well as contemporary recombinant DNA technology and applications of molecular cloning techniques. Prereq: BIOL 3124 with a C- or higher; biochemistry strongly recommended. Cross-listed with BIOL 5128. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4134 - Human Genetics

Advanced survey of the current status of the field. Emphasis on understanding, diagnosis and treatment of genetic disease and on the impact of molecular biology on human genetics. Prereq: General genetics with a grade of "C-" or higher. Cross-listed with 5134. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4144 - Medical Microbiology

Provides an understanding of the relationship between pathogenic organisms and their host. Emphasis is placed on the area of medical bacteriology, with attention given to mechanisms of pathogenesis, genetics of disease, serology and treatment. Prereq: general microbiology with a grade of "C-" or higher. Cross-listed with BIOL 5144. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4154 - Conservation Biology

Basic concepts and theories in ecology, population biology and genetics as they apply to issues relating to the preservation of biodiversity, such as the genetics of small populations, captive propagation, restoration ecology and the design of nature reserves. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5154. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4165 - Neurobiology

Overview of neuroscience, covering the cellular basis of neuronal activity, muscle, sensory structures and the structure and function of the human brain. Prereq: BIOL 3611 and PSYC 2220

with a C- or higher OR BIOL 3225 with a C- or higher. Cross-listed with BIOL 5165. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4225 - Genomics and Bioinformatics

Explores how genome-wide data are collected and analyzed. Example applications include human disease, microbial evolution, ecological genomics, and parasite drug resistance. Students implement projects based on real DNA sequencing data. Prereq: BIOL 3832 with a C- or higher. Cross-listed with BIOL 5225. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4250 - Mechanisms of Animal Behavior

The proximate and ultimate mechanisms of animal behavior are analyzed using comparative animal examples from the scientific literature. Proximate mechanisms include genetic and physiological processes. Ultimate mechanisms include the role of natural and sexual selection in the evolution of behavior. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Genetics and human physiology are recommended. Cross-listed with BIOL 5250. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4315 - Plant Systematics

Lecture, lab and field trips. Extensive introduction to the basic principles and concepts of vascular plant systematics. Topics include principles of taxonomy, nomenclature, methods, systems of classification and field and herbarium procedures. Emphasis on plant structure and identification using fresh, frozen and pressed plant specimens. Prereq: One year of general biology with a grade of "C-" or higher. Cross-listed with BIOL 5315. Max hours: 4 Credits.

Semester Hours: 4 to 4

BIOL 4335 - Plant Science

Lecture, lab and field trips. An in-depth study of flowering plants, including embryology, structure, function, reproduction, ecology and evolution of the group. Emphasis is placed upon morphology and anatomy at all stages of plant development. Prereq: One year of General Cell Biology (BIOL 3611) with a grade of "C-" or higher. Cross-listed with BIOL 5335. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 4345 - Flora of Colorado

Lecture, lab and field trips. Introduces the vascular plant flora of Colorado, including ferns, gymnosperms and flowering plants. Emphasis on field identification of species representing a range of natural communities from grassland to alpine tundra, as well as non-natives. Field and herbarium techniques covered. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5345. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 4415 - Microbial Ecology

An in-depth study of ecology as it relates to microorganisms; abiotic and biotic interactions within microbial populations in macro- and microhabitats; and the role of microorganisms in maintaining steady state conditions in natural ecosystems. Emphasis is placed on how the ecology of microorganisms affects the human condition. Prereq: General microbiology with a grade of "C-" or higher. Cross-listed with BIOL 5415. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4416 - Aquatic Ecology

This advanced ecology course examines the inter-relations of biological (including humans), physical and chemical components of wetlands, streams, rivers, lakes, reservoirs and groundwater. Learning is facilitated through lectures, discussions, student presentations, laboratory and field exercises. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5416. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4425 - Biogeography

An in-depth study of biological populations through analysis of geographic distribution patterns in space and time. Emphasis on how biogeography informs studies of evolution and ecology and on applied studies in conservation, sustainability, epidemiology, and disease dynamics. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5425. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4430 - Introduction to Spatial Ecology

Focuses on patterns of life and ecological interactions in space. Emphasis on drivers of patterns, practical application of spatial ecology software, programming, and introductory spatial statistics on the quantification of patterns. Main topics: Scale and scaling, pattern development, detecting and characterizing patterns, temporal dynamics, and implications of spatial structure to conservation biology, resilience, and ecosystem functioning. Cross-listed with BIOL 5430. Prereq: BIOL 3411 with C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4450 - Marine Biology

Looks at the fascinating organisms that inhabit the oceans, which represent 99% of the living space of earth. While the focus is on the ecology of marine organisms, taxonomy, physiology and anatomy are also covered. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Cross-listed with BIOL 5450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4455 - Comparative Environmental Physiology

This advanced physiology course explores the physiological evolutionary adaptations of different animals in the context of their environment. Content includes exploration of maintenance of homeostasis via feedback regulation, structure-function relationships, cellular physiology, and the study of organ systems including the nervous, endocrine, respiratory, reproductive and cardiovascular systems. Prereq: BIOL 3611 with a grade of C- or higher. Cross-listed with BIOL 5455. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4460 - Environmental Toxicology

Text and literature-based course provides students with background knowledge concerning environmental toxins, the nature and extent of environmental contamination, and toxicant effects on individual organisms and populations. Prereq: BIOL 3611 with a grade of C- or higher. Cross-listed with BIOL 5460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4464 - Exercise Physiology

This course addresses the dynamic physiological changes associated with exercise. Where human physiology addresses physiological processes at rest, this course explores how the cardiovascular, respiratory, nervous and endocrine systems support increased energy transfer as skeletal muscle becomes more active. Prereq: Human Physiology (BIOL 3225 or equivalent) with a grade of C- or higher. Cross-listed with BIOL 5464. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4474 - Ecological Methods

Deals with the empirical aspects of an ecological study. Students learn sampling techniques that are used in plant and animal ecology. Emphasis is placed on hypothesis testing, data analysis and experimental field designs. Prereq: Students must have completed BIOL 3411 (Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5474. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 4475 - Mechanisms of Human Pathology

Studies physiological, cellular and biochemical processes in human diseases. Mechanisms of inflammatory diseases, infectious diseases, neoplastic diseases, and others will be examined. Prereq: BIOL 3225 or BIOL 3244 with a grade of C- or higher. Cross-listed with BIOL 5475. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4494 - Population and Evolutionary Genetics

Introduces the genetic processes underlying evolutionary change in microbial, plant and animal populations. Topics include: sources of variation, Hardy-Weinberg equilibrium, population

genetic structure, natural selection and other evolutionary forces, quantitative genetics and molecular phylogenetics. Emphasis on experimental data. Prereq: Completion of General Genetics and Introduction to Evolution with a C- or higher is required in order for students to enroll in this course. Cross-listed with BIOL 5494. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4550 - Cell Signaling

Lecture by faculty and student presentations cover mechanism of hormones and regulation of various cellular processes through second messenger systems. Prereq: General cell biology with a grade of "C-" or higher; one semester of biochemistry recommended. Cross-listed with BIOL 5550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4622 - Topics in Immunology

An in-depth study of immunological concepts. Topics will vary from semester to semester and may range from specifics of immune cell responses to tolerance and autoimmunity. Delivery will include lecture, student presentations, and discussion. Prereq: BIOL 3621 with a C- or higher. Cross-listed with BIOL 5622. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4634 - Biology of Cancer

Cancer is the second leading cause of death in the United States. This course offers an overview of recent research into the causes, treatments and possible prevention of cancer. Includes a detailed look at the mechanisms of action of various oncogenes. Prereq: BIOL 3611 and BIOL 3832 with a C- or higher. Cross-listed with BIOL 5634. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4640 - Mammalogy

Lecture, laboratory, and required field trips. This course provides a general overview of the biology of mammals, including their diversity, distribution, economic importance, and other characteristics that make them of special interest to humans. Coverage will be worldwide, with special emphasis placed on the mammals of Colorado. Prereq: BIOL 3411 with a grade of C- or higher. Cross-listed with BIOL 5640. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 4644 - Advanced Human Anatomy Laboratory

Advanced laboratory course in human anatomy. In-depth look at the structural aspects of the human body, emphasizing function. Models, microscope slides, and visual media will supplement cadaver-based dissections. Prereq: One year of general biology and human anatomy with a grade of "C-" (2.0) or higher. Cross-listed with BIOL 5644. Term offered: fall, spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

BIOL 4674 - Endocrinology

This systematic survey of the endocrine system looks at the cellular basis and biochemical characteristics of individual endocrine tissues. Their function in the regulation of other endocrinological, physiological, and behavioral events is analyzed. The course emphasizes the human system and complements studies in physiology, behavior and neurobiology. Prereq: BIOL 3611 with a grade of C- or higher. Students will not earn credit for this course if they have already earned credit for BIOL 4674. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4815 - Structural Biology of Neurodegenerative Diseases

Advanced course in Biochemistry/Biophysics. Principles of Protein Folding, Structure-Function Relationship, and spectroscopic techniques related to characterization of these processes as applied to neurodegenerative diseases such as Parkinson's and Alzheimer's. Prereq: 1) BIOL 2051 & BIOL 2071 or BIOL 2095 & BIOL 2096, and 2) CHEM 3810 or CHEM 4810 or CHEM 5810. Coreq: PHYS 2020 or PHYS 2331. Cross-listed with CHEM 4815, CHEM 5815, and BIOL 5815. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4825 - Biochemistry of Metabolic Disease

Advanced course in biochemistry. An expanded study of selected topics in metabolism and how they relate to diseases, including inflammation, diabetes, obesity, and rare genetic disorders. Prereq: 1) CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher, and 2) BIOL 2051 & BIOL 2071 or BIOL 2095 and BIOL 2096 with a C- or higher. Cross-listed with CHEM 4825, CHEM 5825, and BIOL 5825. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4835 - Biochemistry of Gene Regulation and Cancer

Explores the biochemical and molecular aspects of cancer biology. Topics include DNA mutations and repair, gene regulation, oncogenes and tumor suppressors, stem cells and differentiation, and cancer drug development. Prereq: 1) CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher, and 2) BIOL 2051 & 2071 or BIOL 2095 & BIOL 2096 with a C- or higher. Cross-listed with CHEM 4835, CHEM 5835, and BIOL 5835. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4840 - Independent Study

Student will contribute to ongoing faculty or graduate student's lab or field-based investigation that makes an original intellectual or creative contribution to the discipline. Associated coursework includes scientific reading/writing/presentation(s). Note: Registration by special processing form only. Prereq: Students must have completed one year of general biology with a grade of "C-" or higher and must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments

and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

BIOL 4880 - Directed Research

A student designed lab or field-based investigation that involves data collection, and that makes an original intellectual or creative contribution to the discipline. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOL 4910 - Field Studies

Field studies of individuals, populations and communities comprising a specified ecosystem. Emphasis on field identification of vascular plants and vertebrate animals. Topics include the physical environment, biotic and abiotic interactions, life history, ecological adaptations and biogeography. Note: Lectures and a week-long field trip. Prereq: Students must have completed BIOL 3411(Principles of Ecology) with a C- or higher, in order to enroll in this course. Cross-listed with BIOL 5910. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 3

BIOL 4974 - Advanced Evolution

A capstone course that draws upon concepts from all fields of biology. Topics include the fossil record, mass extinctions, the historical development of the modern synthesis, principles and mechanisms of evolution, current viewpoints and controversies. Prereq: BIOL 3445 and 3832 with a C- or higher. Cross-listed with BIOL 5974. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 4990 - Undergraduate Research Seminar

Introduces research in the biological sciences. Students read current scientific literature, attend related seminars and participate in discussions. This course offers students a chance to interact with visiting scientists, who will present state-of-the-field biological research in a seminar setting. Prereq: Senior standing, satisfactory completion of all biology core courses, overall GPA of 3.0 or higher and permission of instructor. Cross-listed with BIOL 6655. Max hours: 1 Credit. **Semester Hours:** 1 to 1

BIOL 5024 - Introduction to Biotechnology

Introduces aspects of biotechnology within a historical context, including medical, forensic, agricultural and microbial biotechnology. Addresses principles behind state-of-the-field techniques in recombinant DNA technology, bioinformatics, proteomics and genomics. Biotechnology regulations and ethics will also be discussed. Restriction: Restricted to degree granting graduate programs on the downtown campus as well as the School of Medicine on the

Anschutz Medical campus. Cross-listed with BIOL 4024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5050 - Advanced Biology Topics

Examines current topics in the field of biology. Topics vary from term to term. See Schedule Planner for current topics. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4050. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 8

BIOL 5052 - Advanced Ecology

This combination seminar and lecture course focuses on state-of-field knowledge, current theories and recent models in selected areas of ecology, such as theoretical ecology, evolutionary ecology, population biology and ecosystems ecology. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4052. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5053 - Disease Ecology

The study of the underlying principles that influence the spatio-temporal patterns of infectious disease in environments. Students will apply ecological theories about concepts such as biodiversity, trophic interactions, landscape structure, and nutrient cycling to the study of disease. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4053. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5055 - Virology

This is an upper level undergraduate/graduate class providing an in-depth study of the history of virology, different types of viruses, viral disease, research to combat viral infections, and different uses of viruses in biotechnology. Note: Students will not earn credit for this course if they have already earned credit for BIOL 4051 or BIOL 5051. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4055. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5064 - Cell Biology of Disease

Builds on the foundations laid in the prerequisite courses. How alterations in membrane transport, autophagy, mitochondria, lysosomes, cilia, unfolded protein response and autophagy lead to major human diseases. A major emphasis is the control and integration of cellular activities. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4064. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5068 - The Cell Cycle

Provides an in-depth study of the molecular regulation of the eukaryotic cell cycle. Includes mitosis, meiosis, developmental cell cycles, cell cycle checkpoints and cell cycle defects in cancer. Restriction: Restricted to degree-granting graduate programs. Cross-listed w/BIOL 4068. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5074 - Human Reproductive Biology

Comprehensive study of anatomy and physiology of human reproduction. Embryogenesis of male and female reproductive systems and detailed analysis of contraception, world population growth, population control and implications of population growth are also covered. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4074. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5125 - Molecular Biology Lab

Provides hands-on experiences in molecular biology and an appreciation for using the tools of molecular biology to study biological systems. Emphasis is placed on DNA cloning, PCR, mRNA and protein detection in the context of gene editing. Experimental design and the theories underlying the techniques are also discussed. Restriction: Restricted to degree granting graduate programs on the downtown campus as well as the School of Medicine on the Anschutz Medical campus. Cross-listed with BIOL 4125. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5126 - Molecular Genetics

Examines molecular techniques and their application to experimental genetics, specifically organization and mapping of genomes, application and model systems in defining hereditary components of disease, and mechanisms of identifying mutations and their implications for disease. Also addresses application of recombinant DNA technology. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4126. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5134 - Human Genetics

Advanced survey of the current status of the field. Emphasis on understanding, diagnosis and treatment of genetic disease and on the impact of molecular biology on human genetics. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4134. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5144 - Medical Microbiology

Provides an understanding of the relationship between pathogenic organisms and their host. Emphasis is placed on the area of medical bacteriology, with attention given to mechanisms of pathogenesis, genetics of disease, serology and treatment. Restriction: Restricted to degree-

granting graduate programs. Cross-listed with BIOL 4144. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5154 - Conservation Biology

Basic concepts and theories in population biology and genetics as they apply to issues relating to the preservation of biodiversity, such as the genetics of small populations, captive propagation, restoration ecology and the design of nature reserves. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4154. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 5165 - Neurobiology

Overview of neuroscience, covering the cellular basis of neuronal activity, muscle, sensory structures and the structure and function of the human brain. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4165. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

BIOL 5225 - Genomics and Bioinformatics

Explores how genome-wide data are collected and analyzed. Example applications include human disease, microbial evolution, ecological genomics, and parasite drug resistance. Students implement projects based on real DNA sequencing data. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4225. Max hours: 3 Credits.

Semester Hours: 3 to 3

BIOL 5250 - Mechanisms of Animal Behavior

The proximate and ultimate mechanisms of animal behavior are analyzed using comparative animal examples from the scientific literature. Proximate mechanisms include genetic and physiological processes. Ultimate mechanisms include the role of natural and sexual selection in the evolution of behavior. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4250. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5335 - Plant Science

Lecture, lab and field trips. An in-depth study of flowering plants, including embryology, structure, function, reproduction, ecology and evolution of the group. Emphasis is placed upon morphology and anatomy at all stages of plant development. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4335. Max hours: 4 Credits. **Semester**

Hours: 4 to 4

BIOL 5345 - Flora of Colorado

Lecture, lab and field trips. Introduces the vascular plant flora of Colorado, including ferns, gymnosperms and flowering plants. Emphasis on field identification of species representing a range of natural communities from grassland to alpine tundra, as well as non-natives. Field and herbarium techniques covered. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4345. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 5415 - Microbial Ecology

An in-depth study of ecology as it relates to microorganisms; abiotic and biotic interactions within microbial populations in macro- and microhabitats; and the role of microorganisms in maintaining steady state conditions in natural ecosystems. Emphasis is placed on how the ecology of microorganisms affects the human condition. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4415. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5416 - Aquatic Ecology

This advanced ecology course examines the inter-relations of biological (including humans), physical and chemical components of wetlands, streams, rivers, lakes, reservoirs and groundwater. Learning is facilitated through lectures, discussions, student presentations, laboratory and field exercises. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4416. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5425 - Biogeography

An in-depth study of biological populations through analysis of geographic distribution patterns in space and time. Emphasis on how biogeography informs studies of evolution and ecology and on applied studies in conservation, sustainability, epidemiology, and disease dynamics. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4425. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5430 - Introduction to Spatial Ecology

Focuses on patterns of life and ecological interactions in space. Emphasis on drivers of patterns, practical application of spatial ecology software, programming, and introductory spatial statistics on the quantification of patterns. Main topics: Scale and scaling, pattern development, detecting and characterizing patterns, temporal dynamics, and implications of spatial structure to conservation biology, resilience, and ecosystem functioning. Cross-listed with BIOL 4430. Restriction: Restricted to degree-granting graduate programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5450 - Marine Biology

Looks at the fascinating organisms that inhabit the oceans, which represent 99% of the living space of earth. While the focus is on the ecology of marine organisms, taxonomy, physiology and anatomy are also covered. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5455 - Comparative Environmental Physiology

This advanced physiology course explores the physiological evolutionary adaptations of different animals in the context of their environment. Content includes exploration of maintenance of homeostasis via feedback regulation, structure-function relationships, cellular physiology, and the study of organ systems including the nervous, endocrine, respiratory, reproductive and cardiovascular systems. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4455. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5460 - Environmental Toxicology

Text and literature-based course provides students with background knowledge concerning environmental toxins, the nature and extent of environmental contamination, and toxicant effects on individual organisms and populations. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5464 - Exercise Physiology

This course addresses the dynamic physiological changes associated with exercise. Where human physiology addresses physiological processes at rest, this course explores how the cardiovascular, respiratory, nervous and endocrine systems support increased energy transfer as skeletal muscle becomes more active. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4464. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5474 - Ecological Methods

Lecture, laboratory. Deals with the empirical aspects of an ecological study. Students learn sampling techniques that are used in plant and animal ecology. Emphasis is placed on hypothesis testing, data analysis and experimental field designs. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4474. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 5494 - Population and Evolutionary Genetics

Introduces the genetic processes underlying evolutionary change in microbial, plant and animal populations. Topics include: sources of variation, Hardy-Weinberg equilibrium, population genetic structure, natural selection and other evolutionary forces, quantitative genetics and molecular phylogenetics. Emphasis on experimental data. Restriction: Restricted to degree-

granting graduate programs. Cross-listed with BIOL 4494. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5550 - Cell Signaling

Lecture by faculty and student presentations cover mechanism of hormones and regulation of various cellular processes through second messenger systems. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5634 - Biology of Cancer

Cancer is the second leading cause of death in the United States. This course offers an overview of recent research into the causes, treatments and possible prevention of cancer. Includes a detailed look at the mechanisms of action of various oncogenes. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4634. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5640 - Mammalogy

Lecture, laboratory, and required field trips. This course provides a general overview of the biology of mammals, including their diversity, distribution, economic importance, and other characteristics that make them of special interest to humans. Coverage will be worldwide, with special emphasis placed on the mammals of Colorado. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4640. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 5644 - Advanced Human Anatomy Laboratory

Advanced laboratory course in human anatomy. In-depth look at the structural aspects of the human body, emphasizing function. Models, microscope slides, and visual media will supplement cadaver-based dissections. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4644. Term offered: fall, spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

BIOL 5815 - Structural Biology of Neurodegenerative Diseases

Advanced course in Biochemistry/Biophysics. Principles of Protein Folding, Structure-Function Relationship, and spectroscopic techniques related to characterization of these processes as applied to neurodegenerative diseases such as Parkinson's and Alzheimer's. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4815, BIOL 4815, and BIOL 4815. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5825 - Biochemistry of Metabolic Disease

Advanced course in biochemistry. An expanded study of selected topics in metabolism and how they relate to diseases, including inflammation, diabetes, obesity, and rare genetic disorders. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4825, CHEM 5825, and BIOL 4825. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5835 - Biochemistry of Gene Regulation and Cancer

Explores the biochemical and molecular aspects of cancer biology. Topics include DNA mutations and repair, gene regulation, oncogenes and tumor suppressors, stem cells and differentiation, and cancer drug development. Restriction: Restricted to degree-granting graduate programs Cross-listed with CHEM 4835, CHEM 5835, and BIOL 4835. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 5840 - Independent Study: BIOL

Note: Registration by special processing form only. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

BIOL 5939 - Internship

Designed experience involving application of specific, relevant concepts and skills in supervised employment situations. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

BIOL 5974 - Advanced Evolution

A capstone course that draws upon concepts from all fields of biology. Topics include the fossil record mass extinctions, the historical development of the modern synthesis, principles and mechanisms of evolution, current viewpoints and controversies. Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4974. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 6002 - Biology Skills Sets - Pedagogy

The purpose is to introduce sound practice in teaching and innovation in pedagogy. Topics covered will include assessment techniques, creation of learning goals, and research methods in biological education. Restriction: Restricted to degree-granting graduate programs. Term offered: fall. Max hours: 1 Credit. **Semester Hours:** 2 to 2

BIOL 6655 - Seminar

Restriction: Restricted to degree-granting graduate programs. Cross-listed with BIOL 4990.
Term offered: fall, spring. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

BIOL 6705 - Biological Research Workshop

For graduate and advanced undergraduate students who are directly engaged in original research. Provides introduction to the discovery dissemination and peer review process associated with writing research proposals, manuscripts, and grants, as well as poster and oral presentations. Students will workshop each other's original research. Graduate students enroll in 6705; research-active undergraduates enroll in 5705. Cross-listed with BIOL 5705. Prereq: Students involved in original research and permission of instructor. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 2 to 2

BIOL 6764 - Biological Data Analysis

Addresses quantitative aspects of research design, data collection and analysis in the biological sciences. Emphasizes relationships among probability theory, estimation, testing, inference, and interpretation. Includes intensive computer lab using the statistical programming software R to demonstrate both traditional analytical and contemporary simulation based (permutation, bootstrap, and Bayesian) approaches for inference in biology. Restriction: Restricted to degree-granting graduate programs. Max hours: 4 Credits. **Semester Hours:** 4 to 4

BIOL 6880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BIOL 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 8

BIOL 7010 - Integrative and Systems Biology

Addresses current research problems in integrative biology and system biology by surveying the peer-reviewed literature. Particular attention will be paid to research topics that integrate multiple levels of biological organization and that investigate how properties of systems emerge from interactions of sub-units. Note: New students in the Integrative and Systems Biology PhD program will enroll in this course during their first year. Restriction: Restricted to degree-granting graduate programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BIOL 7050 - Special Topics

Readings in current biology topics. Specific topics vary and may be proposed by groups of graduate students who identify a suitable faculty instructor or by a faculty member who identifies a need for advanced study in a specialized topic of biology. Restriction: Restricted to degree-granting graduate programs. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BIOL 7650 - Research in Integrative and Systems Biology

Designed to allow doctoral students to conduct research for course credit prior to advancement to candidacy. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Ph.D. student and permission of instructor. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max Hours: 10 Credits. **Semester Hours:** 1 to 10

BIOL 7920 - Directed Reading/Grant Writing

Allows students to examine current literature related to their specialty area of biological research and to work in collaboration with a research mentor to develop a grant-based dissertation proposal in preparation for the comprehensive review examination. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Students must be in the Integrative and Systems Biology PhD program and have permission from the instructor. Restriction: Restricted to degree-granting graduate programs. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

BIOL 8990 - Doctoral Dissertation

Designed to allow doctoral students to conduct research for course credit prior to advancement to candidacy. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Students must be in the Integrative and Systems Biology PhD program and have permission from the instructor. Restriction:

Restricted to degree-granting graduate programs. Term offered: fall, spring, summer.
Repeatable. Max hours: 60 Credits. **Semester Hours:** 1 to 10

Bus Minor for non-bus majors

BMIN 1000 - Introduction to Business

The business and economic landscape is introduced illustrating the challenges and opportunities in today's business environment. A foundation in traditional business disciplines is introduced including the principles and terminology employed in Marketing, Management, Finance, Accounting, Operations, and Economics. This course is cross-listed with MGMT 1000. Restriction: Students enrolled in the Business School are not eligible for this course. Note: Students seeking a Minor in Business Fundamentals are encouraged to enroll in BMIN 1000 as their first course. However, BMIN 1000 may be taken as a co-requisite with BMIN 3001, 3002 or 3003 or ENTP 3000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BMIN 1010 - Introduction to Business -- Career Planning

Students will explore their best career choices based on assessments and their personality type. They will learn what strengths they bring to a team and to their individual management style utilizing the Myers Briggs Type Indicator and Strong Interest Inventory assessments. Topics covered include: career exploration, career and internship planning, personality styles and strengths, working with executives, corporate culture overview, business trends and news, and analysis of Fortune 100 companies. Supplemental topics include: resume writing, effective interviewing, time management, business writing and hiring trends. Restriction: Students enrolled in the Business School are not eligible for this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BMIN 3001 - Fundamentals of Management and Marketing

Comprised of two modules focusing on essential concepts of Management and Marketing: 1) Management: Including organizational behavior concepts, leadership, management skills and methods and team dynamics 2) Marketing: Students will develop a new product marketing plan including, industry and market research, market segmentation, marketing mix planning and implementation strategies. Restriction: Students enrolled in the Business School are not eligible for this course. Co-req: BMIN 1000 or MGMT 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BMIN 3002 - Fundamentals of Accounting and Finance

Comprised of two modules focusing on essential concepts of 1) Accounting: including the use of information in financial reports and in making business decisions, and 2) Finance: including financial markets, capital structure, time-value of money, valuation and capital budgeting.

Restriction: Students enrolled in the Business School are not eligible for this course. Co-req: BMIN 1000 or MGMT 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BMIN 3004 - Principles of Strategic Management

Students will examine the critical issues related to running sustainable businesses. Using the strategic management model as a framework, the course focuses primarily on developing and implementing corporate strategy. Topics covered include mission, vision and values; corporate social responsibility; competitive analysis; leveraging core competencies; developing a business model, and creating value. Supplemental topics include how to create competitive advantage through innovation, choosing an appropriate legal business entity, and managing risk. This is a capstone course and synthesizes key concepts from other Cohort Business Minor courses including entrepreneurship, accounting & finance, management, and marketing. Restriction: Students enrolled in the Business School are not eligible for this course. Prereq: BMIN 3001, BMIN 3002, Junior-Level Standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Business

BUSN 1110 - Intro to Investment Services Careers

Open to all majors! Provides a comprehensive overview of careers in the Investment Services industry. Emphasis will be on interactions with industry professionals to provide hands-on knowledge and opportunities for in-depth discussion. Students are required to participate in a site visit to an investment services company during the course. Max hours: 1 Credit. **Semester Hours:** 1 to 1

BUSN 1200 - Career and Professional Development

This first year course develops a student's professional skills, providing knowledge on key factors for early and long-term career success. Through applied learning and career-oriented experiences, the course covers: career and major exploration, student resources, resume writing, interview skills, business communications, professional etiquette, emotional intelligence, time management, ethical behavior, and workplace expectations. Students will have opportunities to develop their own professional network with business leaders as new members of the Business School. Restriction: Restricted to freshman level Business School majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 5939 - Internship

Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BUSN 6520 - Leading Individuals and Teams

Students learn the strengths and weaknesses of their management style and how to work effectively with individual differences. Students also learn how to form teams around purpose/task, diagnose problems and identify and implement solutions by utilizing leadership skills such as setting goals, processes and measures, interpersonal communication, motivation and conflict management. Students develop an understanding of the effect of the organizational and social context on the behavior of individuals and teams. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6521 - Leading Individuals and Teams

Students learn the strengths and weaknesses of their management style and how to work effectively with individual differences. Students also learn how to form teams around purpose/task, diagnose problems and identify and implement solutions by utilizing leadership skills such as setting goals, processes and measures, interpersonal communication, motivation and conflict management. Students develop an understanding of the effect of the organizational and social context on the behavior of individuals and teams. The emphasis is on health care issues and is intended for health care students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6530 - Data Analytics for Managers

Provides an overview of techniques for data analysis, including multiple regression, sampling theory and applications of probabilistic inference from sample data. The emphasis is upon the applications of these techniques to management problems. Students are required to analyze data sets, present their analyses in written or oral form and defend their conclusions.

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6540 - Legal and Ethical Environment of Business

Students develop a working knowledge of legal and ethical parameters for business decision making. The course addresses the legal system and mechanisms for resolving disputes. Topics include constitutional law, torts, product liability, contracts, property law, consumer protection, intellectual property, business entities and employment law. It stresses the influence of legal issues on organizational decision making. Note: Students can substitute ENTP 6822 but credit cannot be received for both. Health Administration students must take BUSN 6541. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6541 - Legal and Ethical Environment of Business (Health Section)

Students develop a working knowledge of legal and ethical parameters for business decision making. Addresses the legal system and mechanisms for resolving disputes. Topics include

business entities, torts, contracts, employment relationships, litigation and alternative dispute resolution. It stresses the influence of legal issues on organization and decision making. The emphasis is on health care issues and is intended for health care students. Max hours: 3 Credits.

Semester Hours: 3 to 3

BUSN 6550 - Analyzing and Interpreting Accounting Information

Emphasizes the use of accounting statements and data in making business decisions. External financial accounting information and concepts are used for investment and credit decisions. Internal managerial accounting information and concepts are used for product costing, cost analysis and management control. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6560 - Marketing Dynamics in the 21st Century

This course focuses on the art, science, and practice of managing dynamic market environments and making decisions about alternative marketing strategies. Students use analytical frameworks to inform decision-making about the many specific aspects of marketing: e.g., value proposition, target markets, positioning, products, channels of distribution, pricing, communication, and service. Participants learn how to integrate these elements into a Marketing Plan. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6561 - Marketing Management (Health Section)

Focuses on the formulation and implementation of a marketing plan in the context of the firm's strengths, overall strategy and competitive environment. Emphasis is on understanding the marketing environment and on decision making skills regarding market selection, pricing, promotion, product configuration and management of distribution channels. Restrictions: Restricted to HLAB and MBAH majors within the Business School. Max hours: 3 Credits.

Semester Hours: 3 to 3

BUSN 6610 - Information Systems Strategy

Digital strategy is the application of digital technologies to business models to form new differentiating business capabilities. The course starts with the highlights of genesis and importance of IT in organizations, including the relationship between digital technology and competitiveness. Then, the development and management of an effective digital infrastructure are discussed. Realizing that the effective use of digital technology requires the alignment of competitive strategies, business processes, and applications, the course takes a top management perspective on the development of policies and plans that maximize the contribution of digital technologies to organizational goals. A broad overview of how systems support the operational, administrative, and strategic needs of organizations is covered. Note:

Students cannot receive credit if they have taken BUSN 6810 or ISMG 6180. Cross-listed with ISMG 6180. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6620 - Applied Economics for Managers

After taking this course, students should be able to apply economic principles to make optimal decisions given firm cost, demand and market circumstances. Also, they should be able to analyze the firm's interactions with its competitive market environment. Students will learn basic aspects of federal macroeconomic policy designed to achieve stable prices and economic growth. Also, they will learn to understand the measurement of output (GDP), employment and prices; the conduct of monetary and fiscal policy; and the balance of trade. Co-req: BUSN 6550 or ACCT 6030 or ACCT 6031 and BUSN 6530 or FNCE 6290 or BANA 6610. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6621 - Applied Economics for Managers (Health Section)

After taking this course, students should be able to apply economic principles to make optimal decisions given firm cost, demand and market circumstances. Also, they should be able to analyze the firm's interactions with its competitive market environment. Students should understand basic aspects of federal macroeconomics policy designed to achieve stable prices and economic growth. Also, they should understand basic aspects of government regulation of business. The emphasis is on healthcare issues and is intended for healthcare students. Co-req: BUSN 6550 or ACCT 6030 or ACCT 6031 and BUSN 6530 or FNCE 6290 or BANA 6610. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6630 - Management of Operations

This course is concerned with the production and delivery of goods and services. It provides an overview of a variety of contemporary Operation Management topics using current techniques and modeling to solve and understand key issues. Basic Excel skills are required. The use of model-assisted decision making is emphasized. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6640 - Financial Management

This course is concerned with the business firm's decisions to make investments and to finance its operations. Students learn to use the tools and theories underlying business valuation, cost of capital, capital budgeting and capital structure. Students will learn to evaluate a firm's financial position through the examination of its financial statements and to prepare pro forma

statements for the firm. Prereq: BUSN 6550 with a grade of C or better. Coreq: BUSN 6530 or FNCE 6290 or BANA 6610 and BUSN 6620 or BUSN 6621. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6710 - Strategic Management

Concerned with the development of a general management perspective in establishing the strategic direction for an enterprise. Students gain an understanding of strategy formulation and implementation within the context of the global environment. Emphasis is on the integration of knowledge acquired in the previous functional area courses. Note: This course is intended as a final semester Capstone course. Coreq: BUSN 6560 or 6561, BUSN 6630 or BUSN 6631; and BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6711 - Strategic Management (Health Section)

Concerned with the development of a general management perspective in establishing the strategic direction for a health delivery organization. Students gain an understanding of strategy formulation and implementation within the context of the managed care environment. Emphasis is on the integration of knowledge acquired in the previous functional area courses. Note: This course is intended as a final semester course. Required of Health Administration majors. Coreq: BUSN 6560 or BUSN 6561, and BUSN 6640. Restrictions: Restricted to HLAB and MBAH majors within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6800 - Topics In Business

Current topics in business are occasionally offered. Prerequisites vary depending on the material covered. Consult the current 'schedule planner' for specific offerings and prerequisites. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

BUSN 6807 - Analyzing Emerging Opps & Planning During Uncertain Time

To develop strategic thinking and practical planning skills. Prepare students for the dynamic and uncertain business environment of today. More specifically, we explore how to think innovatively and spot trends, develop formal business plans around emerging opportunities, address uncertain and volatile situations using scenarios. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6811 - IT and New Business Paradigms

Introduces graduate students to the relationship between information technology and the other functional areas of the business. During the course, students have an opportunity to

listen and learn from guest speakers who have been involved with either guiding or interpreting the impact of information technology among functional areas of existing or new business. Through the use of current readings, guest lectures and case analysis, students examine various models of IT and new business paradigms to determine the decisions and success criteria for integrating it in ongoing business. A unique feature of the class will be the opportunity for students to present proposals and projects to be critiqued by individuals with IT or business experience. Those individuals provide feedback and perspectives regarding potential IT or new business paradigm activities. Prereq: Permission of instructor. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6812 - Business Intelligence and Analytics

This course covers the collection of computer technologies that support decision making. These technologies have had a profound impact on corporate strategy, performance, and competitiveness. These techniques broadly encompass analytics, business intelligence, and decision support systems. The discussion is organized around key enablers of the three types of analytics (1) descriptive analytics including data warehousing, business reporting, decision dashboard/ scorecards, visual analytics, (2) predictive analytics including Web Analytics, Web Mining and Social media Analytics, and (3) prescriptive analytics including decision analytics and big data analytics. The course concludes with emerging trends and topics in business analytics, including geospatial in analytics, location-based and consumer-oriented analytical applications, mobile platforms, and cloud-based analytics. The recommended prerequisite for this course is ISMG 6080. If you are familiar with database management systems and have worked with such systems (e.g., ACCESS) in the past, you satisfy the prerequisite requirements for this course. Cross-listed with ISMG 6220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BUSN 6840 - Independent Study

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 3

BUSN 6860 - Finance in the Sports Entertainment Industries

This course explores the problems and solutions of financing in sports and entertainment business. It focuses on stadium/venue financing, sports team valuation, entertainment event guarantee estimation, player/artist salary issues and managing disparate revenue streams. The course utilizes speakers, articles, problem sets and cases. Prereq: BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Business Analytics

BANA 2010 - Business Statistics

Basic principles of probability and statistics with applications in business. Includes descriptive statistics, probability and probability distributions, data collection, sampling distributions, statistical inference, simple regression and the use of a computer to perform statistical analysis. Students are required to present their analyses in written and/or oral form and defend their conclusions. This is a business core course. Therefore a grade of a 'C-' or better must be earned to satisfy Business graduation requirements and prerequisites for other business courses. Prereq: MATH 1070, or MATH 1060, or MATH 1080, or MATH 1110, or MATH 1120, or MATH 1130, or MATH 1401 with a grade of C- or higher. Restriction: Restricted to undergraduate students at a sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 3000 - Operations Management

Introduces the concepts and methods commonly used in manufacturing and service operations. Topics include aggregate planning, inventory control, scheduling, quality control, and linear programming. This is a business core course. Therefore a grade of a 'C' or better must be earned to satisfy Business graduation requirements. Prereq: BANA 2010 and ACCT 2200 both with a grade of 'C-' or higher. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 4840 - Independent Study

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

BANA 4950 - Special Topics in Business Analytics

Course offered on an irregular basis for the purpose of presenting new subject matter in Business Analytics. Prereq: Will vary depending upon the particular topic and instructor. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 5939 - Internship

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

BANA 6610 - Statistics for Business Analytics

Provides a conceptual overview of statistical thinking and its applications to business problems. Topics include descriptive statistics, data exploration, probability, inferential methods, regression analysis, classification, regression with high dimensional data, etc. Students gain hands-on experience with data analytic problems via projects using real business settings and data. Restriction: Restricted to MS BANA majors within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6620 - Computing for Business Analytics

Introduces database and modeling software used by business analytics professionals. Includes querying relational databases, state-of-the-art statistical freeware, and modeling software. Students learn to obtain, organize, and store data needed for analytics projects, undertake data cleansing for big data tasks, and conduct statistical data visualization. Restriction: Restricted to BANA-MS students within the Business School. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6630 - Time-Series Forecasting

Time series analysis is critical to industries such as finance, marketing, retail, and accounting. This course introduces time-series models with emphasis on their practical applications in business. The goal is to show how dynamic financial and economic data can be modeled and analyzed using proper statistical techniques. The topics include methods for trend and seasonal analysis and adjustment, modeling and forecasting with autoregressive moving average (ARMA) processes, and model identification and diagnostics for time series. Other subjects include volatility and state space models. This course provides hands-on experience by pairing lectures on methodology with lab sessions using R to perform real-world data analyses. If you do not meet the prerequisites you may contact the instructor for permission to register. Prereqs: BANA 6610. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Note: Can only receive credit for either BANA 6630/DSCI 6230. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6640 - Decision Analysis

Introduces a quantitative approach to business decision making under conditions of risk and uncertainty. Emphasis will include introductions to decision analysis theory, risk analysis, utility theory, multi-criteria decision making, Bayesian decision analysis and hierarchical structured models. Psychological issues and qualitative approaches in the decision-making process will be discussed. Student computer-assisted projects are included. Prereq: BANA 6610 or permission from instructor. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6650 - Project Management

Introduces the topic of Project Management (PM) in a business environment. Emphases will include the knowledge, skills, tools, and techniques as presented in the Project Management Body of Knowledge (PMBOK), a variety of managerial aspects commonly encountered in PM, and current extensions of PM. Projects in diverse contexts are examined. Cross-listed with URPL 6249. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6660 - Predictive Analytics

Addresses statistical and machine-learning approaches to prediction using the very large data sets increasingly common in business applications such as internet-based business, fraud detection, credit scoring and market segmentation. Methods covered in the course include data partitioning, logistic regression, clustering, decision trees, dimension reduction, and neural networks, among others. Emphasis is placed on proper choice of method and understanding of the strengths and limitations of competing methods. Students are expected to analyze and report on a variety of data sets drawn from business application areas. If you do not meet the prerequisites listed, you may contact the instructor for permission. Prereq: BANA 6610
Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6670 - Prescriptive Analytics with Optimization

Optimization is a key part of Business Analytics dealing with decision problems that lend themselves to modelling and analysis designed to determine optimal decisions. In this course, we'll study methodologies for determining the best course of action in situations with a large number of alternatives, each with their own financial or other characteristics, including restrictions on our actions that must be satisfied as we search for best solutions. While the focus of the course is on modeling and solving a wide variety of optimization problems, we'll also cover the basic mathematical underpinnings of linear programming, the most widely used form of optimization in industry and government and the foundation of many extensions into other classes of optimization. State of the art Software for solving optimization problems will be used throughout the course. Students will work in teams on a project involving optimization and some important problem. Restriction: Restricted to BANA-MS students within the Business School. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6680 - Optimization for Machine Learning

This course will give an introduction on numerical optimization algorithms in the context of machine learning applications. We shall discuss how optimization problems arise in machine learning and what makes them challenging. Topics include traditional nonlinear optimization, linear optimization and discrete optimization with an emphasis on effective computational techniques. We shall also talk about next generation large-scale machine learning algorithms such as stochastic gradient (SG) method. Applications to a variety of areas such as text mining and neural networks are also stressed through class projects. Problems will be solved using appropriate software tools. Prereq: BANA 6620 and BANA 6670. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6690 - Network Modeling

This course introduces network modeling. Utilizing data and metadata, programming, algorithms, statistical analysis, and visualization; networks are studied. The focus is on Business Applications to provide managerial insights and recommendations and will include

transportation, social, transactional, electrical and communication networks. Prereq: BANA 6620. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6720 - Simulation Modeling

Students learn to model and analyze complex dynamic systems using state-of-the art software. Illustrative application areas include production systems, service systems, distribution systems and health care systems. Topics include creating reliable simulation models, analyzing the input and output from the model, and managing simulation projects. A substantial part of the course will be devoted to student projects where students define, model and analyze a significant system of their choosing. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6730 - Supply Chain Analytics

Introduces the design, analysis, management, and control of supply chains. Because of continuing advances in globalization, sustainability, and information technology, course emphasis will include integration of processes and systems, relationship management of upstream and downstream players, and strategies that incorporate current and future trends. Cross-listed with INTB 6730. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6740 - VBA for Business Analytics

This course teaches the essentials of Visual Basic for Applications (VBA), the programming language for Microsoft Office. Focus in using VBA as a tool to automate common tasks and to create business analytic applications. Goal is to hide the details of the analytical and modeling techniques by creating user interfaces for inputs and then presenting managerially relevant results. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6750 - Large-Scale Optimization Methods for Big Data

Optimization methodologies comprise one of the major components of modern business analytics. In the era of big data where problem scale is enormous, the ability to model and solve large-scale problems is increasingly important. In the first part of this course we will learn how to model and solve large scale applications by using the AMPL modeling language and solvers such as CPLEX and Gurobi. The second half of the course will be devoted to working on projects. Prereq: BUSN 6630 with a grade of "C" or better. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6760 - Data Visualization

The course equips the Business Analyst with foundational concepts and techniques required for telling a compelling story with large complex data sets. The importance of visualizing information for many analysts is often overlooked or downgraded as a natural product of the analytics or model but if the visualization is ineffective the decision making processes and knowledge discovery will be compromised. This is a project-based course that begins with reviewing concepts of human perception and cognition and perceptual accuracy and preferences. In the weeks we have together we will explore the basics of graphic design and making a "good" graph, explore why some data visualizations present information effectively and others do not, and we will also consider visualization as a component of systems for the Data Scientist and Business Analyst and presents examples of EDA (exploratory data analysis), visualizing time, networks, and maps. We end by reviewing methods and tools for static and interactive graphics. Tableau or other cutting-edge software will be utilized. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BANA 6800 - Special Topics

A number of different current topics in business analytics are discussed in this course. Consult the current schedule for semester offerings. Prereq: Permission of instructor. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 12

BANA 6840 - Independent Study

Instructor approval is required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

BANA 6910 - Business Analytics Practicum

Students apply business analytics methodologies to a real-life business problem in cooperation with a local organization. Under the supervision of faculty, students engage in problem definition, analysis and solution. Results are presented in oral and written form to the sponsoring organization. Because the practicum is a capstone course, it is not appropriate for students just beginning the program. Prereq: Will vary depending upon the particular topic (consult the schedule of classes). Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Business Law

BLAW 3050 - Business Law and Ethics

Students are taught to identify & resolve legal and ethical issues. Topics include contracts, torts, criminal law, constitutional law, business organizations, employment law, intellectual property and real property law. This is a business core course therefore a grade of "C" or better must be earned to satisfy Business graduation requirements. Restriction: Restricted to undergraduate students at a junior standing or higher. Cross-listed with BLAW 3000, ENTP 3120, and BLAW 4120. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BLAW 3100 - Legal and Ethical Implications of Risk

Topics include contracts, torts, constitutional law, intellectual property, agency, business organizations, employment law, and real property law. Special focus is placed on the relationship between insurance and risk and the topics covered. May be taken in lieu of BLAW 3050. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BLAW 4121 - Legal and Ethical Implications of Risk

Skills in legal and factual analysis and the application of ethical theories are advanced and refined through cases. Topics: insurance law, personal property and intellectual property law, agency, business entities, securities, employment law, and consumer law. Focus is placed on the relationship between insurance, risk and the covered topics. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BLAW 4140 - Negotiation Skills/Property: Effective Strategies

Course covers real and personal property law, including ownership, title, landlord/tenant, easements, environmental law, and zoning. Emerging issues in intellectual property are also reviewed, including U. S. law and international treaties and agreements. Negotiation techniques through role-playing are emphasized. NOTE: This course is an elective course and may not be used to fulfill the CORE BLAW 3050 course. Meets concurrently with MGMT 4140. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

BLAW 6500 - Legal Issues for CPA's

Examines advanced legal issues affecting accounting financial reporting. Designed for graduate students who want to understand and improve the links between accounting disclosures and legal requirements. Note: This class is rarely offered. Prereq: BLAW 3000 or BUSN 6540 (or equivalent). Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Chemistry

CHEM 1000 - Foundations for General Chemistry

This is a lecture- only course intended for students pursuing a degree in science or a health-related field. The course is designed for students who have never had a chemistry course or who have not taken general chemistry in 5+ years. Topics include the classification of matter, the Metric system, dimensional analysis, atomic theory and the structure of atoms, periodic relationships, energy and temperature, gas laws and the kinetic molecular theory, compounds and nomenclature of inorganic compounds, the mole, stoichiometry, types of chemical reactions, balancing equations, electron configurations, and chemical bonding. Enrollment in this course is strongly encouraged prior to enrollment in Chem 2031 if the student does not have a strong and recent background in general chemistry. Note: College Algebra or the equivalent is strongly recommended for optimal student success. Students may not receive credit for this course if they have already received credit for CHEM 2031 and CHEM 2061. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

CHEM 1115 - Chemistry Content

Covers content areas of undergraduate chemistry. Topics include periodicity; the mole and chemical bonding; the kinetic theory and states of matter; chemical reactions; solutions and chemical equilibria. Note: Students may not receive credit for this course if they have already received credit for CHEM 2031 and CHEM 2061. Max hours: 3 Credits. **Semester Hours:** 1 to 3

CHEM 1130 - Engineering General Chemistry

A one-semester non-laboratory version of general chemistry for engineers and those science majors who do not require laboratory credit and do not plan to take a second semester of chemistry. Prereq: One year of high school chemistry or CHEM 1000 and MATH 1110 (or high school equivalent) are strongly recommended for optimal student success. Note: Students may not receive credit for this course if they have already received credit for CHEM 2031 and CHEM 2061. Max hours: 5 Credits. **Semester Hours:** 5 to 5

CHEM 1474 - Core Chemistry: Chemistry for Everyday

Focuses on the common household chemicals that affect us on a daily basis. Students explore current topics in chemistry and the underlying chemistry of nuclear power, plastics, sunscreens, food, acid rain, etc. Home-based laboratory experiments with safe, common substances. No co-credit: Students may not receive credit for this course if they have already received credit for CHEM 2031 and CHEM 2061. Term offered: fall, spring, summer. Max hours: 4 Credits. GT:

Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 4 to 4

CHEM 1494 - Forensic Chemistry

This one semester chemistry lecture and laboratory course is designed to engage a non-science major through the high-interest topic: criminal investigations. In this course, using the theme of forensic science students will be introduced to a basic understanding of chemistry, the physical and chemical properties of matter, simple types of chemical reactions and equations, and molecular structure of drugs and biomolecules. Note: Two years of high school science and one year of high school algebra are strongly recommended for optimal success. Students will not receive credit for this course if they have already received credit for CHEM 2031 and CHEM 2061. Term offered: spring, summer. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 1575 - Chemistry: History and Policies

A study of the building blocks of all matter: chemicals. A focus on how the study of chemistry began and how it has changed over the course of history. The course explores how chemistry has impacted man from the earliest times: from the Bronze Age to the present and beyond. Students learn about the first use of manufactured chemical substances in history and the progression of chemical knowledge throughout history. Students also study how certain substances introduced into the environment throughout history have affected the environment and what policies have been put in place to control or remediate the release of these substances. Eight home-based laboratory experiments will be performed during the semester. High school algebra is strongly recommended preparation for this course. Math concepts critical for this course include basic operations—addition, subtraction, multiplication and division, order of operations, exponents, square roots and the ability to rearrange and solve algebraic equations. Term offered: fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 2031 - General Chemistry I

This is the first of a two semester sequence designed for students pursuing a degree in science or a health related field. Chem 2031 is designed for students who have recently completed high school chemistry or Chem 1000 with a C- or better. Note: Non-science majors should review the course description for Chem 1474 as an alternative, non-majors science CU Denver Undergraduate Core course, with lab credit. Topics covered include the classification of matter, the Metric system, dimensional analysis, atomic theory and the structure of atoms, periodic relationships, empirical formulas, thermochemistry, gas laws and the kinetic molecular theory, compounds and nomenclature of inorganic compounds, the mole, balancing equations, stoichiometry, types of chemical reactions, solution stoichiometry and dilutions, electron configurations, chemical bonding, Lewis Dot Theory, Valence Shell Electron Pair repulsion Theory, and other topics as time allows. This course is a prerequisite or co-requisite for General Chemistry 1 Lab, Chem 2038. No co-credit with CHEM 2081. Note: a beginning course for science majors, medical technologists, pre-medical and pre-dental students. It is strongly

recommended that students have taken CHEM 1000 and MATH 1110 or their high school equivalents to be adequately prepared to succeed in this course. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 3 to 3

CHEM 2038 - General Chemistry Laboratory I

Laboratory course designed to accompany Chem 2031. Topics include gravimetric analysis, statistical analysis, stoichiometry, Avogadro's number, thermochemistry, atomic spectroscopy, paper chromatography, and gas laws. No co-credit with CHEM 2088. Coreq: CHEM 2031 or CHEM 2081. Term offered: fall, spring, summer. Max hours: 1 Credit. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 1 to 1

CHEM 2061 - General Chemistry II

This is a continuation of Chem 2031 and is the second course of a two semester sequence designed for students pursuing a degree in science or a health related field. CHEM 2061 builds upon the understanding of chemistry rooted in the molecular nature of matter and change from General Chemistry I and expands to include topics such as intermolecular forces, solution chemistry, kinetics, chemical equilibrium, acid-base chemistry, buffer chemistry, solubility, thermodynamics and time permitting, electrochemistry. Specific topics include: the use of bonding theories to explain the relationships between atomic structure, molecular shape, and macroscopic properties of matter including boiling point, vapor pressure, surface tension, viscosity, and capillarity; the understanding of molecular structure to explain the energetics of solution formation as well as vapor pressures of pure liquids and solutions; the application of rates of reactions to define the state of equilibrium; the application of problem solving techniques for systems at equilibrium to acid/base and solubility chemistry; and the thermodynamic underpinnings of chemical reaction rates and the spontaneous conversion of chemical species to attain a state of dynamic equilibrium. This course is a prerequisite or co-requisite for General Chemistry II Lab, Chem 2068. Prereq: CHEM 2031 or 2081 with a C- or higher. No co-credit with CHEM 2091. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 3 to 3

CHEM 2068 - General Chemistry Laboratory II

Laboratory course designed to accompany Chem 2061. Topics include colligative properties, spectroscopic analysis, kinetics, equilibrium, acid-base chemistry, titrations, and qualitative analysis of metal cations. No co-credit with CHEM 2098. Prereq: CHEM 2038 or 2088 with a C- or higher. Coreq: CHEM 2061 or 2091. Term offered: fall, spring, summer. Max hours: 2 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 2 to 2

CHEM 2081 - Honors General Chemistry I

Topics include gas laws, thermochemistry, the quantum mechanical model of the atom, periodic properties, bonding and molecular geometry and intermolecular forces. Prepares students to take upper division chemistry courses. Honors section: Course assumes knowledge of stoichiometry and basic atomic structure. Note: Students may not receive credit for this course if they have already received credit for CHEM 2031. Prereq: Admission into specific CU Denver program or consent of instructor is required to enroll. Working knowledge of high school algebra and advanced high school chemistry are required. Restriction: Restricted to Chemistry Honors students (CH01). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 2088 - Honors General Chemistry I Laboratory

Laboratory experiments on topics covered in CHEM 2031 or CHEM 2081, gaining experience in observing, recording, and interpreting physical and chemical phenomena. Offers smaller sections and greater access to specialized techniques, open ended experiments, and instrumentation, requiring a faster pace and more sophisticated work. Note: Students may not receive credit for this course if they have already received credit for CHEM 2038. Prereq: Admission into specific CU Denver program or consent of instructor is required to enroll. Coreq: CHEM 2031 or CHEM 2081. No co-credit with CHEM 2038. Term offered: fall. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 2091 - Honors General Chemistry II Lecture

Continuation of CHEM 2081. Additional topics may include kinetics, equilibria and thermodynamics. Note: Students may not receive credit for this course if they have already received credit for CHEM 2061. Note: Admission into specific CU Denver program or consent of the instructor is required. Prereq: CHEM 2081 or 2031 with a C- or higher. Restriction: Restricted to Chemistry Honors students (CH01). No co-credit with CHEM 2061. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 2098 - Honors General Chemistry II Laboratory

Students perform laboratory experiments on topics covered in General Chemistry II (CHEM 2061) or the companion Honors General Chemistry II course. Students gain experience in observing, recording, and interpreting physical and chemical phenomena. Honors General Chemistry II Laboratory is distinguished from the regular General Chemistry Laboratory by smaller sections, and greater access to specialized techniques, open ended experiments, and instrumentation. Students use the laboratory skills they developed in Honors General Chemistry I Laboratory to work independently with a special emphasis on recording, interpreting, and expressing data, chemical safety, the scientific literature, innovation in the laboratory, and presentation of scientific information in oral and poster formats. Prereq: Admission into specific CU Denver program or consent of instructor is required to enroll. Prereq: CHEM 2038 or CHEM

2088. Coreq: CHEM 2091 or CHEM 2061. Restriction: Restricted to Chemistry Honors Students. No co-credit with CHEM 2068. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 2300 - Nutritional Chemistry

Introduces nutrition intended primarily for majors in nursing, physical therapy, physical education. Topics include structure and metabolism of carbohydrates, lipids and proteins, functions of vitamins and minerals and food constituents. Prereq: CHEM 1000 or CHEM 1474 or CHEM 2031 with a C- or better. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 2600 - Introductory Topics in Chemistry

This course is designed primarily for non-chemistry majors. Students will explore a special topic related to chemistry or biochemistry. A description of topics to be covered in the current semester is maintained on the Chemistry department website. Max hours: 6 Credits.

Semester Hours: 1 to 3

CHEM 2840 - Independent Study: CHEM

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

CHEM 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits.

Semester Hours: 1 to 3

CHEM 3011 - Inorganic Chemistry

The fundamentals of inorganic chemistry, including: atomic, molecular and crystal structures; the energetics of reactions, acid-base interactions; and the chemistry of main group and transition metal elements, including coordination and organometallic chemistry. Prereq or Coreq: CHEM 3421 or 3491 with a C- or higher. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

CHEM 3018 - Inorganic Chemistry Laboratory

Combines theoretical concepts with hands-on laboratory experience and introduces students to modern inorganic chemistry. Experiments cover both main group and transition metal

chemistry with an emphasis on synthesis, characterization, and application of inorganic compounds. Prereq or Coreq: CHEM 3011 with a C- or higher. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 3111 - Analytical Chemistry

Topics include sampling, volumetric analyses, instrumental analyses and statistical treatment of data. Note: Lecture course for chemistry, biology, medical technology and environmental students. Prereq: CHEM 2061 or CHEM 2091 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 3118 - Analytical Chemistry Laboratory

CHEM 3118 provides a strong background in those chemical principles that are particularly important to analytical chemistry, such as the ability to obtain high-quality analytical data. Students gain experience with techniques of sampling and analysis, including an introduction to instrumental methods. Additionally, students develop the skills needed to solve analytical problems in a quantitative manner, with the aid of spreadsheet tools. The post laboratory assignments demonstrate a writing process that follows the guidelines of the American Chemical Society. Note: Laboratory course to be taken concurrently with CHEM 3111. Prereq: CHEM 2068 or CHEM 2098 with a C- or higher. Coreq: CHEM 3111 or CHEM 3481. Term offered: fall. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 3411 - Organic Chemistry I

Lecture course for science majors. Topics covered include Structure and Bonding, Stereochemistry, Alkanes, reactions of alkenes, alkyl halides, alcohols and other functional groups, reaction mechanism and spectroscopy. Prereq: CHEM 2061 or 2091 with a C- or higher. No co-credit with CHEM 3481. Term offered: fall, spring, summer. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 3418 - Organic Chemistry Lab I

Laboratory course for science majors. Topics include methods of purification, separation and analysis of organic compounds; organic reactions and workups and spectroscopy. Emphasis on scientific writing. Prereq: CHEM 2068 or 2098 with a C-or higher. Coreq: CHEM 3411 or CHEM 3481. No co-credit with CHEM 3488. Term offered: fall, spring, summer. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 3421 - Organic Chemistry II

Lecture course for science majors. A continuation of Chem 3411. Topics covered include spectroscopy, aromaticity, reactions of alkynes, conjugated dienes, benzene, benzene derivatives, aldehydes, ketone, carboxylic acids, carboxylic acid derivatives, enols, enolates and

amines, reaction mechanisms and syntheses. Prereq: CHEM 3411 or 3481 with a C- or higher. No co-credit with CHEM 3491. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 3428 - Organic Chemistry Lab II

Laboratory course for science majors. A continuation of CHEM 3418. Topics include analysis of organic unknowns, organic reactions and workups and spectroscopy. Emphasis on scientific writing. Prereq: CHEM 3418 or 3488 with a C- or higher; Coreq: CHEM 3421 or CHEM 3491. Note: Students will not receive credit for CHEM 3428 if they take it after successfully completing CHEM 3498. Term offered: fall, spring, summer. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 3481 - Honors Organic Chemistry I

Lecture course for science majors. An accelerated and in-depth approach to organic chemistry. Intended for chemistry majors and advanced premedical, pre-dental, pre-pharmacy and other health related careers requiring a full year of organic chemistry. Instructor permission required. Topics covered include Structure and Bonding, Stereochemistry, Alkanes, reactions of alkenes, alkyl halides, alcohols and other functional groups, reaction mechanism and spectroscopy. Prereq: CHEM 2061 or CHEM 2091, and CHEM 2068 or CHEM 2098 with a C- or higher. Coreq: CHEM 3418 or CHEM 3488. Instructor permission required to enroll. No co-credit with CHEM 3411. Term offered: fall. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 3488 - Honors Organic Chemistry Laboratory I

Laboratory course for science majors. Honors laboratory class to accompany CHEM 3411 or CHEM 3481. Topics include methods of purification, separation and analysis of organic compounds through extended experiments; organic reactions and workups and spectroscopy. Emphasis on scientific writing. Prereq: CHEM 2068 or CHEM 2098 with a C- or higher. Coreq: CHEM 3411 or CHEM 3481. Instructor permission required to enroll. Note: No co-credit with CHEM 3418. Term offered: fall. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 3491 - Honors Organic Chemistry II

Lecture course for science majors. A continuation of Chem 3481. An accelerated and in-depth approach to organic chemistry. Intended for chemistry majors and advanced pre-medical, pre-dental, pre-pharmacy and other health related careers requiring a full year of organic chemistry. Instructor permission required. Topics covered include spectroscopy, aromaticity, reactions of alkynes, conjugated dienes, benzene, benzene derivatives, aldehydes, ketone, carboxylic acids, carboxylic acid derivatives, enols, enolates and amines, reaction mechanisms and syntheses. Prereq: CHEM 3411 or CHEM 3481 and CHEM 3418 or CHEM 3488 with a C- or higher and instructor consent are required in order to enroll in this course. No co-credit with CHEM 3421. Term offered: spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 3498 - Honors Organic Chemistry Laboratory II

Laboratory course for science majors. A continuation of CHEM 3418 or CHEM 3488. Topics include multi-step organic reactions, workups and spectroscopy and an independent research project. Emphasis on use of the chemical literature, scientific writing and scientific presentation. Prereq: Students must be a Chemistry or Biochemistry major (CHEM-BS, CHEM-ADL, CHEM-BS2, BICM-BS or BICM-ADL). Students must have completed CHEM 3411 or CHEM 3481 and CHEM 3418 or CHEM 3488 with a C- or higher. Students must have completed CHEM 3421 or CHEM 3491 with a C- or higher or be co-enrolled. Others may be permitted by the instructor. Term offered: fall, spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 3510 - Physical Chemistry: Biological Applications.

An introduction to physical chemistry that examines the principles of thermodynamics, equilibrium solutions, and kinetics as they apply to biological systems. Calculus required to learn the principles is presented in the course. Prereq: CHEM 2061 or CHEM 2091, MATH 1120 (or 1130, 1401, 2411, 2421) and PHYS 2020 with a C- or higher. Max hours: 4 Credits.

Semester Hours: 4 to 4

CHEM 3810 - Biochemistry

Introduces the principles of biochemistry for science and health science-oriented majors. This survey course covers the important aspects of modern biochemistry including macromolecular structure, enzymology, and metabolism in one semester. Prereq: BIOL 2061 or 2097 and CHEM 3411 or 3481 with a C- or higher. Term offered: fall, spring, summer. Max hours: 4 Credits.

Semester Hours: 4 to 4

CHEM 3840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer.

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

CHEM 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have a junior standing and at least a 2.75 GPA and must work with the Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits.

Semester Hours: 1 to 3

CHEM 4010 - Advanced Inorganic Chemistry

Covers the fundamental principles of inorganic chemistry. Topics include atomic structure and periodicity, molecular symmetry, bonding, structural chemistry, main-group chemistry, coordination chemistry, and organometallic chemistry. Requisite knowledge in Undergraduate Inorganic and Physical Chemistry assumed. Cross-listed with CHEM 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4110 - Advanced Analytical Chemistry

Explores the fundamental principles of analytical chemistry. Topics will focus on meteorology (the science of making measurements), measurements based on energy transfer (e.g. spectroscopic analysis), and measurements based on mass transfer (e.g. chemical separations and electrochemistry). Requisite knowledge in Undergraduate Instrumental Analysis is assumed. Cross-listed with CHEM 5110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4121 - Instrumental Analysis

Surveys instrumental methods of analysis, emphasizing atomic and molecular spectroscopy, mass spectrometry, surface characterization, and chromatography techniques. Students are introduced to a wide array of powerful and elegant tools for obtaining qualitative and quantitative information about the composition and structure of matter. Prereq: CHEM 3111 or CHEM 3481, CHEM 3421 or CHEM 3491, PHYS 2331 or PHYS 2020 and CHEM 4521 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4128 - Instrumental Analysis Laboratory

CHEM 4128 demonstrates a wide array of powerful and elegant tools for obtaining qualitative and quantitative information about the composition and structure of matter. The post laboratory assignments demonstrate a writing process that follows the guidelines of the American Chemical Society. Note: Required of chemistry majors and open to other students in CHEM 4121. Prereq: CHEM 3118 and 4538 with a C- or higher. Coreq: CHEM 4121. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 4221 - Practical Applications of Spectroscopy

This course surveys spectroscopic methods in order to deduce the structure of organic compounds from an examination of spectra, with an emphasis on infrared spectroscopy, mass spectrometry, nuclear magnetic resonance spectroscopy, and ultraviolet spectroscopy. Students will be introduced to a wide array of powerful and elegant tools for obtaining qualitative information about the structure of matter. This course will require a good amount of thought, yet all of the concepts and associated mathematical manipulations are within the reach of a student who has met the prerequisites. Prereq: CHEM 3411 or CHEM 3481 with a C- or higher. Cross-listed with CHEM 5221. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4310 - Advanced Organic Chemistry

An exploration of structure, bonding and reactivity in organic modules that includes extensive analysis of the chemical literature, culminating in written and seminar presentations of individual projects. Requisite knowledge in Undergraduate Organic Chemistry and Physical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 5310. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4421 - Cannabis Chemistry

An exploration of the terpene to cannabinoid compounds including biosynthesis pathways; human receptor structures and mechanism; current analytical methods for Quality Assurance and Quality Control and current research in medical applications. Prerequisite: Organic Chemistry I with a C- or higher (Chem 3411 or Chem 3481), and corequisite/prerequisite: Organic Chemistry II (CHEM 3421 or CHEM 3491). Cross-listed with CHEM 5421. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4500 - Foundations of Physical Chemistry

This course prepares students for CHEM 4511 and/or 4521. The goal is to bridge the gap between algebra- and calculus-based physics courses and to introduce essential math concepts and skills in Calculus III that are relevant to the Physical Chemistry course sequence 4511/4521. Pre: PHYS 2020 or (prereq or coreq) PHYS 2331, CHEM 3421 or CHEM 3491 and MATH 2411 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4510 - Computational Chemistry

Classical and ab initio molecular dynamics are covered from theory to application. Students have access to high-performance computational resources and cover current topics in the field. Requisite knowledge in Undergraduate Physical Chemistry is assumed. Cross-listed with CHEM 5510. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4511 - Physical Chemistry: Thermodynamics and Kinetics

Includes study of the laws of thermodynamics, thermochemistry, chemical equilibria, solutions and statistical mechanics. Prereq: PHYS 2020 or PHYS 2331 with C- or higher and either (pre-requisite MATH 2421 Calculus III -OR- CHEM 4500 Foundations for Physical Chemistry with a C- or higher) OR co-requisite/ pre-requisite MATH 3511 Mathematics of Chemistry with a C- or higher if completed before CHEM 4511. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4518 - Physical Chemistry Laboratory: Reaction Analysis

Instruction in the experimental techniques of physical chemistry with emphasis on the properties of gases, thermodynamics and chemical equilibrium. Pre- or Co-Requisite CHEM

4511 with a C- or higher if completed before CHEM 4518. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 4521 - Physical Chemistry: Quantum and Spectroscopy

Continuation of CHEM 4511, with emphasis on chemical kinetics, quantum mechanics, molecular structure and spectroscopy. Prereq: PHYS 2020 or PHYS 2331 with C- or higher and either (pre-requisite MATH 2421 Calculus III -OR- CHEM 4500 Foundations for Physical Chemistry with a C- or higher) OR co-requisite/ pre-requisite MATH 3511 Mathematics of Chemistry with a C- or higher if completed before CHEM 4521. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4530 - Advanced Physical Chemistry

Explores fundamental properties of molecules (bond length and strength, the potential energy surface, reaction rates, etc.) and examines how these properties are measured, using original literature as the primary source, and culminating in written and seminar presentations of individual projects. Requisite knowledge in Undergraduate Physical Chemistry is assumed. Cross-listed with CHEM 5530. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4538 - Physical Chemistry Laboratory: Molecular Structure

CHEM 4538 explores the central principles of physical chemistry, with emphasis on quantum chemistry, spectroscopy, and computational methods. The post laboratory assignments demonstrate a writing process that follows the guidelines of the American Chemical Society. Pre or Co-requisite CHEM 4511 or CHEM 4521 with a C- or higher if completed before CHEM 4538 Term offered: fall. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 4548 - Physical Biochemistry Laboratory

Experimental techniques of physical chemistry emphasizing thermodynamics, kinetics, and spectroscopy of biological molecules. Fulfills the Physical Chemistry Lab requirement for Biochemistry Emphasis majors. Pre or Co-requisite CHEM 4511 or CHEM 4521 with a C- or higher if completed before CHEM 4548 Recommended Preparation: CHEM 4810. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 4600 - Advanced Topics in Chemistry

Upper-level majors in chemistry or a related discipline explore a special topic in chemistry or biochemistry. A description of topics to be covered in the current semester is maintained on the Chemistry department website. Max hours: 6 Credits. **Semester Hours:** 1 to 3

CHEM 4610 - Understanding & Presenting Chemical Research

This course will improve your ability to systematically search for chemical information, help you interpret the information you find, & improve your ability to summarize and present that information. Prereq: CHEM 2061 or CHEM 2091 with a C- or higher. Cross-listed with CHEM 5610. Term offered: fall, spring. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 2

CHEM 4655 - Teaching Assistant Bootcamp

This course is 4-5 8-hour days of intensive training in suitable pedagogy for general chemistry and organic chemistry laboratory classes, procedures for teaching laboratory sections, and laboratory techniques. Students must have a teaching assistant contract with the Chemistry Department in order to take this course. Cross-listed with CHEM 5655. Term offered: fall. Repeatable. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 4700 - Environmental Chemistry

A discussion of the sources, reactions, transport, effects, and fates of chemical species in the water, soil, and air environments. Prereq: CHEM 3111 or CHEM 3411 or CHEM 3481 with a C- or higher. Cross-listed with CHEM 5700. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4810 - General Biochemistry I

In-depth introductory course for chemistry, science and health science majors. Topics include structure and energetics of proteins; mechanisms and kinetics of enzymes; structure and function of carbohydrates, lipids and nucleic acids. Prereq or Coreq: CHEM 3421 or CHEM 3491 with a grade of C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4815 - Structural Biology of Neurodegenerative Diseases

Advanced course in Biochemistry/Biophysics. Principles of Protein Folding, Structure-Function Relationship, and spectroscopic techniques related to characterization of these processes as applied to neurodegenerative diseases such as Parkinson's and Alzheimer's. Prereq: 1) BIOL 2051 & BIOL 2071 or BIOL 2095 & BIOL 2096, and 2) CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher. Prereq or Coreq: PHYS 2020 or PHYS 2331 with a C- or higher. Cross-listed with CHEM 5815, BIOL 4815, and BIOL 5815. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4820 - General Biochemistry II

Advanced course for chemistry, science and health science majors. Topics include energetics and pathways for metabolism of carbohydrates, lipids, and amino acids. Prereq: CHEM 3810 or 4810 or 5810 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4825 - Biochemistry of Metabolic Disease

Advanced course in biochemistry. An expanded study of selected topics in metabolism and how they relate to diseases, including inflammation, diabetes, obesity, and rare genetic disorders. Prereq: 1) CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher and 2) BIOL 2051 & BIOL 2071 or BIOL 2095 and BIOL 2096 with a C- or higher. Cross-listed with CHEM 5825, BIOL 4825 and BIOL 5825. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4828 - Biochemistry Lab

Focuses on modern laboratory techniques for biochemical research, with an emphasis on methods for protein isolation, purification and characterization. Students perform experiments including chromatography, electrophoresis, molecular cloning, spectrophotometry, and enzyme activity assays. Prereq: CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher. Term offered: spring. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CHEM 4835 - Biochemistry of Gene Regulation and Cancer

Explores the biochemical and molecular aspects of cancer biology. Topics include DNA mutations and repair, gene regulation, oncogenes and tumor suppressors, stem cells and differentiation, and cancer drug development. Prereq: 1) CHEM 3810 or CHEM 4810 or CHEM 5810 with a C- or higher and 2) BIOL 2051 & 2071 or BIOL 2095 & BIOL 2096 with a C- or higher. Cross-listed with CHEM 5835, BIOL 4835, and BIOL 5835. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4840 - Independent Study: Chem

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: Permission of instructor required. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

CHEM 4845 - Molecular Modeling and Drug Design

Advanced course in biochemistry. An introductory course on modern molecular modeling techniques and their applications to computer-aided rational drug design. Prereq: CHEM 3411 with a C- or higher and either PHYS 2020 or PHYS 2331 with a C- or higher. Cross-listed with CHEM 5845. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive

permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CHEM 5010 - Advanced Inorganic Chemistry

Covers the fundamental principles of inorganic chemistry. Topics include atomic structure and periodicity, molecular symmetry, bonding, structural chemistry, main-group chemistry, coordination chemistry, and organometallic chemistry. Requisite knowledge in Undergraduate Inorganic and Physical Chemistry assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4010. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5073 - RM-MSMSP Research Experience for Teachers - Chemistry Cohort

The Research Experience for Teachers (RET) program will be a five-week research exploration in which twelve RM-MSMSP teachers will raise their level of relevant scientific understanding by engaging in a "hands on" workshop, transforming what they have learned into new curricular materials that will improve the scientific abilities of their students and hopefully stimulate them to consider a STEM career. Note: Credit may not apply toward any CLAS degree. Max hours: 6 Credits. **Semester Hours:** 1 to 6

CHEM 5110 - Advanced Analytical Chemistry

Explores the fundamental principles of analytical chemistry. Topics will focus on meteorology (the science of making measurements), measurements based on energy transfer (e.g. spectroscopic analysis), and measurements based on mass transfer (e.g. chemical separations and electrochemistry). Requisite knowledge in Undergraduate Instrumental Analysis is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4110. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5221 - Practical Applications of Spectroscopy

This course surveys spectroscopic methods in order to deduce the structure of organic compounds from an examination of spectra, with an emphasis on infrared spectroscopy, mass spectrometry, nuclear magnetic resonance spectroscopy, and ultraviolet spectroscopy. Students will be introduced to a wide array of powerful and elegant tools for obtaining qualitative information about the structure of matter. This course will require a good amount of thought, yet all of the concepts and associated mathematical manipulations are within the reach of a student who has met the prerequisites. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4221. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5310 - Advanced Organic Chemistry

An exploration of structure, bonding and reactivity in organic modules that includes extensive analysis of the chemical literature, culminating in written and seminar presentations of individual projects. Requisite knowledge in Undergraduate Organic Chemistry and Physical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4310. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5421 - Cannabis Chemistry

An exploration of the terpene to cannabinoid compounds including biosynthesis pathways; human receptor structures and mechanism; current analytical methods for Quality Assurance and Quality Control and current research in medical applications. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4421. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5510 - Computational Chemistry

Classical and ab initio molecular dynamics are covered from theory to application. Students have access to high-performance computational resources and cover current topics in the field. Requisite knowledge in Undergraduate Physical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4510. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5530 - Advanced Physical Chemistry

Explores fundamental properties of molecules (bond length and strength, the potential energy surface, reaction rates, etc.) and examines how these properties are measured, using original literature as the primary source, and culminating in written and seminar presentations of individual projects. Requisite knowledge in Undergraduate Physical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4530. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5550 - Applications of Group Theory in Chemistry

Introduces the basic principles of the group theoretical method as well as its applications in organic, inorganic, and physical chemistry. Covers Mo's for main-group and transition metal compounds, ligand field theory, molecular vibrations, and electron absorption spectroscopy. Requisite knowledge in Undergraduate Physical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5600 - Graduate Topics in Chemistry

Graduate students in chemistry or a related discipline explore a special topic in chemistry or biochemistry. A description of topics to be covered in the current semester is maintained on the Chemistry department website. Restriction: Restricted to degree-granting Graduate programs. Term offered: spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

CHEM 5610 - Understanding & Presenting Chemical Research

This course will improve your ability to systematically search for chemical information, help you interpret the information you find, & improve your ability to summarize and present that information. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4610. Term offered: fall, spring. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 2

CHEM 5655 - Teaching Assistant Bootcamp

This course is 4-5 8-hour days of intensive training in suitable pedagogy for general chemistry and organic chemistry laboratory classes, procedures for teaching laboratory sections, and laboratory techniques. Students must have a teaching assistant contract with the Chemistry Department in order to take this course. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4655. Term offered: fall. Repeatable. Repeatable. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 5700 - Environmental Chemistry

A discussion of the sources, reactions, transport, effects, and fates of chemical species in the water, soil and air environments. Requisite knowledge in Undergraduate Organic and Analytical Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Cross-listed with CHEM 4700. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5810 - Graduate Biochemistry I

Topics include proteins, mechanisms and kinetics of enzymes, carbohydrates, lipids and membranes, nucleic acids, genetic engineering, signaling pathways, and energetics, which are integrated with critical analysis of recent journal papers, culminating in written and seminar presentations of individual projects. Requisite knowledge in Undergraduate Organic Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Term offered: fall. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 5815 - Structural Biology of Neurodegenerative Diseases

Advanced course in Biochemistry/Biophysics. Principles of Protein Folding, Structure-Function Relationship, and spectroscopic techniques related to characterization of these processes as applied to neurodegenerative diseases such as Parkinson's and Alzheimer's. Restriction:

Restricted to degree-granting graduate programs. Cross-listed with CHEM 4815, BIOL 4815, and BIOL 5815. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5825 - Biochemistry of Metabolic Disease

Advanced course in biochemistry. An expanded study of selected topics in metabolism and how they relate to diseases, including inflammation, diabetes, obesity, and rare genetic disorders. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4825, BIOL 4825, and BIOL 5825. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5830 - Graduate Biochemistry II

Topics include biosynthesis & metabolism of carbohydrates, lipids& amino acids, & genetic information flow of DNA replication, transcription, translation& regulation of transcription, which are integrated with critical analysis of recent literature, culminating in written& seminar presentations of individual projects. Continuation of 5810. Prereq: CHEM 5810 with a B- or higher. Restriction: Restricted to degree-granting Graduate programs or permission of instructor. Term offered: spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CHEM 5835 - Biochemistry of Gene Regulation and Cancer

Explores the biochemical and molecular aspects of cancer biology. Topics include DNA mutations and repair, gene regulation, oncogenes and tumor suppressors, stem cells and differentiation, and cancer drug development. Restriction: Restricted to degree-granting graduate programs. Cross-listed with CHEM 4835, BIOL 4835, and BIOL 5835. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

CHEM 5845 - Molecular Modeling and Drug Design

Advanced course in biochemistry. An introductory course on modern molecular modeling techniques and their applications to computer-aided rational drug design. Restriction: Graduate standing. Cross-listed with CHEM 4845. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHEM 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CHEM 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CHEM 5950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Max hours: 8 Credits. **Semester Hours:** 1 to 8

CHEM 6000 - Chemistry Seminar

Faculty and student presentations of CU-Denver research projects and other current chemistry topics. Note: All chemistry students are encouraged to attend, but credit is given only to those who present seminars. Requisite knowledge in Undergraduate Physical or Environmental Chemistry is assumed. Restriction: Restricted to degree-granting Graduate programs. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 1 to 3

CHEM 6001 - Master's Research Seminar

Students present a formal seminar to the department describing their master's research work. Note: Required for all students completing a thesis-based master's degree; optional for those completing master's projects. Prereq: CHEM 6000 with a B- or higher. Term offered: fall, spring, summer. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 6002 - Chemistry Seminar I

The art of listening to and giving a chemistry seminar. Introduces the chemical literature, the pedagogical techniques of seminar giving, and the critical thinking skills required to understand a technical presentation. Note: Seminar presentations by faculty, outside speakers, and advanced graduate students are analyzed by the students participating in the course. Restriction: Restricted to degree-granting Graduate programs. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CHEM 6003 - Chemistry Seminar II

Students prepare and give a chemical seminar based on a literature paper. Note: Seminar presentations by students and outside speakers are analyzed by students in the course. Restriction: Restricted to degree-granting Graduate programs. Max hours: 1 Credit. **Semester Hours: 1 to 1**

CHEM 6840 - Independent Study: CHEM

Repeatable. Max Hours: 9 Credits. **Semester Hours: 1 to 6**

CHEM 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Max hours: 6 Credits. **Semester Hours: 1 to 6**

CHEM 6960 - Master's Report

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours: 1 to 6**

Chinese

CHIN 1000 - China and the Chinese

A multidisciplinary introduction to Chinese society both past and present. Prehistory, birth of imperial China, literature, philosophy, religion, nationalism, revolution, modernization, contemporary life, social structure, gender, food, family life, population policy, ethnicity, popular culture, economics and politics. Note: This course is taught in English. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1. **Semester Hours: 3 to 3**

CHIN 1010 - Beginning Chinese I

A basic introduction to Chinese language and culture. Students study pronunciation, vocabulary, grammar and simple writing techniques. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern

Languages prior to enrollment. No previous study of Chinese is required. Term offered: fall.
Max hours: 5 Credits. **Semester Hours:** 5 to 5

CHIN 1020 - Beginning Chinese II

(Continuation of CHIN 1010.) Further practice of pronunciation, study of vocabulary, grammar, and simple writing techniques. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed CHIN 1010 or equivalent, or have taken one year of high school Chinese, or possess equivalent proficiency. A grade of C- or higher in CHIN 1010 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

CHIN 1071 - Mandarin Chinese for the Professions

Provides students with language skills and cultural knowledge in the context of conducting business with Chinese. Students develop elementary language skills for communication, cultural awareness and business etiquette via structured thematic units with business scenarios and simulations. Note: Chinese 1071 cannot be taken to fulfill language requirements; nor can it be used to substitute for Chinese 1010. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 1 to 3

CHIN 2110 - Second Year Chinese I

Continuing development of listening, speaking, reading, and writing skills in practical Chinese, with grammar review and introduction of the Chinese dictionary. In addition to contemporary Chinese, there is some emphasis on Chinese classical materials, such as proverbs. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed CHIN 1020 or equivalent, or have taken two years of high school Chinese, or possess equivalent proficiency. A grade of C- or higher in CHIN 1020 is recommended for success in this course. This course is not intended for native speakers. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 2120 - Second Year Chinese II

(Continuation of CHIN 2110.) Satisfies the fourth semester language requirement at most graduate schools. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed CHIN 2110 or equivalent, or have taken three years of high school Chinese, or possess equivalent proficiency. A grade of C- or higher in CHIN 2110 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 2840 - Independent Study

Term offered: fall, spring. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

CHIN 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Sophomore standing. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

CHIN 2970 - Contemporary Chinese Cinema

Introduces students to Chinese cinema, one of the most powerful and often controversial modes of representing society, culture, history and politics in China. Note: Taught in English. All films have English subtitles. No previous study of Chinese language or culture is required. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 3010 - Advanced Intermediate Chinese

This course capitalizes on students' already acquired knowledge to further develop language skills in Mandarin Chinese. Students learn to make a transition from reading pedagogically prepared materials to more authentic ones. Note: this course assumes that students have passed CHIN 2120 or equivalent, or possess equivalent proficiency. A grade of C- or higher in CHIN 2120 is recommended for success in this course. This course is not intended for native speakers. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 3130 - Special Topics in Chinese

Varying topics in Chinese language, literature and culture appropriate to the 3000 level, not otherwise covered by regular courses. Note: This course assumes that students have passed CHIN 2120 or equivalent, or possess equivalent language proficiency. Note: May be taken more than once, provided that the topic is different each time. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

CHIN 3200 - Contemporary Chinese Society and Culture

Provides students with an overview of the systems in modern China (such as educational, political and economical), its family and interpersonal constructs and the elements of modern China found in popular cultures. It also exposes students to rudimentary and practical use of the Chinese language. Note: This course is taught in English. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 3300 - Special Topics on Chinese Film

Studies the cultural, social and historical conditions that have shaped Chinese cinema. May focus on one Chinese speaking country or more than one (including but not limited to China, Taiwan and Hong Kong). May focus on a particular period (pre-Cultural revolution, for example) or a particular theme (urban cinema or martial arts films, for example). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 3840 - Independent Study: CHIN

Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

CHIN 3939 - Internship - CHIN

- **Semester Hours:** 1 to 3

CHIN 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 4690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 5690. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 4691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG

4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 5691. Prereq: MLNG 4690 or SPAN 4690 or FREN 4690 or GRMN 4690 or CHIN 4690. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CHIN 5690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for those wishing to be teaching assistants in the Department of Modern Languages, and for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 5691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691. Prereq: MLNG 5690 or SPAN 5690 or FREN 5690 or GRMN 5690 or CHIN 5690. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CHIN 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Civil Engineering

CVEN 1025 - Civil Engineering Graphics and Computer Aided Design

Introduces microcomputer-based, menu-driven, 2-D and 3-D computer-aided design systems; standard Civil Engineering industry details and some three-dimensional modeling of solid objects; principles on engineering drawing and descriptive geometry with applications specifically geared for civil engineers. Prereq: High School Geometry and Algebra. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 1067 - Introduction to Civil Engineering

Introduces civil engineering and the many career choices in this broad field. Covers the history of the profession, current civil engineering projects, societal and global implications, technologies used, professional ethics, sustainability, and licensure. Max hours: 1 Credit.

Semester Hours: 1 to 1

CVEN 1800 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CVEN 1840 - Independent Study

This category is intended for topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Departmental approval is required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CVEN 2121 - Analytical Mechanics I

A vector treatment of force systems and their resultants; equilibrium of trusses, beams, frames, and machines, including internal forces and three-dimensional configurations, static friction, properties of areas, distributed loads and hydrostatics. Prereq: PHYS 2311 and MATH 2411. Cross-listed with MECH 2023. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 2200 - Computing Methods in Civil Engineering

Introduces MATLAB computer programming for engineering applications. Students will learn programming concepts such as relational and logical operations, branching statements and loops. They will apply these concepts in the MATLAB platform to write programs to solve several engineering problems. Prereq: CVEN 1025 and MATH 2411. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 2212 - Engineering Surveying

Survey observations used by engineers and surveyors using levels and total stations; adjustment of measured loops, traverses, areas and volumes; analysis of error sources; and presentation of results. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CVEN 2214 - Surveying for Engineering

Survey observations used by engineers and surveyors using levels and total stations to make sure things are put in the right place and leveled; analysis and adjustment of measured loops,

traverses; areas and volumes; methods used in construction; analysis of error sources; and presentation of results. This course does not include a lab. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CVEN 2800 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CVEN 2840 - Independent Study

This category is intended for topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Departmental approval is required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CVEN 3111 - Analytical Mechanics II

A vector treatment of dynamics of particles and rigid bodies, including rectilinear translation, central-force, general motion of particles, kinematics of rigid bodies, the inertia tensor, plane motion of rigid bodies; energy and momentum methods for particles, systems of particles and rigid bodies. Prereq: CVEN 2121. Cross-listed with MECH 2033. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3121 - Mechanics of Materials

Mechanical properties of materials, stresses and strains in members subjected to tension, compression and shear, combined stresses, flexural and shearing stresses in beams, deflections of beams, column analysis, principal stresses. Prereq: CVEN 2121. Cross-listed with MECH 3043. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3141 - Introduction to Structural Materials

To learn the fundamental characteristics of structural materials, including steel, concrete, masonry, timber, and composites; to learn how to test structural materials in the laboratory; and to learn how to interpret test data for engineering applications. After completing this course, students are expected to understand the behavior of structural materials and establish necessary background for structural design courses. Coreq: CVEN 3121. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CVEN 3200 - Computational Methods for Civil Engineers

This course introduces advanced programming and data analysis skills pertinent to the range of Civil Engineering disciplines. Topics will include numerical methods, statistical analysis, and programming techniques for measurements and data collection. Languages and tools will

include Excel, Matlab, Python, and Arduino. Prereq: IWKS 2300 and MATH 3800 or CVEN 3611 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3212 - Plane Surveying For GIS Majors

This course will present the concepts and practical materials for surveying instruments, survey data collection methods and data processing with applications in GIS. It will cover the shape of the Earth theory, Map projections, Datum, 2D and 3D coordinate transformation methods and coordinate geometry problems. Prereq: MATH 1401 and 2411. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 3313 - Fluid Mechanics

Fundamentals of fluid mechanics. Topics include fluid properties, hydrostatics, the continuity principle, the energy principle, the momentum principle, similitude and dimensional analysis, drag, and friction for laminar and turbulent flow in closed conduits. Prereq: CVEN 2121. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3323 - Hydrosystems Engineering

This course covers hydrologic cycle, rain gage and stream gage, basics of rainfall and runoff data analysis, Rational method for peak flow predictions, culvert hydraulics with consideration of inlet and outlet control, sanitary sewer sizing, basics of open channel hydraulics. This course also includes a session of hydraulic experiment to measure the turbulent flow distribution in a steel pipe. Prereq: CVEN 3313. Coreq: CVEN 2200. Restriction: Restrctited to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3401 - Introduction to Environmental Engineering

An introductory course that provides a unique systems approach to environmental engineering, examining the source-to-receptor feedback loop for pollution control. Physical, chemical and biological processes are integrated across atmospheric, wastewater and subsurface systems. Laboratory exercises provide direct experiential learning of key concepts. Prereq: CHEM 1130 or CHEM 2031 or ENGR 1130. Cross-listed with CVEN 5401. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3414 - Water Supply and Distribution Systems

Planning and design for potable water supply and distribution. Topics include the civil engineering design process, pressurized pipe networks, pump selection, water demand estimation, surface- and groundwater resources, and reservoir operation. Design project and field trip required. Prereq: CVEN 3313 with a C- or higher. Coreq: CVEN 2200. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3505 - Structural Analysis

Principles of structural analysis applied to statically determinate and indeterminate structures. Prereq: CVEN 3121. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 3602 - Transportation Engineering

This course will introduce you to the concepts and methods of transportation engineering, planning and management. This course will emphasize traffic engineering. Topics will include vehicle dynamics, traffic flow fundamentals, accident analysis, signal timing, highway capacity analysis, level of service analysis, freeway operations, and evaluation procedures for alternative transportation projects. Prereq: C- or better in MATH 1401 or Junior Standing or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3611 - Engineering Statistics

Covers statistical methods for engineering studies. Topics include common probability distributions, sample design, descriptive statistics, hypothesis testing of one or two populations, tests of discrete versus continuous random variables, analysis of variance, linear and non-linear multiple regression models, non-parametric tests of fit. Prereq: Math 1401 Calculus I and Math 2411 Calculus II. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3718 - Geotechnical Engineering I

Soil formation, phase diagram, soil constituents and behavior, description of soils, classification, clay minerals, compaction, soil improvement, capillarity, shrinkage, swell, collapsible soil, frost action, flow through porous media, and consolidation. Lab experiments, including specific gravity, grain size analysis, liquid and plastic limits, and consolidation, are to be conducted in concert with the lectures. Prereq: CVEN 3121. Coreq: CVEN 3313. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 3800 - Special Topics: 3800

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CVEN 3840 - Independent Study

This category is intended for topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Departmental approval is required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 8

CVEN 4000 - Senior Seminar

Required for all Civil Engineering majors. Each student shall take the state-administered Fundamentals of Engineering (F.E.) examination. This course is taken the semester of or prior to graduation. This course will meet one time after the FE exam and prior to the graduation ceremony to review curriculum and examination results. This course is a pass/fail course and failure to attend the meeting of this course will cause a fail, and may delay graduation. Prereq: approved 30 credit hour check. Max hours: 0 Credits. **Semester Hours:** 0 to 0

CVEN 4025 - Autocad Civil 3d & Advanced Civil Engineering Graphics

Lectures target civil engineering industry specific site information modeling software and geospatial industry specific geographical information systems software to elevate students' knowledge of each software to an in-depth understanding. Laboratory exercises will focus on civil drafting and design, producing documentation, and general project workflows. Additional laboratory exercises will focus on geospatial data creation, data management, and cartographic display. Prereq: CVEN 1025. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4067 - Senior Design Projects

Senior civil engineering students, working in teams, are assigned significant open-ended design problems requiring the synthesis of material learned in previous engineering courses for solution. Design teams work independently under the supervision of a civil engineering faculty member. Prereq: Graduation Agreement and one design course. Co-req: A second design course. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4077 - Engineering Economy

Applies economic and financial principles to evaluation of engineering alternatives. Calculation of annual costs, present worth and prospective rates of return on investment. Review of systems analysis techniques, including simulation, linear programming, and project scheduling. Prereq: Junior standing. Cross-listed with MECH 4147. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4087 - Engineering Contracts

Laws met by the practicing engineer, types of contracts, specification writing, laws on contracts, agency, partnership, sales and property, with primary emphasis on rights and duties of the engineer. Prereq: Senior standing. Cross-listed with CVEN 5087. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4230 - Construction Engineering Systems

Course provides an introduction to construction engineering management including building mechanical and electrical systems. Restrictions: Restricted to Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4388 - Site Engineering

Course introduces the fundamentals of site engineering which require understanding and interpreting landforms, slopes, contour lines, grading, drainage, and earthwork to storm water management, hydrology reports, designing roadways, and street networks. Other topics include designing for ADA and concepts of sustainability in site design. Note: CAD experience is recommended. Cross-listed with CVEN 5388. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4424 - Field Methods for Sustainable Development: Colombia

Course will introduce students to international sustainable development in both lab and field work in Colombia, partnering with communities on sustainable development projects across cultures and disciplines both within and outside of engineering, and emphasizing community interaction. Travel fees are required. Note: Personal essay, letter of recommendation, and interview with instructor required. Cross-listed with CVEN 5424. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 4427 - Storm Water System Design

This course covers urban watershed analysis, design rainfall and hydrologic losses, flood frequency and design event, rational method for peak runoff prediction, street hydraulic capacity and safety, culvert hydraulics, street inlet collection system, and storm sewer system design and flow analysis. Prereq: CVEN 3323 and senior standing. Restriction: Restricted to Civil Engineering majors. Cross-listed with CVEN 5427. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4537 - Numerical Methods for Engineers

Introduces numerical analysis. Solution of linear and non-linear equation systems. Numerical methods for ordinary and partial differential equations. Engineering applications. Prereq: CSCI 1410, MATH 3191 and 3200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4565 - Timber Structure Design

Design of wood roof, wall, and floor systems including beams, columns, trusses, diaphragms and shear walls for vertical and lateral loads. Connection design, glued-laminated members, plywood, and engineered lumber are incorporated. Prereq: CVEN 3505 and CVEN 3141. Cross-listed with CVEN 5565. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 4575 - Structural Steel Design

Design of structural steel members and their connections. Prereq: CVEN 3505 and CVEN 3141. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4585 - Reinforced Concrete Design

Ultimate strength methods for design of reinforced concrete structures. Prereq: CVEN 3505 and CVEN 3141. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4590 - Design of Prestressed Concrete

To learn the basic concepts of analysis and design of prestressed concrete, which is reinforced concrete in which steel is tensioned against the concrete, thereby introducing compression in concrete and hence overcoming the tensile weakness of concrete relative to its compressive strength. Cross-listed with CVEN 5590. Prereq: CVEN 4585 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4602 - Highway Engineering

Evaluates alternate highway routes. Discusses highway drainage, finance, maintenance, pavement design, traffic operations and principles of economic analysis. Analyses of the impact of the highway on the environment. Cross-listed with CVEN 5602. Prereq: CVEN 3602 with a C- or better. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4612 - Traffic Impact Assessment

Covers (1) procedures to satisfy state and local requirements for transportation impact studies, (2) methods to perform trip generation, distribution, and traffic assignment for impact analyses, and (3) analysis of transportation impacts on residential communities, mode choice, regional business (downtown or suburban), peak and off-peak travel times, noise, safety, parking and pedestrians. A course project requires students to develop an application of analysis software to a case study area. Prereq: CVEN 3602. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4621 - Highway Capacity Analysis

Covers the principles and applications of highway capacity analysis for freeways and arterials, ramps and interchanges, weave and merge sections, signalized and unsignalized intersections, roundabouts, pedestrian areas and transit. Emphasis is on level-of-service analysis procedures in the Highway Capacity Manual, although other approaches are also discussed. Additional

topics include roadway characteristics, vehicle dynamics, human factors, speed and volume studies, travel time surveys and traffic flow characteristics. Prereq: CVEN 3602. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4719 - Design & Construction of Geosynthetic Soil Structures

Theory of reinforced soil; Mechanical and hydraulic properties of geosynthetics; Soil-geosynthetic interaction behavior; Design concepts of GRS structures; Design and construction of GRS retaining walls; Design and construction of GRS embankments and slopes; Design and Construction of GRS foundations. Prereq: CVEN 3718 and 4728. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 4728 - Geotechnical Engineering II

Shear behavior and strength, and basic applications of shear strength (such as earth pressure and retaining structures, bearing capacity of footings, and slope stability). Lab experiments, including permeability, direct shear, unconfined compression, and triaxial tests, are to be conducted in concert with the lectures. Prereq: CVEN 3708/3718. Restriction: Restricted to Civil Engineering majors. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CVEN 4738 - Intermediate Foundation Engineering

Applies principles of soil mechanics to the analysis and design of foundations and earth structure. Theories of consolidation, earth pressure, slope stability, and bearing capacity. Studies settlement of structures, shallow and deep foundations, retaining walls and excavations. Cross-listed with CVEN 5738. Prereq: CVEN 3708/3718 and CVEN 3141. Coreq: CVEN 4718/4728. Restriction: Restricted to Civil Engineering majors. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 4780 - Engineering Geology

Studies geology as utilized in engineering and environmental practice. Emphasizes a conceptual integration of geologic materials, processes, and rates of change as a basis for successful application of geologic knowledge to environmental planning and engineering design projects. Prereq: MATH 2411 and CVEN 2121. Cross-listed with CVEN 5780 and GEOL 4780, 5780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 4800 - Special Topics

Supervised study of special topics of interest to students under guidance of instructor. Prereq: Permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

CVEN 4840 - Independent Study

This category is intended for topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Departmental approval is required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CVEN 5025 - Autocad Civil 3d & Advanced Civil Engineering Graphics

Lectures target civil engineering industry specific site information modeling software and geospatial industry specific geographical information systems software to elevate students' knowledge of each software to an in-depth understanding. Laboratory exercises will focus on civil drafting and design, producing documentation, and general project workflows. Additional laboratory exercises will focus on geospatial data creation, data management, and cartographic display. Prereq: CVEN 1025. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5087 - Engineering Contracts

Laws met by the practicing engineer, types of contracts, specification writing, laws on contracts, agency, partnership, sales and property, with primary emphasis on rights and duties of the engineer. Cross-listed with CVEN 4087. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5110 - Advanced Structural Classical Analysis

Understanding classical hand-solved analysis techniques in civil and structural engineering. Methods to be studied include: Moment Area, Conjugate Beam, Virtual Work, Stiffness Method, Force Method, Slope Deflection, and Moment Distribution. Prerequisite: CVEN 3505 with B- or better or graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5111 - Structural Dynamics

Vibration and dynamic response of simple linear and nonlinear structures to periodic and general disturbing forces. Frequency domain analysis, response analysis of multi-degree-of-freedom systems. Wind and earthquake effects. Prereq: CVEN 3505. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5112 - Structural Design Loads

The course will review the probabilistic approach for load determination used in modern building codes from theoretical and applied perspectives. The course is intended to study dead loads, live loads, snow loads, earthquake loads, wind loads, and load combinations for buildings; and selected topics on bridge loads. Other topics may be treated as time permits. Prereq: CVEN 3505 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5121 - Intermediate Mechanics of Materials

Intermediate-level course in the mechanics of deformable bodies. Plane stress and strain; stress-strain relation with emphasis on elastic and inelastic behavior of members, and theories of failure. Discussion of basic methods of structural mechanics, with applications to asymmetric and curved beams, thick walled pressure vessels, torsion of members of noncircular section, and other selected problems in stress analysis. Prereq: CVEN 3121, MATH 3191 and 3200, or graduate standing in the College of Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5201 - Construction Dewatering

Introduction to construction dewatering including removal of ground water and surface water in construction sites, characteristics of groundwater aquifers, groundwater flow, geotechnical investigation of dewatering problems and application of modern dewatering technology. Basic methods for controlling water on a construction project are presented incorporating open flow and pumping of excavations, soil pre-draining, water cutoff and exclusion. Prereq: Theoretical/applied fluid mechanics, Soil mechanics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5231 - Construction Materials and Methods

This course presents information regarding the primary materials and methods used to design and construct the majority of buildings in the United States including concrete, wood and steel. Students explore processes related to the specification, ordering and installation of various construction materials, as well as analyze various materials' performance characteristics. Two important themes are incorporated throughout discussions: sustainability and ethics. In addition to lectures and class activities, students will be asked to research, define, and present information regarding a wide range of material properties and construction processes. Prereq: CEMENT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5333 - Surface Water Hydrology

Fundamentals of hydrology emphasizing surface water processes. Topics include the hydrologic cycle, frequency analysis, drought management, flood routing, rainfall-runoff relationships (rational method, unit hydrograph, and hydrologic software) and hydrologic design. Prereq: B- or better in CVEN 3313 or graduate standing or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5334 - Groundwater Hydrology

Topics include groundwater occurrence, hydrologic cycle and budget, interactions with surface waters, principles of groundwater flow, well hydraulics, well field design, regional flow systems, water and pollutant chemistry, computer modeling and groundwater management. Emphasis is on quantitative analysis methods for groundwater resource inventory, design and

management. Prereq: B- or better in CVEN 3313 or graduate standing or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5335 - Vadose Zone Hydrology

Engineering analysis of the vadose zone, the unsaturated porous media linking the earth surface to groundwater. Darcy's law for flow. Richards equation for moisture content. The advection-dispersion equation for solutes. Analytical solutions and numerical modeling applied to infiltration, evaporation, drainage, and subsurface remediation. Prereq: B- or better in CVEN 3313 or graduate standing or instructor permission. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5336 - Urban Runoff Quality and Quantity Modeling

This course covers rainfall/runoff data base, rain gage under-catch, statistical models for frequency analysis, Unit Graph and Kinematic Wave method for runoff prediction, urban watershed modeling, event-based flood prediction, continuous flow predictions, modeling consistency and sensitivity, impact assessments, master drainage planning, and storm centering technique. Prereq: CVEN 3323 with a C- or higher and graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5337 - Sustainable Hydraulic System Design

This course applies the low-impact-development (LID) principles to design stormwater hydraulic structures in urban areas. The major topics in this course will cover storm water quality capture volume, filtering process for water quality control, and infiltration process for on-site stormwater disposal, including porous pavements, vegetation beds, bio swales, rain gardens, and landscaping detention. The computer model, EPA SWMM-LID, will be employed to guide the selection of design parameters and to evaluate the structural performance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5343 - Open Channel Hydraulics

Engineering analysis and design of natural and artificial open channels. Application of uniform flow concept to design of erodible and non-erodible channels. Application of energy and momentum principles to conditions of gradually varied flow, spatially varied flow and rapidly varied flow. Prereq: CVEN 3323 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5344 - Unsteady Open Channel Hydraulics

Derivation of basic principles of unsteady open channel flow. Application of kinematic wave, diffusive wave and dynamic wave approaches to open channel, including overland flow and flow in a drainage or river network. Introduction of numerical finite difference methods,

characteristic method and simplified analytical method for the solution of unsteady open channel flow problems. Evaluation of computer simulation models such as DWOPER and SWMM. Prereq: CVEN 5343 and CVEN 5333 or permission of instructor. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 5345 - Computational Methods for Water Resources

This course covers two major areas: hydrologic and hydraulic numerical routing schemes. The hydrologic routing includes linear and nonlinear reservoir operations using the characteristic curves derived from the reservoir geometry. The hydrologic routing numerical scheme will be applied to optimize the reservoir operations for power generation, irrigation, and flood control. The hydraulic routing covers Dynamic Flood Wave, Diffusive Wave, and Kinematic Wave. The finite difference method is used to develop numerical models to predict flood flows through channels. This course also covers probable maximum precipitation and dam break flow analysis.

Prereq: CVEN 3323. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5381 - Introduction to Geographic Information Systems

Provides an overview exposure and experience with various aspects of GIS technology and its uses for natural resource and infrastructure, planning, design and management. This course involves a survey of GIS software and hardware, review of cartographic mapping principles, hands-on applications to environmental impact assessment, municipal facilities management, transportation, water resources and demographics. GIS project management factors are addressed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5382 - Geospatial Data Development

This second GIS course builds on the introductory course and addresses principles and technologies for development and conversion of spatial databases, including photogrammetry, surveying and geodesy, coordinate systems and transformations, and remote sensing. Prereq: CVEN 5381. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5383 - GIS Analysis -- Theory and Practice

This third course reviews GIS software functions and terminology, including data entry (input, editing), manipulation (projection, merge, window, aggregate), analysis (map algebra, overlay, Boolean, interpolation network, measurements, distance, terrain modeling, statistical analysis), query (spatial, attribute), and display/reporting. Integration of various domain-specific systems analysis models with GIS databases is also addressed. Laboratory activities involve programming applications using available GIS. Prereq: CVEN 5381. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 5384 - GIS Project Management

This course explains how to build a foundation for GIS project success and deliver results. Topics include data governance, administration of technical infrastructure, managing roles and skills, key leadership concepts, and project management methodologies like Agile/Scrum. Best practices and real world applications are discussed. Also addressed are issues of GIS institutional acceptance, the role of computerized spatial data systems in decision-making, application of planning techniques for accomplishing resource goals, and administrative structures that enhance efficiency of use. Prereq: CVEN 5381. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5385 - GIS Relational Database Systems

Introduces relational database management system concepts with emphasis on GIS. Includes examination of relational database systems from conceptual design through relational schema design and physical implementation. Topics include SQL, database design and implementation for large database systems, transaction management, concurrency control, distributed database management systems and the interaction and progressive integration of GIS technologies and RDBMS technologies. Coreq: CVEN 5381. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5386 - GIS Laboratory

Provides in-depth experience with use and programming of a particular GIS software, including ArcGIS and related object-oriented programming languages. Advanced functionality for user authoring of software interface, data management and analysis functions and output generation. Exact content will vary by semester. Prereq: CVEN 5381. Repeatable. Max Hours: 18 Credits. **Semester Hours: 3 to 3**

CVEN 5387 - Advanced Remote Sensing

Addresses remote sensing concepts including 1) imaging sensors and geo-referencing; 2) image processing for radiometric, multi-spectral image enhancement, and multi-sensor image fusion; and 3) multi-spectral image classification, including feature extraction, supervised and unsupervised classification, and extensions to hyper-spectral data. Prereq: CVEN 5382. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5388 - Site Engineering

Course introduces the fundamentals of site engineering which require understanding and interpreting landforms, slopes, contour lines, grading, drainage, and earthwork to storm water management, hydrology reports, designing roadways, and street networks. Other topics include designing for ADA and concepts of sustainability in site design. Note: CAD experience is recommended. Cross-listed with CVEN 4388. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5389 - Open Source Desktop Mapping, Modeling & Data Processing

This graduate-level course covers the open source tools and procedures that students can use for desktop GIS mapping, modelling, and data analysis and preparation that are unique in comparison to other GIS software used in the industry. Prereq: CVEN 5381 Intro to GIS or equivalent permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5390 - Interactive Web Mapping GIS

This course introduces students to designing, creating, delivering, and using interactive web maps. Many people rely daily on web maps to direct us from point A to point B and more. After starting with a broad introductory background, this is a technical hands-on course in which students use several open source (FOSS) technologies. Prereq: CVEN 5381 Introduction to GIS or equivalent or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5391 - Introduction to Geomatics

This course presents the concepts of Geomatics along with spatial data, tools, and their connection. This course covers spatial data collection methods, data assessment, and processing. The course also covers projections, methods of coordinate conversion and transformation, and data transfer across different spatial analysis platforms. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5392 - Unmanned Aerial Systems

This course presents concepts and practical methods of using Unmanned Aerial Vehicles for engineering projects. The course covers mission planning, operations, field data collection and processing, and data analysis. Legal and ethical considerations are also covered, as well as the relative costs and benefits of using UAV. Prereq: CVEN 5391. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5393 - Water Resources Development and Management

A multidisciplinary exploration of the principles governing water resources planning and development. Emphasis is on the sciences of water (physical, engineering, chemical, biological and social) and their interrelationships. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5395 - GPS/GNSS

This course presents the practical concepts and implications of using GPS/GNSS for engineering projects. The course covers a variety of techniques for field data collection, processing, and data analysis. The course emphasis is on changes that are occurring because of using GPS/GNSS in the field. Prereq: CVEN 5391. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5396 - HDS/LiDAR Tools & Data Analyses

High Definition Surveying (HDS) scanners are extremely reliable and accurate geospatial data collection devices for surveyors, GIS analysts, engineers, and planners. The goal of this unique course is to present the instrumentation and technological principals used in data collection, project phases, data processing and analyses. This course is designed to provide information and practical skills for students wanting to learn how to plan and execute terrestrial LIDAR data collection projects with HDS scanners and HDS data processing software. Prereq: CVEN 5381 and CVEN 5395 or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5397 - Unmanned Aerial Systems Data processing

This course will provide information and practical skills for unmanned aerial systems data processing and analyses. The course focuses on sensor selection, ground control, data processing, and data analyses. Prereq: CVEN 5391 and CVEN 5392. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5401 - Introduction to Environmental Engineering

Provides a broad overview of the environmental engineering and pollution control system. Offers a unique systems approach to environmental engineering, examining the source-to-receptor feedback loop system of pollution control. Process principles underlying pollutant, transport, abatement, and control are presented in a unified manner, cross-cutting atmospheric, wastewater and subsurface systems. Prereq: CHEM 1130, CHEM 2031, or ENGR 1130, and Graduate standing in MSCE or MSES programs or permission of instructor. Cross-listed with CVEN 3401. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5402 - Integrated Environmental Modeling

Provides unified understanding of fundamental physical, chemical and biological processes that govern the transport and fate of pollutants in environmental systems - water, air and subsurface. The course focuses on multimedia modeling and model solution methods. The course also introduces exposure and risk assessment techniques. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5403 - Environmental Regulations and Management Systems

Students will receive an overview and understanding of major environmental laws and will be introduced to legal concepts used to develop environmental laws. In addition, students will learn about environmental management systems and their applications to environmental problems. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5404 - Sustainable Water Systems: Physical & Chemical Processes

A comprehensive course that covers the theory and application of chemical (acid base equilibria, redox reactions, chemical equilibrium and kinetics etc.) and physical processes (sedimentation, filtration, adsorption, membrane separation, reactor design) used in water quality engineering, with an emphasis on sustainable treatment options, looking at social, economic and environmental aspects of these technologies. Since numbers of these technologies are energy intensive, emphasis will be placed on life cycle impacts and energy efficiency of these processes. The lectures will integrate source water quality, local, geographical conditions and regulatory requirements into design of the treatment options. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5405 - Systems Analysis for Environment and Sustainability

Focuses on quantitative techniques for environment systems modeling, analysis and assessment. The course primarily covers life cycle assessment (LCA) techniques. The students will learn the various steps for conduction an LCA including goal and scope definition, life cycle inventory (LCI), life cycle impact assessment (LCIA) and interpretation. Mathematical techniques for uncertainty & sensitivity analysis, such as Monte Carlo simulations will be covered. Students will be exposed to several LCA case studies. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5406 - Engineering and Science Informatics

Students will learn applied, basic statistics & probability concepts and provide experience in the correct use and interpretation of those techniques. The course is designed in such a way that any graduate or undergraduate level student wanting to learn data analysis will benefit. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5407 - Complex Systems Modeling for Sustainability Analysis

This graduate course introduces nonlinear dynamics, information theory, and network analysis in an environmental engineering, earth sciences, and sustainability context. Techniques will be applied to analyze environmental and weather data in addition to other examples relevant to engineering and critical zone science. Prereq: Graduate standing or CVEN 3313 with a B- or better. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CVEN 5424 - Field Methods for Sustainable Development: Colombia

Course will introduce students to international sustainable development in both lab and field work in Colombia, partnering with communities on sustainable development projects across cultures and disciplines both within and outside of engineering, and emphasizing community interaction. Travel fees are required. Note: Personal essay, letter of recommendation, and interview with instructor required. Cross-listed with CVEN 4424. Max hours: 3 Credits.

Semester Hours: 3 to 3

CVEN 5427 - Storm Water System Design

This course covers urban watershed analysis, design rainfall and hydrologic losses, flood frequency and design event, rational method for peak runoff prediction, street hydraulic capacity and safety, culvert hydraulics, street inlet collection system, and storm sewer system design and flow analysis. Prereq: CVEN 3323 with a C- or higher. Restriction: Restricted to Civil Engineering majors. Cross-listed with CVEN 4427. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5434 - Sustainable Water Systems: Biological Processes

A comprehensive course that covers the theory and application of biological processes used in water quality engineering, with an emphasis on state-of-the-art water pollution control and waste-to-energy technologies. The initial lectures will introduce material on microbial energetics, diversity, and kinetics. The remainder of the course will involve the application of fundamental principles to treatment and energy recovery processes, including bioreactor configurations and design considerations. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5460 - Introduction to Sustainable Urban Infrastructure

This course takes a systems approach to urban infrastructures that deliver critical materials to cities; primarily water, energy, transportation, buildings, and food systems. The focus is on the current state of sustainable development, cities, and infrastructure systems, exploring sustainability strategies and measuring their effectiveness, and analyzing implementation and diffusion of sustainability strategies. Cross-listed with URPL 6399. Prereq: Graduate standing or instructor permission. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5461 - Defining and Measuring Sustainability

Unique cross-disciplinary course that teaches students community engagement strategies to define sustainability goals. Life cycle assessment and material flow analysis tools used to measure environmental sustainability benchmarks. Field work applies both tools to cities in Colorado. Cross-listed with URPL 6548. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5464 - Sustainability and Climate Change

This course explores environmental sustainability in the context of climate change, emphasizing feedbacks and interactions within the climate-ecosystem-water-energy-food system. Course topics include climate and ecosystem modeling, climate data analysis, and testing students' assumptions and inferences regarding various sustainability topics. Prereq: Graduate standing or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5480 - Hazardous Wastes and Site Remediation

Students learn to: (1) define and classify hazardous wastes encountered at hazardous waste-contaminated sites, (2) learn basic principles underlying currently available technologies for site remediation, (3) use EPA's technology screening matrix for technology selection, and (4) provide engineering design for selected remediation systems, e.g. ground-waterpump-and-treat, soil vapor extraction, soil washing, and bioremediation. Prereq: CVEN 5402. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5481 - Sustainable Water Systems Policy and Planning

To provide students with a working knowledge of sustainable urban water systems which are resilient, resource efficient and environment friendly. Students will learn about the various components of urban water and wastewater systems, including water resource management, treatment, transport and reuse, and how to evaluate, develop and design the various components in a sustainable manner. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5494 - Risk Assessment in Environmental Engineering

The process of determining the likelihood and extent of harm that may result from an activity or event. Topics covered are: hazard identification, dose-response evaluation, exposure assessment, and risk characterization. The subjects of risk management, risk perception, and risk communication are also discussed. Prereq: Graduate standing or permission of instructor. Cross-listed with ENVS 6200, HBSC 7340. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5514 - Matrix Analysis of Structures

Matrix analysis of skeletal structures. Systematic formulation of stiffness and flexibility methods of analysis of skeletal structures. Application of modern computational tools to structural analysis, including introduction to the finite element method. Prereq: CVEN 3505. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5515 - Introduction to Finite Element Analysis

Systematic formulation and application of the finite element approximation to the solution of engineering problems. Topics include one- and two-dimensional elasticity problems, two-dimensional heat flow and irrotational fluid flow. Elements considered include triangular and quadrilateral elements formulated by elementary and isoparametric techniques. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5540 - Masonry Design

Structural analysis and design of masonry structures, combining theoretical principles of mechanics and applied structural engineering. The Strength Method of design will be emphasized. Coreq: CVEN 4585. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5550 - Highway Bridge Design

Design of highway bridges in accordance with the ASHTO LRFD Bridge Design Specification. Topic coverage includes bridge planning, construction materials in bridges, bridge systems, design loads, structural modeling and analysis, design of concrete deck system, and design of concrete and steel superstructures. Prereq: CVEN 4575 and CVEN 4585 or graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5565 - Advanced Timber Structure Design

Design of wood framing systems including beams, columns, trusses, and diaphragms. Wood as a material, framing terminology, connection design, structural composite lumber, glued-laminated members, and plywood are covered. The course will emphasize on preparing students for a career in structural engineering. Prereq: Graduate Standing or (CVEN 3505 and 3141 with a C- or higher and Civil Engineering major). Cross-listed with CVEN 4565. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5575 - Advanced Topics in Structural Steel Design

Plate buckling, plate girder design and other topics determined by class interest. Prereq: CVEN 4575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5580 - Design of prestressed concrete structures

To learn the basic concepts of analysis and design of prestressed concrete, which is essentially reinforced concrete in which steel reinforcement is tensioned against the concrete, thereby introducing compression in concrete and hence overcoming the tensile weakness of concrete relative to its compressive strength. Prereq: CVEN 4585. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5585 - Advanced Topics in Reinforced Concrete

Advanced topics relating to design and analysis of reinforced concrete structures. Prereq: CVEN 4585. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5590 - Design of Prestressed Concrete

To learn the basic concepts of analysis and design of prestressed concrete, which is reinforced concrete in which steel is tensioned against the concrete, thereby introducing compression in concrete and hence overcoming the tensile weakness of concrete relative to its compressive strength. Cross-listed with CVEN 4590. Prereq: CVEN 4585 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5602 - Advanced Street & Highway Design

This course delves into the art and science of designing sustainable and context sensitive street and highway facilities. Topics include road classification, transportation planning, road alignments, cross-section design, bicycle and pedestrian facilities, intersections, and street network design. Cross-listed with CVEN 4602. Prereq: Permission of Instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5611 - Transportation Engineering Statistics

Covers statistical analysis methods for engineering studies in general, and for highway accident and traffic flow data in particular. Topics include data needs, sampling designs, survey methods, hypothesis testing, tests of proportions, non-parametric tests, analysis of variance, multivariate regression, and other tests of fit. Introductory overview of state and federal accident databases. Comparisons of accident rates by highway type, vehicle speeds, vehicle types, weather conditions and other factors also presented. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5612 - Traffic Impact Assessment

Covers (1) procedures to satisfy state and local requirements for transportation impact studies, (2) methods to perform trip generation, distribution, and traffic assignment for impact analyses, and (3) analysis of transportation impacts on residential communities, mode choice, regional business (downtown or suburban), peak and off-peak travel times, noise, safety, parking and pedestrians. A course project requires students to develop an application of analysis software to a case study area. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5613 - Traffic Simulation Modeling

This graduate-level course introduces students to the principles, methods, and software needed to perform traffic simulations of alternative transportation modes in urban areas. Students will develop a case study simulation of their choosing. Pre-req: CVEN 5621 Highway Capacity Analysis or equivalent permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5621 - Highway Capacity Analysis

Covers the principles and applications of highway capacity analysis for freeways and arterials, ramps and interchanges, weave and merge sections, signalized and unsignalized intersections, roundabouts, pedestrian areas and transit. Emphasis is on level-of-service analysis procedures in the Highway Capacity Manual, although other approaches are also discussed. Additional topics include roadway characteristics, vehicle dynamics, human factors, speed and volume studies, travel time surveys and traffic flow characteristics. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5622 - Traffic Operations and Control

Covers principles of traffic flow and analysis methods for surface street traffic systems. Emphasis is on network modeling and simulation of coordinated signal systems, together with unsignalized intersections and freeway junctions using modern software tools. Additional topics include alternative signal timing plans, signal controllers, vehicle detection systems for volume, speed, occupancy and ramp metering. A course project requires students to develop and apply modeling software to a case study area. Prereq: CVEN 5621 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5631 - Transport Modeling & Big Data

This graduate-level course introduces students to travel demand modeling as developed over the last 60 years. It covers the fundamentals of conventional models and data needs but also delves into newer "big" data sources and methods that will allow us to observe and analyze transportation in completely new ways. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5632 - Urban Transportation Modeling

An advanced coverage of urban and regional transportation planning models, procedures and software. Mathematical formulations, properties, and solution algorithms are presented. Additional topics include methods of data acquisition from public domain databases for use in modeling software. A course project requires students to develop an application of modeling software to a case study area. Prereq: CVEN 5631 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5633 - Case Studies in Sustainable Transportation

This course examines notable topics in sustainable transportation: demystifies conventional transportation engineering methods; and explores empirical examples of why such methods are often misguided. The intent is to enlighten engineering students and help support planning/policy students interested in transportation sustainability. Prereq: graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5641 - Transit System Design

This course introduces students to the components of transit system planning and design including station design and accessibility. The course focuses primarily on light rail design, but provides an overview of different transit modes. The instructors of this course have hands-on experience in transit planning, design, and construction. Prereq: graduate standing or permission of instructor. **Semester Hours:** 3 to 3

CVEN 5642 - Transit Construction

This course introduces students to the fundamentals of transit construction necessary for successful project completion. It also covers how many different types of transit projects are managed and sustained. The instructors of this course have hands-on experience in transit construction, scheduling, and project control. Prereq: graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5652 - Airport Planning and Design

National airport system plan, air travel demand, geometric design of airport facilities, design of airport pavement and drainage structures, and airport environmental impact. Prereq: CVEN 3602 and graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5662 - Transportation System Safety

This is a graduate-level course on road safety that will: investigate contemporary safety analysis techniques; highlight the disconnect between the current safety paradigm and actual safety outcomes; cover drive, bicyclist and pedestrian safety concerns; and discuss notable efforts such as Vision Zero. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5682 - Pavement Design

Design of flexible and rigid pavements for highways and airports; stress analysis in flexible and rigid pavements; design of joints and reinforcing steel for rigid pavements; principles of subgrade stabilization. Prereq: CVEN 3141, 3505, and 3708/3718 with a C- or higher, OR graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5708 - Advanced Soils Engineering

A unified treatment of the foundation of soil engineering analysis. Topics include stress-strain-strength of soils; generalized limiting equilibrium analysis; stability analyses of earth-retaining structures, slopes, and shallow foundations; probabilistic approach of stability assessment; computation of settlement of foundations in sand and clay and time-rate of consolidation and critical state concept. Special attention is directed toward the illustration of theory through practical examples. Prereq: CVEN 3708 or 3718, and CVEN 4718 or 4728, or Graduate Standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5709 - Settlement Analysis

A unified treatment of settlement analysis on sand and clay. Topics include settlement of shallow foundation, settlement of deep foundation, and settlement of embankments, walls and excavations. Conventional methods of analysis and the finite element method of analysis are covered. Critical design implications are emphasized. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5718 - Engineering Properties of Soils

Engineering properties of soils, including index properties, permeability, stress-strain behaviors, shear strength, compressibility, critical state soil models and their application in interpreting soil behaviors. Attention also is directed to laboratory and in situ tests to examine the validity of shear strength and compressibility theories and their application to stability and settlement analysis. Prereq: CVEN 3708 or 3718, and CVEN 4718 or 4728, or Graduate Standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5719 - Design and Construction of Geosynthetic-Reinforced Soil Structures

Theory of reinforced soil; mechanical and hydraulic properties of geosynthetics; soil-geosynthetic interaction behavior; design concepts of GRS structures; design and construction of GRS retaining walls; design and construction of GRS embankments and slopes; design and construction of GRS foundations. Prereq: CVEN 5708. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5738 - Foundation Engineering

Methods of subsurface exploration and sampling of soils, lateral support in open cuts, control of groundwater, analysis and design of shallow foundations, analysis and design of deep foundations, bridge abutments and cofferdams, underpinning, and application of modern computational techniques to analysis and design of foundations. Cross-listed with CVEN 4738. Graduate Standing or all of the following: Prereq: CVEN 3708/3718 and CVEN 3141. Coreq: CVEN 4718/4728 Restricted to Civil Engineering majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5758 - Foundations on Expansive Soils

Expansive soils swell upon wetting because of the swelling nature of constituent clay minerals, particularly montmorillonite. This course studies swelling nature of different clay minerals, effects of wetting, swelling potential, swelling pressures, and design of different foundation systems. Prereq: CVEN 4738, B.S.C.E. or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5768 - Introduction to Rock Engineering

Nature of rock masses, geological exploration, deformability and strength, in situ stresses and deformation, rock hydraulics. Prereq: CVEN 3708 or 3718, and CVEN 4718 or 4728, or Graduate Standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5780 - Engineering Geology

Studies geology as utilized in engineering and environmental practice. Emphasizes a conceptual integration of geologic materials, processes, and rates of change as a basis for successful application of geologic knowledge to environmental planning and engineering design projects. Prereq: MATH 2411 and CVEN 2121. Cross-listed with CVEN 4780 and GEOL 4780/5780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5798 - Dynamics of Soils and Foundations

Principles of vibrations of, and wave propagation in, elastic, homogeneous, isotropic media; laboratory and in situ measurements of soil properties; applications of these principles and properties to the design of foundations subject to dynamic loading generated by machinery, earthquakes, or blasts. Prereq: CVEN 5708, 5718, and graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 5800 - Special Topics

Topical courses offered once or on irregular intervals. Typical topics include: computer-aided structural engineering, pre-stressed concrete, non-matrix structural analysis, geotechnical aspects of hazardous waste management, geographic information systems and facility management, groundwater hydrology, engineering project management, structural planning, engineering practice, spreadsheet application, field instrumentation, hazardous wastes engineering, bridge super and substructure design, advanced steel design, hydraulic transients, foundations -- expansive soils, sludge process design. Prereq: Variable. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

CVEN 5840 - Independent Study

Available only through approval of the graduate advisor. Subjects arranged to fit needs of particular student. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CVEN 5939 - Internship

Max Hours: 3 Credits. **Semester Hours:** 1 to 3

CVEN 5950 - Master's Thesis

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

CVEN 5960 - Master's Report

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

CVEN 6111 - Dynamics of Structures

Linear and nonlinear dynamic matrix analysis of multi-degree-of-freedom structural systems. Analysis and design for wind and earthquake loads including modal analysis and sub structuring techniques. Computer programming. Prereq: CVEN 5111. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 6131 - Theory of Elasticity

Mathematical theory of elasticity and its applications to engineering problems. Discussion of the basic analytical and numerical methods of solutions. Prereq: CVEN 5121. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 6165 - Buckling in Structures

Buckling of columns, beams, frames, plates, and shells in the elastic and plastic range. Post-buckling strength of plates. Beam-columns. Analysis by exact and approximate methods with special emphasis on practical implications and application of solutions. Prereq: CVEN 3121. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 6336 - Urban Flood Control System Design

This course covers urbanization impact on watershed regime, flood control measures, detention and retention system, infiltration basin, sand filter, water quality control basin, wetland preservation, storm water Best Management Practices, low impact development, outlet structure design, pond safety, stream restoration, overflow risk analysis and optimal operation. Prereq: CVEN 5333, 5343 and graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 6738 - Finite Element Method in Geotechnical Engineering

Topics covered include: review of finite element methods, advantages and limitation of FEM for analysis of geotechnical engineering problems, one- and two-dimensional seepage analysis, consolidation analysis, incremental and iterative procedures in nonlinear analysis, no-tension analysis, simulation of construction sequence, simulation of soil behavior, simulation of interface behavior, and load-displacement analysis of earth structures. Prereq: CVEN 5708 and 5515 or consent of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CVEN 6840 - Independent Study

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CVEN 7800 - Special Topics

Credit and subject matter to be arranged. Prereq: Variable. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CVEN 7840 - Independent Study

Available only through approval of the graduate advisor. Subjects arranged to fit needs of particular student. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

CVEN 7990 - Doctoral Dissertation

Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

CVEN 8990 - Doctoral Dissertation

Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

CLAS Interdepartmental

CLAS 2939 - Entering Research Internship

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

CLAS 3939 - Internship

Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

CLAS 4840 - Independent Study: CLAS

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

Commodities

CMDT 4582 - Commodity Supply Chain Management

This course introduces the design, analysis, management, and control of supply chains as applied to commodities. The course covers integration of processes and systems, relationship management of upstream and downstream supply chain players, and commodity-specific supply chain strategies. Cross-listed with CMDT 6582. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 4682 - Commodity Valuation and Investment

This course is a practical introduction to commodity markets. Students will learn how commodities are managed in the global markets from a hedgers, speculators and arbitrageurs point of view. Understanding the relationships between commodities and the global economy will be investigated. In addition, commodities will be looked at as an asset class and cross-asset relationships will be studied. Students will be introduced to futures and options markets analysis deploying strategies professional traders use in diverse market conditions. Students will work with the various trading software throughout the course and gain proficiency in real-world trading. Cross-listed with CMDT 6682. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 4782 - Commodity Data Analysis

This course is an applied introduction to commodity data analysis. Students will learn how to analyze commodity prices using quantitative techniques. Relationships between commodities and the global economy will be investigated. In addition, commodities will be looked at as an asset class and cross-asset relationships will be studied. Students will be introduced to forecasting techniques and be able to develop and evaluate various forecasting models. Students will work with the open source R software environment throughout the course and gain proficiency. Cross-listed with CMDT 6782. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 4802 - Foundations of Commodities

This course introduces students to the physical aspects of commodities and connects them to the financial markets in which commodities are traded. Fundamental concepts and terminology necessary for understanding commodity production, transportation, economics, financial analysis and marketing are described. Supply chains for several specific commodities are reviewed in detail, as examples of the production and market structure knowledge needed to be successful professional participants in commodity trading capacities. The course also serves a foundation for more focused education in the specific commodity sectors, as well as the applied use of marketing and financial trading concepts learned in other courses. Cross-listed with CMDT 6802 and FNCE 4802/6802. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 6582 - Commodity Supply Chain Management

This course introduces the design, analysis, management, and control of supply chains as applied to commodities. The course covers integration of processes and systems, relationship management of upstream and downstream supply chain players, and commodity-specific supply chain strategies. Cross-listed with CMDT 4582. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 6682 - Commodity Valuation and Investment

This course is a practical introduction to commodity markets. Students will learn how commodities are managed in the global markets from a hedgers, speculators and arbitrageurs point of view. Understanding the relationships between commodities and the global economy will be investigated. In addition, commodities will be looked at as an asset class and cross-asset relationships will be studied. Students will be introduced to futures and options markets analysis deploying strategies professional traders use in diverse market conditions. Students will work with the various trading software throughout the course and gain proficiency in real-world trading. Note: Students cannot receive credit for both CMDT 6482 or FNCE 6482. Cross-listed with CMDT 4682. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 6782 - Commodity Data Analysis

This course is an applied introduction to commodity data analysis. Students will learn how to analyze commodity prices using quantitative techniques. Relationships between commodities and the global economy will be investigated. In addition, commodities will be looked at as an asset class and cross-asset relationships will be studied. Students will be introduced to forecasting techniques and be able to develop and evaluate various forecasting models. Students will work with the open source R software environment throughout the course and gain proficiency. Cross-listed with CMDT 4782. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CMDT 6802 - Foundations of Commodities

This course introduces students to the physical aspects of commodities and connects them to the financial markets in which commodities are traded. Fundamental concepts and terminology necessary for understanding commodity production, transportation, economics, financial analysis and marketing are described. Supply chains for several specific commodities are reviewed in detail, as examples of the production and market structure knowledge needed to be successful professional participants in commodity trading capacities. The course also serves a foundation for more focused education in the specific commodity sectors, as well as the applied use of marketing and financial trading concepts learned in other courses. Cross-listed with CMDT 4802 and FNCE 4802/6802. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Communication

COMM 1001 - Presentational Speaking

Theory and practice of presentational speaking in a variety of contexts to accomplish goals of asserting individuality, building community, securing adherence, discovering knowledge and belief, and offering perspectives. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 1011 - Fundamentals of Communication

Studies communication theory and application. Topics include communication models, interpersonal communication and the concept of self, nonverbal communication, message preparation and analysis, and decision making. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3. **Semester Hours:** 3 to 3

COMM 1021 - Introduction To Media Studies

Explores the role of contemporary media in shaping our sense of ourselves and our world. The class surveys a broad array of critical approaches to understanding media. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3. **Semester Hours:** 3 to 3

COMM 1041 - Interpersonal Communication

Focuses on the theory and development of interpersonal relationships. Issues covered include the communication process, self versus others, self-esteem, person perception, the attraction process, nonverbal communication, relationship development and family communication. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 1051 - Topics in Communication

Special classes for faculty-directed experiences examining communication issues and problems not generally covered in the curriculum. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 1 to 3

COMM 1071 - Introduction to Journalism

Introduction to Journalism provides students a broad overview of the histories of, debates within, and best practices for journalism in print, digital, and other media. This is a writing intensive course. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 1 to 3

COMM 2000 - Persuasion

Examines influence and communication at individual, group, organizational and societal levels. A theoretical and applied analysis of persuasion, including examination of public opinion,

individual attitudes, beliefs, values, sources, credibility, ethics, and certain message and audience variables. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2017 - Dialog, Debate, and Disagreement

Cultivates academic American English knowledge/skills merging cultural, rhetorical, and linguistic theories with experiential learning. The course is designed for bilingual and non-native English speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2020 - Communication, Citizenship, and Social Justice

Introduction to debates about and means of practicing citizenship and social justice. Issues may include democratic participation, electoral politics, community engagement, and civil rights. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2030 - Digital Democracy

Constant technological innovation means most Americans experience democracy in online formats; this class equips students with tools for living in our digital age. Topics include analyzing websites, studying online political organizing, and learning how to produce materials for online advocacy. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2045 - Workplace Communication

Focuses on theories and practices of leadership, teambuilding, relationship development and other workplace communication skills. The goal of the course is to help students develop advanced communication strategies for managing workplace challenges. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2050 - Business and Professional Speaking

Development of communication skills often used in business and professional settings, with an emphasis on various kinds of presentations. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2051 - Introduction to Strategic Communication

Provides students foundational skills of marketing & public relations, targeted political messaging, and organizational communication, merging theory & practices to study how strategic communication works in different media environments. Students will not receive credit for this class if they have already received credit for COMM 4635. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2071 - Media Writing Skills

A survey course covering the major media writing types including: hard or straight news, features, review, editorials, web content, and social media, plus notetaking, interviewing, and editing skills, and an examination of media bias. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2075 - Researching and Writing in Comm

This on-line class enables students to learn the research and writing skills that will enable them to excel in the rest of the classes they take to complete the Communication major. Because the course is intended for Communication majors, our readings and modes of analysis provide students an overview of the discipline in general and of the "Pathways" that structure our major. The class is writing intensive. Term offered: spring, summer, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2081 - New Media Production and Management

This course develops knowledge and skills in producing, distributing, and managing engaging new media content using the latest digital communication platforms. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2082 - Introduction to Environmental Communication

Intro to Environmental Communication provides students with the foundations for analyzing public debates about environmental sustainability, global warming, economic development, corporate responsibility, and activist movements. Emphasis is placed on representations of these issues in TV, films, music, blogs, and public deliberation. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2140 - Argumentation

Examines classical through contemporary theories, with special attention to types of propositions, burden of proof, analysis of issues, evidence, reasoning, fallacies, case construction, refutation and ethics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 2500 - Introduction to Health Communication

Health industries are among the fastest growing sectors of the U.S. economy; this class enables students to begin thinking about their health, the health of their communities, and the health of the nation as systems of language and power. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3071 - Advanced Media Writing Skills

This class builds upon the skills learned in COMM 1071, Introduction to Journalism, and COMM 2071, Media Writing Skills, by focusing on long-form writing that is suitable for magazines and websites. Prereq: Students must have completed COMM 2071 with a C- or higher, or receive permission from the instructor, to enroll in this course. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3230 - Chinese Communication & Culture in Context

This course is designed for CU Denver students studying at the ICB program in Beijing. For such students, the course introduces Chinese communication practices & cultural expectations, easing the student's transition into life in Beijing. Field trips are required & will be announced 1st day of class. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3231 - Famous U.S. Trials

This introduction to the history of the U.S. trial court system will contextualize significant trials in historic and cultural moments. The course will explore the roles of legal communication and mass communication in contemporary and subsequent representations of the trial. Cross-list HIST 3231. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3271 - Communication and Diversity

Explores the complexities of communication across diverse identities such as race, ethnicity, and gender. Course attempts to seek solutions via sharing meaning and discovering common ground. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3275 - Family Communication

Explores family communication processes in traditional and nontraditional families through examination of theories and research on the family. Topics include conflict, family secrets, decision-making, and practical guidelines for improved communication in families. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3640 - TV, Culture, & Communication

This course examines television theories and histories, from broadcast TV to internet streaming. Investigating TV industries and representations, students will gain an understanding of TV's role in contemporary culture. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3650 - Media and Society

Approaches communication from a historical perspective, examining how major revolutions in communication technologies have influenced and impacted society over time. Term offered: fall, spring, summer. Prereq: COMM 1021 with a C- or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3660 - Social Media for Social Change

Students analyze new social media platforms in terms of their textual and visual content, their software structure, and their interactive features, thus learning how to analyze and produce online content intended to spur social change. Prereq: Students must have completed COMM 1011 and COMM 2020 with a C- or higher, or receive permission from the instructor, to enroll in this course. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 3840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

COMM 3939 - Internship

Applies communication or technical communication concepts and skills in supervised employment situations. Note: This course fulfills the communication department's exit class requirement. Prereq: Students must have completed 15 credit hours at CU Denver and have a 2.75 GPA overall and must work with the Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

COMM 4000 - Communication and Sport

Examines the language and imagery used in sporting discourse. Considers how sports reflect and refract culture, both positively and negatively. Cross-list COMM 5000. Term offered: fall, spring. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4015 - Communication and Civility

Examines the central role of communication in the creation of a civil and humane society. The definition, understanding, and practices of civility in public discourse and in professional, social, and personal relationships are explored. Film, literature, music, and other texts are utilized to illustrate key concepts and serve as catalysts for discussion. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4020 - Feminist Perspectives on Communication

Introduces the communication theories of major feminist theorists such as Mary Daly, Bell Hooks, and Sonia Johnson, with a focus on how their theories challenge and transform current understandings of communication. Cross-listed with COMM 5020. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max hours: 3 Credits.

Semester Hours: 3 to 3

COMM 4021 - Perspectives on Rhetoric

Introduces major theories of rhetoric from classical through contemporary times, including the theories of Aristotle, Cicero, I. A. Richards, Kenneth Burke, Michel Foucault and Jurgen Habermas. Cross-listed with COMM 5021. Term offered: fall, spring, summer. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4022 - Critical Analysis of Communication

Surveys research methods used to analyze messages from rhetorical and critical perspectives. Cross-listed with COMM 5022. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4031 - Perspectives on Communication

Overview of major theories and literature in the communication field that serve as the foundation for the study of communication. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4040 - Communication, Prisons, and Social Justice

Examines the U.S. prison-industrial complex and enables students to envision ways of reducing crime and improving democracy by engaging in community service. Note: This course fulfills the communication department's exit class requirement. Strongly Recommended: Students complete COMM 2020 or COMM 2030 prior to taking this class. Cross-listed with COMM 5040. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4051 - Advanced Strategic Communication

Provides senior-level training in hands-on communication environments where targeted messaging seeks specific outcomes. All students complete projects for community group, media outlet or corporation they choose. Students will not receive credit for this class if they have already received credit for COMM 4640. Note: This course fulfills the communication department's exit class requirement. Prereq: Students must have completed COMM 2051 or COMM 2071 or COMM 3680 with a C- or higher, or receive permission from the instructor, to enroll in this course. Cross-listed with COMM 5051. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4082 - Wilderness Communication

The primary goal of this course is to engage issues of wilderness, communication, and environmental sustainability. Students will read philosophical, theoretical, and academic literature on human symbolic constructions of wilderness. Cross-listed with COMM 5082. Term offered: summer, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4111 - Theories of Leadership

Examines research and applications related to the major theories of leadership. Emphasizes a critical reading of research confirming or denying various theories, and stresses the historical development of theories of leadership behavior and characteristics. Cross-listed with COMM 5111. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4215 - Ethics in Communication

Designed to help students identify and address the daily ethical challenges that occur in private, social, and professional contexts. Focus is on recognizing, analyzing, and resolving real-world ethical dilemmas using diverse approaches to ethical decision-making. Cross-listed with COMM 5215. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4221 - Research Methods: Qualitative

Applies qualitative research methods to human communication practices, including the processes of designing qualitative studies, collecting data, analyzing and interpreting data, and reporting results. Cross-listed with COMM 5221. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4230 - Nonverbal Communication

Studies nonverbal behaviors that accompany or replace verbal communication, including macrospace, proxemics, kinesics, facial expression, eye contact, gestures, vocal characteristics, touch and personal adornment. Cross-listed with COMM 5230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4240 - Organizational Communication

Addresses the relationships among such communication factors as flow, media, channel, diversity, information delivery and organization functioning, morale, and productivity. Stresses functional workplace skills and practices. Cross-listed with COMM 5240. Term offered: fall, spring. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4245 - Advanced Organizational Communication

Explores critical theoretical perspectives on communication in complex organizations, including issues and standpoints that have not been included in mainstream theory and research. Analyzes assumptions and pragmatic solutions associated with these theories. Cross-listed with COMM 5245. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4255 - Negotiations and Bargaining

Designed to allow students to study theories and apply concepts that explain the influences of various forms of mediating, reducing, and/or resolving conflict among individuals, groups, organizations, nations and cultures. Cross-listed with COMM 5255. Term offered: summer. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4260 - Communication and Conflict

Studies the influence of communication on intrapersonal, interpersonal, intragroup and intergroup conflict situations. Cross-listed with COMM 5260. Term offered: fall, spring, summer. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4262 - Mediation

Explores theoretical and practical aspects of mediation in a variety of contexts ranging from divorce mediation to labor-management disputes. Cross-listed with COMM 5262. Term offered: fall, spring, summer. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4265 - Gender and Communication

Examines gender as it is constructed, performed, evaluated, and negotiated through communication. Topics covered include the nature of gender, the gender binary, scientific research on gender, gender stories in popular culture, the process of crafting and performing gender stories, and responses to gender performances. Cross-listed with COMM 5265. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4268 - Communication and Diversity in U.S. History

Explores issues of diversity and community in the construction of U.S. culture. Emphasis on legal and historical texts that codify or challenge majoritarian notions of difference and systems of social control. Cross-listed with COMM 5268. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4270 - Intercultural Communication

Examines the philosophy, process, problems, and potentials unique to communication across cultural boundaries. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with COMM 5270. Term offered: fall, spring. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4280 - Communication and Change

Examines the role of communication in change processes of various kinds, including social change and diffusion of innovations. Cross-listed with COMM 5280. Prereq: COMM 2082 with a C- or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4282 - Environmental Communication

Studies the communication processes involved in policies and practices affecting natural and human environments. Cross-listed with COMM 5282. Term offered: spring. Prereq: COMM 2082 with a C- or higher permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4290 - Web Design

Covers writing web pages in HTML, beginning Photoshop, style sheets, bitmapped animations, issues of usable layout, navigability, structure, typography, and color on the web. Projects require students to develop static web sites. Cross-listed with COMM 5290. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4300 - Multimedia Authoring

Analysis and evaluation of components of multimedia development and hands-on instruction featuring computer animation for advertising, training, and educational projects. Cross-listed with COMM 5300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4430 - Communication, China, and the US

This course provides a senior-level opportunity to study how China & the USA have spoken about and to each other, from the Opium War through the Cyber Wars, thus situating this nation in a world of globalizing communication. Note: this course fulfills the communication department's exit class requirement. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with COMM 5430. Term offered: fall. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4500 - Health Communication

Examines the role of communication in a wide range of health contexts. Topics include cultural constructions of health and illness, public health communication campaigns, client-provider interactions, telemedicine, community-based health programs and medical journalism. Note: This course fulfills the communication department's exit class requirement. Cross-listed with COMM 5500. Term offered: fall, spring. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4525 - Health Communication and Community

This course provides a broad knowledge base about health disparities and culturally competent frameworks in healthcare by enabling students to engage in service learning projects with local health-related community groups. Note: this course fulfills the communication department's exit class requirement. Term offered: spring. Prereq: COMM 2020 or COMM 2030 or COMM 2050 with a C- or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4550 - Rhetorics of Medicine & Health

This senior seminar/bridge class investigates persuasion in contemporary medicine/health care from clinical settings through mass media. Case studies explore contagion, health policy, the body, death, and biopower. The course requires extensive discussion of readings and an original research project. Note: This course fulfills the communication department's exit class requirement. Cross-listed with COMM 5550. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4558 - Digital Health Narratives

This course blends readings, discussions and activities about health narratives with digital media production skills to teach students how to create compelling digital stories about health-related topics. Note: this course fulfills the communication department's exit class requirement. Cross-listed with COMM 5558. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4575 - Designing Health Messages

Examines the roles of communication in the design and impact of health messages/campaigns. We will design and assess health communication messages/campaigns in a participatory, process-oriented way using varied communication tools. Prereq: COMM 2500 with a C- or higher or instructor permission. Cross-listed with COMM 5575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4600 - Media Theory

Surveys a broad array of critical and interpretive approaches to the study of media. Approaches include political economic, semiotic, rhetorical, psychoanalytic, feminist, and cultural. Cross-listed with COMM 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4601 - You Are What You Eat: Food as Communication

Because food provides a communication channel for much of who we are as individuals, as a community and as a society this course analyzes food as a form of communication. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with COMM 5601. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Term offered: fall, spring, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4610 - Communication, Media, and Sex

Develop the tools to think critically about representations of sexuality and to understand the social construction of sexuality, the role of sexual representations in mass media and society, and the complex relationships between sexual acts, identities, and desires. Restriction: Restricted to class level Junior, Senior, or permission of instructor. Cross-listed with WGST 4610. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4611 - Rhetoric of Global Food Policy

This course examines stakeholder relations, agendas, and debates about global food policy using rhetorical concepts and analysis. Topics include the framing of debates about agriculture, hunger and obesity, the greening of food governance, sustainable food systems, and more. This course fulfills the communication department's pathway course requirement. Cross-listed with INTS 4611. Prereq: Junior standing or higher. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4620 - Health Risk Communication

Acquaints students with contemporary theory, research, and practice in health risk communication. Strongly Recommended: COMM 4500. Cross-listed with COMM 5620, ENVS 5620, and PBHL 4620. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4621 - Visual Communication

Explores the social, cultural, and behavioral effects of visual images in a variety of contexts, including graffiti, film, advertising, art and architecture. Cross-listed with COMM 5621. Prereq: COMM 1021 with a C- or higher. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4660 - Queer Media Studies

Queer Media Studies is a discussion-based, writing-intensive seminar that examines the history and development of U.S. LGBTQI media by focusing on media texts and production, sociocultural context, and media reception. Cross-listed with COMM 5660, WGST 4660, WGST 5660. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4665 - Principles of Advertising

Provides a fundamental understanding and appreciation of advertising in today's global society, including consumer motivation, buying behavior, research, creative development and media planning. Cross-listed with COMM 5665. Prereq: COMM 1021 with a C- or higher. Term offered: fall, spring, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4680 - Mass Media Law And Policy

Covers issues of mass communication and the law and ethics, including issues of the First and Fourth Amendments, communication regulations, intellectual property, public access and obscenity. Cross-listed with COMM 5680. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4681 - Communication Issues in Trial Court Practices and Processes

Introduces students to communication and language research aimed at improving the fairness, reliability, and validity of court and judicial processes, including lawyer-client interviews, interrogatories, jury selection, jury instructions, witness examination, and the use of language evidence in court. Strongly Recommended: ENGL 2030. Cross-listed with COMM 5681. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4682 - Political Communication

Examines the communication processes involved in mediated political events. Topics include the stages of the campaign process, media coverage of the political campaign process, and literacy skills needed to understand political advertising. Cross-listed with COMM 5682. Prereq: COMM 2020 or COMM 2030 with a C- or higher. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4683 - Media in the Courtroom

Critically examines the complex issues raised by media involvement in criminal court cases, including effects of pre-trial publicity, cameras in the courtroom, participants who argue their stories to the media, the CSI effect, and other phenomena relevant to media influence. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

COMM 4688 - Senior Seminar: Transitioning from College to Career

Synthesis experience for communication majors designed to prepare students to enter the job market and to integrate and reflect on their experience in communication. Must have senior standing. This course fulfills the communications department's exit course requirement. Restrictions: Restricted to students with senior standing. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4700 - Thesis and Project Practicum

Focuses on strategies of research design and writing for undergraduate students working on theses for Latin honors and for master's students seeking to complete a major research paper or thesis. Note: This course fulfills the communication department's exit class requirement. Cross-listed with COMM 6700. To be eligible to enroll in this course you must be a senior majoring in communication, have a cumulative GPA of 3.0 and have a GPA in your communication coursework of 3.5. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4710 - Topics in Communication

Special classes for faculty-directed experiences examining communication issues and problems not generally covered in the curriculum. Cross-listed with COMM 6710. Term offered: fall, spring, summer. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 3

COMM 4720 - Dynamics of Global Communication

Explores the word "global" in a communication context by analyzing the relationships between world media, international events, economics and the geopolitics of culture. This analysis is supported by the application of mass, human and cultural communication theory. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with COMM 5720. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4750 - Legal Reasoning and Writing

Introduces the fundamentals of legal reasoning and legal argumentation through intensive class discussion, formal debate and writing. Attention is given to the relationship between case and statutory law and their application in trial and appeals courts in the United States. Strongly Recommended: ENGL 1020, ENGL 2030 and any 3000 level English course. Cross-listed with COMM 5750, PSCI 4757, 5747. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4760 - New Media and Society

This course examines the relationship between new media (such as the internet and mobile phones) and society. Students will investigate the social and cultural aspects of communication

technologies. Cross-listed with COMM 5760. Prereq: COMM 1021 and COMM 2020 with a C- or higher. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: Permission of instructor. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

COMM 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

COMM 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: fall, spring, summer. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

COMM 5000 - Communication and Sport

Examines the language and imagery used in sporting discourse. Considers how sports reflect and refract culture, both positively and negatively. Cross-list COMM 4000. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5021 - Perspectives on Rhetoric

Introduces major theories of rhetoric from classical through contemporary times, including the theories of Aristotle, Cicero, I. A. Richards, Kenneth Burke, Michel Foucault and Jurgen Habermas. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4021. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5040 - Communication, Prisons, and Social Justice

Examines the U.S. prison-industrial complex and enables students to envision ways of reducing crime and improving democracy by engaging in community service. Note: This course fulfills the communication department's exit class requirement. Cross-listed with COMM 4040. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. COMM 2020 is recommended preparation for this course. Term offered: spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COMM 5051 - Advanced Strategic Communication

Provides senior-level training in hands-on communication environments where targeted messaging seeks specific outcomes. All students complete projects for community group, media outlet or corporation they choose. Students will not receive credit for this class if they have already received credit for COMM 5640. Cross-listed with COMM 4051. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COMM 5221 - Research Methods: Qualitative

Applies qualitative research methods to human communication practices, including the processes of designing qualitative studies, collecting data, analyzing and interpreting data, and reporting results. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4221. Term offered: spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COMM 5240 - Organizational Communication

Addresses the relationships among such communication factors as flow, media, channel, diversity, information delivery and organization functioning, morale, and productivity. Stresses functional workplace skills and practices. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4240. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COMM 5255 - Negotiations and Bargaining

Designed to allow students to study theories and apply concepts that explain the influences of various forms of mediating, reducing, and/or resolving conflict among individuals, groups, organizations, nations and cultures. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4255. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COMM 5260 - Communication and Conflict

Studies the influence of communication on intrapersonal, interpersonal, intragroup and intergroup conflict situations. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4260. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5265 - Gender and Communication

Examines gender as it is constructed, performed, evaluated, and negotiated through communication. Topics covered include the nature of gender, the gender binary, scientific research on gender, gender stories in popular culture, the process of crafting and performing gender stories, and responses to gender performances. Cross-listed with COMM 4265. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5270 - Intercultural Communication

Examines the philosophy, process, problems, and potentials unique to communication across cultural boundaries. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4270. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5282 - Environmental Communication

Studies the communication processes involved in policies and practices affecting natural and human environments. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4282. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5430 - Communication, China, & the US

This course provides a senior-level opportunity to study how China & the USA have spoken about and to each other, from the Opium War through the Cyber Wars, thus situating this nation in a world of globalizing communication. Note: this course fulfills the communication department's exit class requirement. This course may count for the International Studies major or minor. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. Cross-listed with COMM 4430. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5500 - Health Communication

Examines the role of communication in a wide range of health contexts. Topics include cultural constructions of health and illness, public health communication campaigns, client-provider interactions, telemedicine, community-based health programs and medical journalism.

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4500. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5550 - Rhetorics of Medicine & Health

This senior seminar/bridge class investigates persuasion in contemporary medicine/health care from clinical settings through mass media. Case studies explore contagion, health policy, the body, death, and biopower. The course requires extensive discussion of readings and an original research project. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with COMM 4550. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5558 - Digital Health Narratives

This course blends readings, discussions and activities about health narratives with digital media production skills to teach students how to create compelling digital stories about health-related topics. Cross-listed with COMM 4558. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5575 - Designing Health Messages

Examines the roles of communication in the design and impact of health messages/campaigns. We will design and assess health communication messages/campaigns in a participatory, process-oriented way using varied communication tools. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with COMM 4575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5601 - You Are What You Eat: Food as Communication

Because food provides a communication channel for much of who we are as individuals, as a community and as a society this course analyzes food as a form of communication. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. Cross-listed with COMM 4601. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5620 - Health Risk Communication

Acquaints students with contemporary theory, research, and practice in health risk communication. Restriction: Restricted to Graduate and Graduate Non-Degree majors.

Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4620, ENVS 5620, and PBHL 4620. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5621 - Visual Communication

Explores the social, cultural, and behavioral effects of visual images in a variety of contexts, including graffiti, film, advertising, art and architecture. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4621. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

COMM 5660 - Queer Media Studies

Queer Media Studies is a discussion-based, writing-intensive seminar that examines the history and development of U.S. LGBTQI media by focusing on media texts and production, sociocultural context, and media reception. Cross-listed with COMM 4660, WGST 4660, WGST 5660. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5665 - Principles of Advertising

Provides a fundamental understanding and appreciation of advertising in today's global society, including consumer motivation, buying behavior, research, creative development and media planning. Restriction: Restricted to Graduate and Graduate Non-Degree majors.

Undergraduates with senior standing may enroll with permission of instructor. Cross-listed with COMM 4665. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5682 - Political Communication

Examines the communication processes involved in mediated political events. Topics include the stages of the campaign process, media coverage of the political campaign process, and literacy skills needed to understand political advertising. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll by permission of instructor. Cross-listed with COMM 4682. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

COMM 5720 - Dynamics of Global Communication

Explores the word "global" in a communication context by analyzing the relationships between world media, international events, economics and the geopolitics of culture. This analysis is supported by the application of mass, human and cultural communication theory. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-list COMM 4720. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5760 - New Media and Society

This course examines the relationship between new media (such as the internet and mobile phones) and society. Students will investigate the social and cultural aspects of communication technologies. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll by permission of instructor. Cross-listed with COMM 4760. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Permission of instructor. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

COMM 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

COMM 5939 - Internship

Applies communication or technical communication concepts and skills in supervised employment situations. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

COMM 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: fall, spring, summer. Max hours: 15 Credits. **Semester Hours:** 1 to 15

COMM 6013 - Introduction to Graduate Work in Communication

Designed to familiarize students with the philosophical, ideological, and methodological bases of study in communication. Note: Required of all graduate students in M.A. program in

communication. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 6200 - Communication and Critical Theory

This course offers students an introduction to the intellectual history and current status of the relationship between communication and critical theory; canonical thinkers (Marx, Freud, Adorno, etc.) are coupled with contemporary communication scholars who work on questions of social justice. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 6400 - Communication, Globalization and Social Justice

This course offers students an introduction to the intersections of communication as a discipline, globalization as a world process, and social justice as a contested, ever-evolving goal of activists. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 6700 - Thesis and Project Practicum

Focuses on strategies of research design and writing for undergraduate students working on theses for Latin honors and for master's students seeking to complete a major research paper or thesis. Cross-listed with COMM 4700. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll with Permission of instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COMM 6710 - Topics in Communication

Special classes for faculty-directed experiences examining communication issues and problems not generally covered in the curriculum. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Undergraduates with senior standing may enroll by permission of instructor. Cross-listed with COMM 4710. Term offered: fall, spring. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 3

COMM 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

COMM 6960 - Master's Project

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Max hours: 3 Credits.

Semester Hours: 1 to 3

Computer Science

CSCI 1001 - Computer Forensics I

Topics covered: how to conduct a computer forensic exam; how an individual can hide data on a computer; how the investigator can find that hidden data. This course will also incorporate hands-on learning through the use of a forensic software package. (Non-CS majors) Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 1350 - Introduction to Computing in Society

This is an introductory course for individuals who would like to learn about the field of computer science, how modern computing is affecting society, and the basics of computer programming. We will explore how computing has changed society, how intertwined in our daily lives computer programs have become, and how these programs are created. We will explore these topics while learning the basics of computer programming with a modern programming language. Prereq: High School Algebra. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 1410 - Fundamentals of Computing

First course in computing for those who will take additional computer science courses. Covers the capabilities of a computer, the elements of the computer language C++, and basic techniques for solving problems using a computer. Coreq: CSCI 1411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 1411 - Fundamentals of Computing Laboratory

This laboratory is taken with CSCI 1410 and will provide students with additional help with problem solving and computer exercises to compliment the course material covered in CSCI 1410. Coreq: CSCI 1410. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CSCI 1510 - Logic Design

The design and analysis of combinational and sequential logic circuits. Topics include binary and hexadecimal number systems, Boolean algebra and Boolean function minimization, and algorithmic state machines. Lecture/lab includes experiments with computer-aided design tools. This course requires the level of mathematical maturity of students ready for Calculus I. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 1800 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

CSCI 2002 - Computer Forensics II

This is a continuation of CSCI 1001 This course will cover: computer forensics for advanced operating systems (Mac, Linux, and Unix) and mobile device forensics. This course will incorporate hands-on-learning by utilizing a computer forensics software package. (Non CS majors) Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2132 - Circuits and Electronics

This course is designed to serve as the basic course in CSE curriculum for second year bachelor students. It introduces the fundamentals of the analog and digit circuit abstraction and applications. Topics include: resistive elements, networks, sources, switches, MOS transistors, digital abstraction, amplifiers, energy storage elements. A web-based laboratory will allow students to have hands-on experiments. Prereq: MATH 2411, PHYS 2331, and CSCI 1510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2312 - Object Oriented Programming

Programming topics in the C++ language. The emphasis is on problem solving using object oriented and Generic Programming. Topics include advanced I/O, classes, inheritance, polymorphism and virtual functions, abstract base classes, exception handling, templates, and the Standard Template Library. Prereq: Grade of C- or higher in the following courses: CSCI 1410 and CSCI 1411. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2421 - Data Structures and Program Design

Topics include a first look at an algorithm, data structures, abstract data types, and basic techniques such as sorting, searching, and recursion. Programming exercises are assigned through the semester. Prereq: Grade of C- or higher in the following courses: CSCI 1410 and CSCI 1411. Coreq: CSCI 2312. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2511 - Discrete Structures

Covers the fundamentals of discrete mathematics, including: logic, sets, functions, asymptotics, mathematical reasoning, induction, combinatorics, discrete probability, relations and graphs. Emphasis on how discrete mathematics applies to computer science in general and algorithm analysis in particular. Prereq: MATH 1401 with a C- or higher (Calculus I). Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2525 - Assembly Language and Computer Organization

Topics include computer architecture, program execution at the hardware level, programming in assembly language, the assembly process, hardware support of some high-level language features, and a program's interface to the operating system. Programming exercises are assigned in this course. These exercises involve the use of specific hardware in designated laboratories. Prereq: Grade of C- or higher in the following courses: CSCI 1410, CSCI 1411 and CSCI 1510. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2571 - Fundamentals of UNIX

Introduces the UNIX operating system and its family of related utility programs. History and overview, versions, and common features. File operations, utilities, shells, editors, filters and data manipulation. Shell programming communications and networking, windowing environments, mail and Internet. Programming tools. Simple system administration. Credit will not count toward BSCSE degree. Prereq: Familiarity with operating systems and/or a programming course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2800 - Special Topics

Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2930 - Practical System Administration

Introduces students to essential system administration topics including, but not limited to, IT design and configuration methodologies, desktop support, building and configuring production level servers, network technologies and troubleshooting, security, virtualization, storage, and server operating systems. Prereq: CSCI 1410 or an equivalent introductory computer programming course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 2940 - NAND to Tetris: Foundations of Computer Systems

Introduces the principles of computer systems that underlie the global information age. Starting from first principles, students gradually construct a simple hardware platform and a modern software hierarchy, yielding a working basic yet powerful computer system. Only introductory programming experience is required. Prereq: Grade of C- or higher in the following courses: CSCI 1410 and CSCI 1411. Cross-listed with IWKS 3300. Max Hours: 3 Credits.

Semester Hours: 3 to 3

CSCI 2941 - Game Design and Development I

Introduces principles of computer game development, building on the rich interplay of computer science, graphics design, physics, music, and narrative. Students develop interactive 2D and 3D games and a final project. Substantial software development involved, but requires only introductory programming experience. Prereq: Grade of C- or higher in the following

courses: CSCI 1410 and CSCI 1411. Cross-listed with IWKS 3400. Max Hours: 3 Credits.

Semester Hours: 3 to 3

CSCI 2942 - IoT: The Internet of Things

In a world where everything is connected to everything else, how does that work? This course introduces techniques for (1) designing systems that can sense the environment and respond to humans in meaningful ways and (2) creating networks of physical objects that collect and exchange data. Such systems might include wearable sensors, interactive art, and Internet-connected home devices. Working individually and in teams, students will develop projects using Inworks' materials, devices, and fabrication tools. The course involves considerable prototyping and software development but requires only introductory programming and prototyping experience. Prereq: Grade of C- or higher in the following courses: CSCI 1410 and CSCI 1411. Cross-listed with IWKS 4120. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3287 - Database System Concepts

Introduces database design, database management systems, and the SQL standard database language. Includes data modeling techniques, conceptual database design, theory of object-relational and relational databases, relational algebra, relational calculus, normalization and database integrity. Prereq: Grade of C- or higher in the following courses: ENGL 1020, CSCI 2312 and CSCI 2421. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3320 - Advanced Programming

The course will cover a wide range of advanced programming topics via focusing on development of cross-platform applications. The focus will be on problem solving and developing applications with modern languages (such as C++, Java, Objective-C) & frameworks, including Xcode, Angularjs (with Javascript, HTML5, CSS), Phonegap, & Webstorm. Prereq: CSCI 2421. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3412 - Algorithms

Design and analysis of algorithms. Asymptotic analysis as a means of evaluating algorithm efficiency. The application of induction and other mathematical techniques for proving the correctness of an algorithm. Data structures for simplifying algorithm design, such as hash tables, heaps and search trees. Elementary graph algorithms. Assignments include written work and programming projects. Prereq: Grade of C- or higher in the following courses: CSCI 2312, 2421 and 2511. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3415 - Principles of Programming Languages

Introduces programming language design concepts and implementation issues. Includes language concepts such as control structures and data types, formal language specification techniques, and syntactic and semantic implementation issues. Prereq: Grade of C- or higher in the following courses: CSCI 2312, 2421 and CSCI 2525. Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3453 - Operating System Concepts

Covers the principles of computer operating systems and the essential components of an operating system. Topics include: I/O devices, file systems, CPU scheduling and memory management. Prereq: Grade of C- or higher in the following courses: CSCI 3412 and CSCI 2525. Restricted to Computer Science Majors, Minors and CSSC Certificate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3508 - Introduction to Software Engineering

Introduces principles and practices of software engineering: software life-cycle models, requirements engineering, analysis and design tools, human factors risk management, program certification, project management and intellectual property rights. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3511 - Hardware-Software Interface

Hardware and software techniques needed to control and program device interfaces. Input and output devices, computer peripherals, device drivers and interfaces are introduced. Specific programmable devices are used in class projects. Prereq: Grade of C- or higher in CSCI 2525. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3560 - Probability and Computing

Events and probability. Discrete random variables. Moments of random variables. Conditional probability and expectation. The probabilistic method. Markov chains and random walks. Continuous distributions and the Poisson process. Entropy, randomness and information. Randomized algorithms. Prereq: Grade of a C- or higher in CSCI 2511 and MATH 2411. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3761 - Introduction to Computer Networks

Introduction and overview of computer networks. Topics include Internet protocols, network devices, network security, and performance issues. Prereq: Grade of C- or higher in CSCI 2312

and 2421. Restriction: Restricted to Computer Science Majors, Minors and CSSC Certificate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3800 - Special Topics

Credit and subject matter to be arranged. Restriction: Restricted to Computer Science Majors and Minors. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

CSCI 3840 - Independent Study: CSCI

Restriction: Restricted to undergraduate Computer Science Majors and Minors. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

CSCI 3916 - Web API

JavaScript Web technologies for front-end development and back-end development. Building a full end to end solution with a mobile or web front-end, Web API and NoSQL database. Prereq: Grade of C- or higher in CSCI 2312 and CSCI 2421. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3920 - Advanced Programming with Java and Python

This course introduces the fundamental concepts to develop programs and projects using modern software engineering techniques using two different programming languages (Java and Python). It will cover and apply pattern design approaches, reusable components driven by everyday needs within many software developments, the relationships between object oriented programming concepts and software design concepts. It will dig deeper into techniques to program single threaded applications as well as advanced techniques to construct concurrent and distributed applications. Prereq: Grade of C- or higher in the following courses: CSCI 2312 and CSCI 2421. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 3963 - Network Structures

This interdisciplinary course examines how the technological, social and economic worlds are connected and how the study of networks sheds light on these connections. Topics include: how opinions spread through society; the robustness and fragility of financial networks; the technology and economics of Web information and on-line communities. Prereq: Grade of C- or higher in MATH 2411. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4034 - Theoretical Foundations of Computer Science

Introduces abstract models for computation, formal languages and machines. Topics include: automata theory, formal languages, grammars and Turing machines. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors, Minors and CSSC Certificate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4110 - Applied Number Theory

Every year, Topics include divisibility, prime numbers, congruences, number theoretic functions, quadratic reciprocity, special diophantine equations, cryptography, computer security, and engineering applications. Cross-listed with CSCI 5110. Prereq: Grade of C- or higher in one of the following courses: MATH 3000 or CSCI 2511. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4172 - Complexity and Problem Solving

Theoretical and practical aspects of solving complex problems, in particular, but not limited to, NP-complete and PSPACE-complete problems. Various heuristic and approximation algorithms, including greedy, ant, and Genetic Algorithms will be studied. This course is by instructor's permission only. Prereq: Grade of C- or higher in CSCI 4034. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4173 - Computational Complexity and Problem Solving

Solid, in-depth theoretical foundation in computing, computational complexity, and algorithmics. Additional topics include various algorithms for both discrete and non-discrete problem domains. Models of Computation, Computational Complexity, Time Complexity Classes, Space Complexity Classes, The Theory of NP-completeness. Prereq: Grade of C- or higher in CSCI 4034. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4202 - Introduction to Artificial Intelligence

Topics include heuristic search, games playing algorithms, application of predicate calculus to AI, introduction to planning, application of formal grammars to AI. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4211 - Mobile Computing and Programming

This course contains two main simultaneous tracks, namely mobile computing and mobile programming. A series of lectures on various aspects of mobile computing provides an understanding of challenges and solutions in design and implementing mobile systems. The main topics include mobile sensing, human mobility and its technical implication. Prereq: Grade

of C- or higher in CSCI 3453. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4287 - Embedded Systems Programming

Embedded Systems Programming happens across a spectrum of Domains. Embedded Systems Programming in the Small is characterized by the creation of small applications in high volumes. Embedded Systems Programming in the Large is characterized by the creation of medium to large applications in one-off or low volumes using specialized Operating Systems such as Real-time Operating Systems. Students will current languages, and are expected to have basic Operating Systems understanding. Prereq: Graded with C- or higher in CSCI 3453. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4408 - Applied Graph Theory

Introduces discrete structures applications of graph theory to computer science, engineering and operations research. Topics include connectivity, coloring, trees, Euler and Hamiltonian paths and circuits. Matching and covering problems, shortest route and network flows. Prereq: Grade of C- or higher in one of the following courses: MATH 3000 or CSCI 2511. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4411 - Computational Geometry

Many practical and aesthetic algorithmic problems have their roots in geometry. Applications abound in the areas of computer graphics, robotics, computer-aided design, and geographic information systems, for example. A selection of topics from convex hull, art gallery problems, ray tracing, point location, motion planning, segment intersection, Voronoi diagrams, visibility and algorithmic folding will be covered. Cross-listed with CSCI 5411. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4455 - Data Mining

Introduces concepts, techniques and methodologies to discover patterns in data. Topics include (but are not limited to) data preprocessing and cleansing, data warehousing, pattern mining, classification, prediction, cluster analysis, outlier detection, and online data analytics. Prereq: Grade of C- or higher in the following courses: MATH 3195 (or both MATH 3191 and MATH 3200), CSCI 3287 and CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5455. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4501 - Java

Comprehensive course on Java programming. Coverage of programming language constructs of Java and the core libraries that come with Java: coverage of advanced topics, including technologies for building distributed applications, and interacting with a database. Prereq: Grade of C- or higher in CSCI 2312 and CSCI 2421. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4551 - Parallel & Distributed Systems

Examines a range of topics involving parallel and distributed systems to improve computational performance. Topics include parallel and distributed programming languages, architectures, networks, algorithms and applications. Prereq: Grade of C- or higher in Math 3195 (or both MATH 3191 and MATH 3200), CSCI 3415 & CSCI 3453. Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5551. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4555 - Compiler Design

Introduces the basic techniques used in translating programming languages: scanning, parsing, symbol table management, code generation, code optimization and error recovery. Prereq: Grade of C- or higher in CSCI 3412 and CSCI 3415. Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4565 - Introduction to Computer Graphics

Introduces two and three dimensional computer graphics. Topics include scan conversion, geometric primitives, transformation, viewing, basic rendering, and illumination. Emphasis is on programming using "C" and "C++" Open GL. Pre-req: Grade of C- or higher in CSCI 3412 and (MATH 3191 or MATH 3195). Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5565. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4580 - Data Science

Introduces concepts and techniques that enable data cycle from data extraction to knowledge discovery, including but not limited to data exploration, hypotheses testing, data organization, data featurization, supervised and unsupervised data modeling and learning, scaling-up analytics, and data visualization. Prereq: Grade of C- or higher in MATH 3195 (or both MATH 3191 and MATH 3200), CSCI 3287 and CSCI 3412. Restricted to Computer Science Majors & Minors. Cross-listed with CSCI 5580. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4591 - Computer Architecture

Deals with how assembly language maps to hardware, and basic hardware techniques implemented in computers. Topics include logic design of arithmetic units, data control path processor logic, pipelining, memory systems, and input-output units. The emphasis is on logic structure rather than electronic circuitry. Students must know basic control logic design and be

familiar with an assembly language before taking this course. Prereq: Grade of C- or higher in CSCI 2525. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4630 - Linguistic Geometry

Linguistic Geometry (LG) is a type of Game Theory in Artificial Intelligence, which permits to overcome combinatorial explosion and generate optimal strategies in real time. LG is currently changing the paradigm of military command and control in the USA and abroad. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5619. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4640 - Universal Compiler: Theory and Construction

Theoretical foundations and step-by-step hands-on experience in the development of a compiler, which can tune itself to a new programming language. This is a must-take course for future software developers as well as those interested in applications of the theory of Computer Science. Cross-listed with CSCI 5640. Prereq: Grade of C- or higher in CSCI 3453. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4650 - Numerical Analysis I

Methods and analysis of techniques used to resolve continuous mathematical problems on the computer. Solution of linear and nonlinear equations, interpolation and integration. Cross-listed with CSCI 5660, MATH 4650, and MATH 5660. Prereq: MATH 2411, MATH 3191 or MATH 3195, and programming experience. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4660 - Numerical Analysis II

Numerical differentiation and integration, numerical solution of ordinary differential equations, and numerical solutions of partial differential equations as time allows. Prereq: Grade of C- or higher in MATH 3195 (or both MATH 3191 and MATH 3200), MATH or CSCI 4650 or 5660 and programming experience. Restriction: Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5661, MATH 4660 and 5661. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4738 - Senior Design I

This is an advanced practical course in which students design, implement, and document and test software systems for use in industry, non-profits, government and research institutions. The course offers practical experience by working closely with project sponsors. It also offers extensive experience in oral and written communication throughout the software life cycle. Prereq: Grade of C- or higher in CSCI 3287, CSCI 3415, CSCI 3453, and CSCI 3508. Restriction:

Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4739 - Senior Design II

This course is a continuation of Senior Design I. Students must have taken Senior Design I in order to enroll for Senior Design II. In this course, the projects begun in Senior Design I are completed and presented. Prereq: CSCI 4738. Restricted to undergraduate Computer Science Majors and Minors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4740 - Computer Security

Introduces basic knowledge from the computer security area. Concepts and techniques of cryptography, including history of codes and ciphers, basic cryptography techniques like data encryption standards, public key systems and digital signatures. Prereq: Grade of C- or higher in MATH 1120. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4741 - Principles of Cybersecurity

Focuses on the most common threats to cybersecurity as well as ways to prevent security breaches or information loss. Topics will include: understanding and thwarting hacker methods, authentication, cryptography, programming security, malware analysis, web, database and file server security, network and enterprise security methods. Prereq: Grade of C- or higher in CSCI 3412 and CSCI 3287. Restriction: Restricted to Computer Science Majors, Minors and CSSC Certificate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4742 - Cybersecurity Programming and Analysis

Focuses on cybersecurity related programming and analysis skills. Topics include: network and security application development, intrusion detection, automating security hardening. Students will design and develop security applications in multiple programming languages. Undergraduate algorithms and programming knowledge expected. Pre-Req: CSCI 3415. Restricted to undergraduate Computer Science Majors and Minors. Cross-listed with CSCI 5742. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4743 - Cyber and Infrastructure Defense

Presents analytical study of state-of-the-art attack and defense paradigms in cyber systems and infrastructures. Analysis will focus on: theoretical foundations of cybersecurity, practical development of novel technical defense techniques and analysis of alternatives. Knowledge of undergraduate-level networking. Cross-listed with CSCI 5743. Prereq: Grade of C- or higher in CSCI 3761. Restriction: Restricted to Computer Science Majors, Minors and CSSC Certificate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4771 - Introduction to Mobile Computing

Provides an in-depth understanding of the fundamentals in mobile computing and studies the existing and proposed solutions for ubiquitous computing. This course focuses on systems and networking issues involved with supporting mobility. Prereq: Grade of C- or higher in CSCI 3453 and CSCI 3761. Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5771. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4788 - Bioinformatics

Provides a broad exposure to the basic concepts and methodologies of bioinformatics and their application to analyzing genomic and proteomic data. Topics may include dynamic programming algorithms, graph theoretic techniques, hidden Markov models, phylogenetic trees, RNA/protein structure prediction and microarray analysis. Cross-listed with MATH 4788, PHYS 4788. Prereq: Grade of C- or higher in CSCI 1410, CSCI 1411 and MATH 3195 or 3191. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4800 - Special Topics

Credit and subject matter to be arranged. Restriction: Restricted to Computer Science Majors and Minors. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

CSCI 4840 - Independent Study

Restricted to undergraduate Computer Science Majors and Minors with senior standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

CSCI 4910 - User Experience Design

A how-to course for any technologist who has endured difficult interfaces and wants to design effective user interfaces that respect and advance the user experience. Course includes: Psychology, HCI personas, scenarios, prototyping, and evaluation for desktop and mobile applications. Prereq: Grade of C- or higher in CSCI 2312 and CSCI 2421. Restricted: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4920 - Computer Game Design and Programming

Computer Game Design and Programming introduces practical and example driven approaches to modern 3D game development. Topics include 3D modeling, character animation, UI design, scripting, texture mapping, and sound effect. Prereq: Grade of C- or higher in CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4930 - Machine Learning

Provides theoretical and computational foundations in machine learning to design and develop intelligent applications to perform object recognition, personalized recommendations, improve cybersecurity, fact-checking, forecasting and finding communities based on three classes of algorithms: supervised, unsupervised, semi-supervised and reinforcement learning. Prereq: Grade of C- or higher in the following courses: MATH 3195 (or both MATH 3191 and MATH 3200) & CSCI 3412. Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5930. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4930 - Machine Learning

Provides theoretical and computational foundations in machine learning to design and develop intelligent applications to perform object recognition, personalized recommendations, improve cybersecurity, fact-checking, forecasting and finding communities based on three classes of algorithms: supervised, unsupervised, semi-supervised and reinforcement learning. Prereq: Grade of C- or higher in the following courses: MATH 3195 (or both MATH 3191 and MATH 3200) & CSCI 3412. Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5930. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4931 - Deep Learning

Provides a foundation on deep learning; a sought-after skill in machine learning. Topics include neural network design & learning, restricted Boltzmann machine, convolution neural network, recurrent neural network, LSTMs, deep reinforcement learning, autoencoders, and evolving computation frameworks like TensorFlow, Keras. Prereq: Grade of C- or higher in MATH 3195 (or both MATH 3191 and MATH 3200) and CSCI 3412. Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5931. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 4939 - Internship

Faculty or employer-supervised employment in industry. Enrollment is limited to students who fully completed a contract for cooperative education credit by the last day of the drop or add period. Prereq: Grade of C- or higher in CSCI 3415. Restriction: Restricted to Computer Science Majors and Minors. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

CSCI 4951 - Big Data Systems

Presents a practical while in-depth review of the principles of a series of modern data processing systems (e.g., Hadoop, Spark, TensorFlow) designed to address the Big Data challenges. In combination, these systems enable the data to knowledge (Big) data lifecycle. Prereq: Grade of C- or higher in MATH 3195 (or MATH 3191 and MATH 3200), CSCI 3287 and CSCI 3412. Restriction: Restricted to Computer Science Majors and Minors. Cross-listed with CSCI 5951. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5010 - Software Architecture

This course will focus on two major areas. The first part of the course will cover Software Requirements Analysis and Development as well as Software Architecture and the Soft Skills needed by high level Software Architects. The second part of the course will cover how Persistent Data fits into different types of Software Systems. The primary focus of the second part of the course will be on incorporating larger scale Enterprise Data Systems into Software Systems and will be an application of the first part of the course material. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5011 - Software Project Management Support

Large Software Systems must be Planned, Scheduled, and Staffed. To accomplish these tasks Software Engineers must understand the Software Architecture, the Software System Dependencies, Effort Estimation and the various Project Development Models that might be used. This course will look at different Project Models, Project Management Needs, and various Effort Estimation tools and techniques. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5098 - Computer Science for Bioscientists

Provides a broad but detailed overview of the computer science field to graduate students in the biosciences, with emphasis on web technologies, programming languages, algorithms and database systems. No credit for CS graduate students. Prereq: Working knowledge of programming language (e.g., Java). Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5110 - Applied Number Theory

Every year, Topics include divisibility, prime numbers, congruences, number theoretic functions, quadratic reciprocity, special diophantine equations, cryptography, computer security, and engineering applications. Cross-listed with CSCI 4110. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5172 - Complexity and Problem Solving

Theoretical and practical aspects of solving complex problems, in particular, but not limited to, NP-complete and PSPACE-complete problems. Various heuristic and approximation algorithms, including greedy, ant, and Genetic Algorithms will be studied. This course is by instructor's permission only. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5211 - Mobile Computing and Programming

This course contains two main simultaneous tracks, namely mobile computing and mobile programming. A series of lectures on various aspects of mobile computing provides an understanding of challenges and solutions in design and implementing mobile systems. The main topics include mobile sensing, human mobility and its technical implication. Students are expected to have undergraduate knowledge of operating systems and computer networks. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5217 - Information Theory

Introduces information theory and its application in computer science, communication theory, coding and applied mathematics. Entropy, mutual information, data compression and storage, channel capacity, rate distortion, hypothesis testing. Error detecting and correcting codes, block codes and sequential codes. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5255 - Object Oriented Design

Software system design using object-oriented techniques, responsibility driven design and agile development practices. Topics include objects, classes, interfaces, inheritance, polymorphism, exception handling and testing. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5407 - Security & Cryptography

A broad overview of cryptography and its relation to computer security. Topics include basic standard cryptographic techniques, a history of codes and ciphers, RSA, DES, AES, Elliptic Curve Cryptography, ElGammal, and applications to current and future technologies. Restriction: Restricted to Graduate Standing. Cross-listed with CSCI 7407. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5408 - Applied Graph Theory

Introduces discrete structures applications of graph theory to computer science, engineering and operations research. Topics include connectivity, coloring, trees, Euler and Hamiltonian paths and circuits. Matching and covering problems, shortest route and network flows. Restriction: Restricted to students with graduate standing. Note: Expected knowledge of abstract mathematics including discrete structures. Cross-listed with MATH 4408. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5409 - Graph Theory and Graph Algorithms

Studies geometric graphs and other geometric objects, both analysis and algorithmic construction, leads to interesting connections among VLSI design, graph theory and graph

algorithms. Studies a subset of the recent literature, with special emphasis on visibility graphs, thickness of graphs, graph coloring and the surprising and elegant connections among them all. Other topics are introduced as time permits. Prereq: CSCI 5408. Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5411 - Computational Geometry

Many practical and aesthetic algorithmic problems have their roots in geometry. Applications abound in the areas of computer graphics, robotics, computer-aided design, and geographic information systems, for example. A selection of topics from convex hull, art gallery problems, ray tracing, point location, motion planning, segment intersection, Voronoi diagrams, visibility and algorithmic folding will be covered. Cross-listed with CSCI 4411. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5446 - Theory of Automata

Studies the relationships between classes of formal languages (regular, context-free, context-sensitive, phrase-structure) and classes of automata (finite-state, pushdown, Turing machines). Additional topics include decidability and computability issues. Restriction: Restricted to students with graduate standing. Note: Expected knowledge of algorithms equivalent to CSCI 3412. Cross-listed with MATH 5446. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5451 - Algorithms

Advanced design and analysis techniques: dynamic programming, greedy algorithms, amortized analysis. Advanced data structures: Fibonacci heaps, union-find data structures. Study of variety of special topics, which may include: graph algorithms, optimization problems, Fast Fourier Transform, string matching, geometric algorithms, NP-completeness and approximation algorithms. Restriction: Restricted to students with graduate standing. Note: Expected knowledge of algorithms equivalent to CSCI 3412. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5455 - Data Mining

Introduces concepts, techniques and methodologies to discover patterns in data. Topics include (but are not limited to) data preprocessing and cleansing, data warehousing, pattern mining, classification, prediction, cluster analysis, outlier detection, and online data analytics. Restriction: Graduate Standing. Cross-listed with CSCI 4455. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5542 - Neural Networks

Parallel distributed representations, dynamics of Hopfield-style networks, content addressable memories, and Hebbian learning are the major topics of the first half. The last half consists of

simulated annealing back propagation, competitive learning, and self-organizing networks. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CSCI 5551 - Parallel and Distributed Systems

Examines a range of topics involving parallel and distributed systems to improve computational performance. Topics include parallel and distributed programming languages, architectures, networks, algorithms and applications. Prereq: Graduate standing. Cross-listed with CSCI 4551 and 7551. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CSCI 5552 - Advanced Topics in Parallel Processing

Examines the advances of sequential computers for gaining speed and application of these techniques to high-speed supercomputers of today. Programming methodologies of distributed and shared memory multiprocessors, vector processors and systolic arrays are compared. Performance analysis methods for architectures and programs are described. Cross-listed with CSCI 7552. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CSCI 5559 - Database Systems

Introduces database system concepts, with examination of relational database systems from conceptual design through relational schema design and physical implementation. Topics include database design and implementation for large database systems, transaction management, concurrency control, object-oriented and distributed database management systems. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CSCI 5565 - Introduction to Computer Graphics

Introduces two and three dimensional computer graphics. Topics include scan conversion, geometric primitives, transformation, viewing, basic rendering, and illumination. Emphasis is on the programming using C and C++ Open GL. Cross-listed with CSCI 4565. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours: 3 to 3**

CSCI 5573 - Operating Systems

Students study the principles of computer operating systems and their essential components. Team projects expose students to a variety of system design issues as they relate to the functionality and performance of the system. Topics include I/O devices, Disk Scheduling, File System Organizations, Directory Systems, Sequential and Concurrent process, CPU Scheduling, Memory Management, Deadlock, Process and Threading, and review of some related articles in

the literature. Prereq: Expected knowledge of operating systems equivalent to CSCI 3453. Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5574 - Advanced Topics in Operating Systems

Covers the advanced topics in operating systems by examining functionality and performance issues in CPU Scheduling, communications, distributed file systems, distributed operating systems, shared-memory multiprocessors and real-time operating systems. In addition to studying papers, reviews and presentations, students carry out a semester long team project within the scope of one of the above topics. Cross-listed with CSCI 7574. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5575 - Cyber-Physical Systems

Cyber-physical systems (CPS) bridge the cyber-world of computing, communication and control with the physical world. This course offers an interdisciplinary perspective of CPS within computer science and its applications to understand the issues in the full lifecycle of CPS. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5580 - Data Science

Introduces concepts and techniques that enable data cycle from data extraction to knowledge discovery, including but not limited to data exploration, hypotheses testing, data organization, data featurization, supervised and unsupervised data modeling and learning, scaling-up analytics, and data visualization. Restriction: Graduate Standing. Cross-listed with CSCI 4580. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5582 - Artificial Intelligence

Approaches to design of systems for solving problems usually solved by humans, especially those related to intelligent decision making. Emphasis on various types of knowledge representation. Restriction: Restricted to students with graduate standing. Cross-listed with CSCI 7582. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5585 - Advanced Computer Graphics

An in-depth study of active research topics in computer graphics. Topics include advanced rendering, global illumination, scientific visualization, geometric modeling, simulation and animation. Emphasis is on readings from literature and on a term project. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5593 - Advanced Computer Architecture

Important concepts in the structural design of computer systems are covered. Topics include memory hierarchy, super pipelining and super scalar techniques, dynamic execution, vector computers and multiprocessors. Expected knowledge of Computer Architecture equivalent to CSCI 4591. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits.

Semester Hours: 3 to 3

CSCI 5595 - Computer Animation

This course introduces the state of the art techniques for modern computer animation focused on a practical, example driven approach to learning the unique art of 3D animation. Topics include modeling, kinematics, rigging, textures, physically based dynamics, and rendering.

Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5610 - Computational Biology

Designed to introduce a broad range of computational problems in molecular biology. Solution techniques draw from several branches of mathematics: combinatorics, probability, optimization, and dynamical systems. No prior knowledge of biology is critical, but it would be at least helpful to have the equivalent of BIOL 5099. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5619 - Complex Intelligent Systems

Presents the cutting-edge results of research in AI: advanced topics in linguistic geometry. LG is an approach to construction of mathematical models for reasoning about large-scale multi-agent concurrent games. The purpose of LG is to provide strategies to guide the participants of a game to reach their goals. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5630 - Linguistic Geometry

Linguistic Geometry (LG) is a type of Game Theory in Artificial Intelligence, which permits to overcome combinatorial explosion and generate optimal strategies in real time. LG is currently changing the paradigm of military command and control in the USA and abroad. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5640 - Universal Compiler: Theory and Construction

Theoretical foundations and step-by-step hands-on experience in the development of a compiler, which can tune itself to a new programming language. This is a must-take course for future software developers as well as those interested in applications of the theory of Computer Science. Cross-listed with CSCI 4640. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5654 - Algorithms for Communication Networks

Algorithmic and mathematical underpinnings of communication networks. A taxonomy of data-packet networks depending on modes of communication: fixed-interconnection networks, radio networks and multiple-access channel. Algorithms to implement packet routing and broadcasting. Cross-listed with CSCI 7654. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5660 - Numerical Analysis I

Methods and analysis of techniques used to resolve continuous mathematical problems on the computer. Solution of linear and nonlinear equations, interpolation and integration. Prereq: MATH 2411, MATH 3191 or MATH 3195, and programming experience. Cross-listed with CSCI 4650, MATH 4650, and MATH 5660. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5661 - Numerical Analysis II

Numerical differentiation and integration, numerical solution of ordinary differential equations, and numerical solutions of partial differential equations as time allows. Cross-listed with CSCI 4660, MATH 4660 and 5661. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5667 - Introduction to Approximation Theory

Normed linear spaces, convexity, existence and uniqueness of best approximations. Tchebychev approximation by polynomials and other related families. Least squares approximation and splines. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5682 - Expert Systems

Reviews and analyzes many expert systems documented in the literature, such as Mycin, Macsyma, and Xcon. Emphasis is given to the design of rule-based systems, the use of uncertain and incomplete information and system shells. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5690 - Knowledge Representation for Intelligent Systems

An in-depth study of different types of knowledge representation in artificial intelligence for the efficient control of complex real-world systems like autonomous robots, space vehicles, and military units. Major emphasis is on search algorithms and heuristics, logical representation with applications to planning, formal linguistic representation. At the conclusion, all the theories studied are combined in the form of introduction to the state-of-the-art linguistic

geometrical representation of complex control systems. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5701 - High-Performance Communication Systems and Network Analysis

Protocols and architectures related to high performance communication systems as well as network performance analysis techniques are covered. Topics include Integrated Services Digital Networks (ISDN), Broadband ISDN, protocols such as ATM and SONET, and high performance network architectures such as optical networks. Analytical analysis of network performance includes queuing theory and stochastic processes. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5702 - Big Data Mining

Introduces techniques to discover patterns in Big Data. Selected topics: time-series analysis at scale, big graph mining, big scientific data mining, and spatiotemporal data mining, with applications in precision medicine, social network analysis, transportation, scientific data analysis, and geospatial analytics. Cross-listed with CSCI 7702. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5704 - Introduction to Distributed Systems

Studies design, implementation and management of distributed systems, including communication issues, security reliability, resource sharing, and remote execution. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5728 - Software Engineering

Groups of students plan, analyze and design large software projects. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5741 - Principles of Cybersecurity

Focuses on the most common threats to cybersecurity as well as ways to prevent security breaches or information loss. Topics will include: understanding and thwarting hacker methods, authentication, cryptography, programming security, malware analysis, web, database and file server security, network and enterprise security methods. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5742 - Cybersecurity Programming and Analysis

Focuses on cybersecurity related programming and analysis skills. Topics include: network and security application development, intrusion detection, automating security hardening. Students will design and develop security applications in multiple programming languages.

Undergraduate algorithms and programming knowledge expected. Cross-listed with CSCI 4742. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5743 - Cyber and Infrastructure Defense

Presents analytical study of state-of-the-art attack and defense paradigms in cyber systems and infrastructures. Analysis will focus on: theoretical foundations of cybersecurity, practical development of novel technical defense techniques and analysis of alternatives. Knowledge of undergraduate-level networking. Restriction: Restricted to students with graduate standing. Cross-listed with CSCI 4743. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5765 - Computer Networks

An in-depth study of active research topics in computer networks. Topics include: Internet protocols, TCP/UDP, congestion and flow control, IP routings, mobile IP, P2P overlay networks, network security, performance, and other current research topics. Prereq: Graduate standing. Cross-listed with CSCI 7765. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5771 - Introduction to Mobile Computing

Provides the fundamentals of mobile computing. Studies existing and proposed solutions for ubiquitous computing. This course focuses on systems and networking issues involved with supporting mobility. Cross-listed with CSCI 4771. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5772 - Mobile and IoT Security

This course concentrates on the computing of emerging mobile and IoT systems security in the Computer Science domain. The seminar will discuss recent research on computing for mobile user authentication, vulnerability risk detection of mobile/IoT systems, and software based defense mechanism. Restriction: Restricted to graduate school standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5780 - Theory of Distributed Computing

Elements of the theory of distributed computing through fundamental algorithmic ideas, lower bound techniques, and impossibility results. Timing assumptions (asynchrony and synchrony), simulations between models (message passing and shared memory), failure types (crash and Byzantine). Restriction: Restricted to students with graduate standing. Note: Expected knowledge of algorithms equivalent to CSCI 3412. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5799 - Cloud Computing

This course studies fundamental designs and key technologies in Cloud Computing by reading technical articles, and conducting a semester group project. Topics include cloud computing design and architectures, service models, virtualization, advanced computer networks, programming, often software, and security. Note: Operating System, Computer Networks, and programming experience are recommended for success in this course. Prereq: Graduate standing. Cross-listed with CSCI 7799. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5800 - Special Topics

These special topics courses cover recent developments in an aspect of computer science. Restriction: Restricted to students with graduate standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

CSCI 5840 - Independent Study

For graduate computer science students. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 3

CSCI 5866 - Advanced Mobile and Ubiquitous Systems

This course covers various aspects of mobile and ubiquitous systems to provide an in-depth understanding of principles, state-of-the-art solutions and challenges in design and implementation of such systems. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5920 - Computer Game Design and Programming

Computer Game Design and Programming introduces practical and example driven approaches to modern 3D game development. Topics include 3D modeling, character animation, UI design, level design, scripting, texture mapping, and sound effect. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5930 - Machine Learning

Provides theoretical and computational foundations in machine learning to design and develop intelligent applications to perform object recognition, personalized recommendations, improve cybersecurity, fact-checking, forecasting and finding communities based on three classes of algorithms: supervised, unsupervised, semi-supervised and reinforcement learning. Restriction: Graduate Standing. Cross-listed with CSCI 4930. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5931 - Deep Learning

Provides a foundation on deep learning; a sought-after skill in machine learning. Topics include neural network design & learning, restricted Boltzmann machine, convolution neural network,

recurrent neural network, LSTMs, deep reinforcement learning, autoencoders, and evolving computation frameworks like TensorFlow, Keras. Restriction: Graduate Standing. Cross-listed with CSCI 4931. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5939 - Internship

Faculty or employer-supervised employment in industry. Enrollment is limited to students who fully complete a contract for cooperative education credit by the last day of the drop or add period. Students who want to enroll this course should submit an official job description that must clearly show the level of work requires a bachelor's degree in the computer science field or equivalent work experience. This course will not be counted towards either MScS or PhD in CSIS or EAS. Prereq: Complete at least two of category A courses (for MS) or complete Preliminary exam (for PhD) and 3.0 or better GPA. Restricted to students with a minimum of 1 full academic year of study at the graduate level. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

CSCI 5941 - Directed Study: Programming Project

Software development project supervised by a faculty member approved by the Center for Computational Biology. Used towards a certificate in Computational Biology. Counts as an independent study. Prereq: CSCI 5451 and CSCI 5610. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5951 - Big Data Systems

Presents a practical while in-depth review of the principles of a series of modern data processing systems (e.g., Hadoop, Spark, TensorFlow) designed to address the Big Data challenges. In combination, these systems enable the data to knowledge (Big) data lifecycle. Restriction: Restricted to Graduate standing. Cross-listed with CSCI 5951. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 5952 - Big Data Science

Introduces methodologies that enable Big Data lifecycle. Selected topics: topic modeling, causality analysis, structure learning, learning with less supervision, and massive-scale data analytics, with applications in social media analysis, computational biology, climate modeling, health care, and traffic monitoring. Restriction: Graduate standing. Cross-listed with CSCI 7952. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6010 - Principles of Programming

This course introduces students to fundamental principles and techniques in the design and implementation of modern programming such as C++, Java. Students learn how to write programs in an object oriented high level programming language. Weekly laboratory

assignments will provide hands-on experience in this course. (non-CS majors) Prereq: meet MAPS requirements and familiarity with computer use. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6020 - Data Structures and Algorithms

This course introduces students to fundamental skills in computer science such as data structures and computer algorithms. Students will learn how to design efficient algorithms and analyze them. (non-CS majors) Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6030 - Computer Systems & Application

This course surveys essential technologies such operating systems, database systems, and the Internet. Students study the basic of operating systems, database systems, and the Internet. Weekly laboratory experiments will provide hands-on experience. (non-CS majors) Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6040 - Teaching Practice of Computer Science

This course provides students the opportunity for practicing and developing courses for adolescents using previously acquired knowledge. Students will design and develop a computer science class of their interest and appropriate to their area of expertise which they will offer at their school. (non-CS majors) Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6595 - Computational Methods in Nonlinear Programming

Introduces fundamental algorithms and theory for nonlinear optimization problems. Topics include Newton, quasi-Newton and conjugate directional methods; line search and trust-region methods; active set, penalty and barrier methods for constrained optimization; convergence analysis and duality theory. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6664 - Numerical Linear Algebra

Offered every other year. Solution of linear equations, eigenvector and eigenvalue calculation, matrix error analysis, orthogonal transformation, iterative methods. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 6950 - Master's Thesis

Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 9

CSCI 6960 - Master's Report

Students seeking a Master of Science in computer science, who do not choose to do a thesis, must complete an individual project of an investigative and creative nature under supervision of a full-time CS graduate faculty. Student must present their results to a faculty committee. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7002 - Computer Security

A broad overview of computer security, roughly divided into three unequal components: a) the history of codes and ciphers; b) basic cryptographic techniques, for example, symmetric cryptography, authentication techniques, and asymmetric crypto systems, and: c) applications to current and future computer-related technologies, for example, network security, wireless communication, quantum cryptography, and more. Prereq: CSCI 5451. Cross-listed with ISMG 7002. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7173 - Computational Complexity and Algorithms

A solid, in-depth theoretical foundations in computing, computational complexity, and algorithmics. Various algorithms, including both discrete and non-discrete problem domains. NP-complete and other complete classes of problems/languages. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7200 - Advances in Management Information Systems

Provides a broad coverage of research on the management of information technology. The course covers the systems-oriented research, organizational-oriented research, and information systems economics research. Prereq: PhD standing. Cross-listed with ISMG 7200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7210 - Topics in Analytical Research in Management Information Systems

Covers a variety of analytical research topics of interest to the IS research community including the evaluation of data mining algorithm performance, cost sensitive learning and outlier detection. Prereq: Admission to the CSIS PhD program. Cross-listed with ISMG 7210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7211 - Topics in Behavioral-Organizational Research in Management Information Systems

Provides in-depth exposure to some key behavioral, management and organizational theories and models used in Information Systems research. Covers topics in socio-technical, trust, computer self-efficacy, organizational transformation, organizational learning, resource-based and coordination theories. Prereq: Admission to the CSIS PhD program. Cross-listed with ISMG 7211. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7407 - Security & Cryptography

A broad overview of cryptography and its relation to computer security. Topics include basic standard cryptographic techniques, a history of codes and ciphers, RSA, DES, AES, Elliptic Curve Cryptography, ElGammal, and applications to current and future technologies. Restriction: Restricted to Graduate Standing. Cross-listed with CSCI 5407. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7502 - Research Methods

Promotes research skills. Involves presenting a research topic and discussions of its merits, reviewing journal articles, writing a paper and/or a proposal in the NIH/NSF format in the student's area of research. Prereq: PhD student standing or permission of instructor for MS students who are writing a thesis. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7551 - Parallel and Distributed Systems

Examines a range of topics involving parallel and distributed systems to improve computational performance. Topics include parallel and distributed programming languages, architectures, networks, algorithms and applications. Prereq: Graduate standing. Cross-listed with CSCI 5551. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7552 - Advanced Topics in Parallel Processing

Examines the advances of sequential computers for gaining speed and application of these techniques to high-speed supercomputers of today. Programming methodologies of distributed and shared memory multiprocessors, vector processors and systolic arrays are compared. Performance analysis methods for architectures and programs are described. Cross-listed with CSCI 5552. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7574 - Advanced Topics in Operating Systems

Covers the advanced topics in operating systems by examining functionality and performance issues in CPU Scheduling, communications, distributed file systems, distributed operating systems, shared-memory multiprocessors and real-time operating systems. In addition to studying papers, reviews and presentations, students carry out a semester long team project within the scope of one of the above topics. Cross-listed with CSCI 5574. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7582 - Artificial Intelligence

Approaches to design of systems for solving problems usually solved by humans, especially those related to intelligent decision making. Emphasis on various types of knowledge

representation. Cross-listed with CSCI 5582. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7595 - Computer Animation

This course introduces the state of the art techniques for modern computer animation focused on a practical, example driven approach to learning the unique art of 3D animation. Topics include modeling, kinematics, rigging, textures, physically based dynamics, and rendering. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7654 - Algorithms for Communication Networks

Algorithmic and mathematical underpinnings of communication networks. A taxonomy of data-packet networks depending on modes of communication: fixed-interconnection networks, radio networks and multiple-access channel. Algorithms to implement packet routing and broadcasting. Cross-listed with CSCI 5654. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7702 - Big Data Mining

Introduces techniques to discover patterns in Big Data. Selected topics: time-series analysis at scale, big graph mining, big scientific data mining, and spatiotemporal data mining, with applications in precision medicine, social network analysis, transportation, scientific data analysis, and geospatial analytics. Cross-listed with CSCI 5702. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7711 - Bioinformatics I

(BIOL 7711-Offered on a semester basis from H.S.C.) What is Bioinformatics and why study it? How is large-scale molecular biology data generated, where and how can researchers gain access to it, what computational analyses are possible and computational techniques for solving inference problems in molecular biology? Prereq: Permission of instructor. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CSCI 7712 - Bioinformatics II

(BIOL 7712-offered on a semester basis from H.S.C.) Inference problems and computational techniques for molecular biology, with emphasis on machine learning approaches. Use of computational induction techniques focused on information extraction from biomedical literature, inference of biochemical networks from high-throughput data and prediction of protein function. Estimation, clustering, discrimination and regression. Prereq: CSCI 7711. Max hours: 4 Credits. **Semester Hours:** 4 to 4

CSCI 7765 - Computer Networks

An in-depth study of active research topics in computer networks. Topics include: Internet protocols, TCP/UDP, congestion and flow control, IP routings, mobile IP, P2P overlay networks, network security, performance, and other current research topics. Prereq: Graduate standing. Cross-listed with CSCI 5765. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7799 - Cloud Computing

This course studies fundamental designs and key technologies in Cloud Computing by reading technical articles, and conducting a semester group project. Topics include cloud computing design and architectures, service models, virtualization, advanced computer networks, programming, often software, and security. Note: Operating System, Computer Networks, and programming experience are recommended for success in this course. Prereq: Graduate standing. Cross-listed with CSCI 5799. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7800 - Special Topics

These special topics courses cover recent developments in an aspect of computer science. Prereq: As determined by instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7840 - Independent Study

Offers doctoral students opportunity for independent, creative work under supervision of a CSE full-time graduate faculty. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CSCI 7866 - Advanced Mobile and Ubiquitous Systems

This course covers various aspects of mobile and ubiquitous systems to provide an in-depth understanding of principles, state-of-the-art solutions and challenges in design and implementation of such systems. Restriction: Restricted to students with graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 7952 - Big Data Science

Introduces methodologies that enable Big Data lifecycle. Selected topics: topic modeling, causality analysis, structure learning, learning with less supervision, and massive-scale data analytics, with applications in social media analysis, computational biology, climate modeling, health care, and traffic monitoring. Restriction: Graduate standing. Cross-listed with CSCI 5952. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CSCI 8990 - Doctoral Dissertation

Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 9

Construction Engr and Mgmt

CEMT 1000 - Introduction to Construction Management

Course provides an introduction to the construction industry and project management. Student will learn basic CM terminology, roles and responsibilities associated with a construction project, and construction documents. Max hours: 1 Credits. **Semester Hours:** 1 to 1

CEMT 2100 - Construction Management Fundamentals

Course provides an overview of the construction industry. Students will learn about construction project management from pre-design through commissioning. Students will explore plan reading, planning, scheduling, quantity take off and estimating methodologies, and project delivery methods. Oral and written construction communication will be incorporated within assignments. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 2300 - Heavy Civil Construction and Equipment

Course includes an introduction to heavy civil construction equipment, materials, labor and methods. Students will learn to perform comparative cost analysis for owning and operating heavy equipment; and perform the proper selection, applications, utilization and productivity of heavy equipment with the associated labor and logistics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 3100 - Field Engineering and Management

se includes an overview of field engineering and management. Students will assess basic design of temporary structures, quality assurance and quality control, and materials testing and processing. Students will learn the fundamentals of soils engineering. Students will be able to apply surveying concepts and generate site layout. Students will learn the basics of safety, accident prevention, risk management, and regulatory compliance on construction sites. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4067 - Construction Senior Capstone

Students will work in teams to formulate or design a construction project requiring the synthesis of material learned in previous courses. The student teams will establish goals, plan and accomplish tasks, meet deadlines, analyze risk and uncertainty, and demonstrate leadership and management skills. Teams will coordinate and communicate with a range of stakeholders and give final presentations. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4231 - Construction Materials and Methods

This course presents information regarding the primary materials and methods used to design and construct the majority of buildings in the United States including concrete, wood and steel. Students explore processes related to the specification, ordering and installation of various construction materials, as well as analyze various materials' performance characteristics. Two important themes are incorporated throughout discussions: sustainability and ethics. In addition to lectures and class activities, students will be asked to research, define, and present information regarding a wide range of material properties and construction processes. Prereq: CEMT 2100 or CVEN 4230. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4232 - Construction Planning and Control

This course presents knowledge on planning and controlling of construction projects. Students will learn the basics of construction planning to develop work breakdown structure and activity list, estimate activity cost and duration, and identify job logic and precedence relationships. Several scheduling techniques will be presented in this class, including bar chart, network scheduling, uncertainty in scheduling (PERT), limited resources scheduling, resource leveling, line of balance, and time-cost tradeoff analysis. Furthermore, this class will provide knowledge on construction control techniques, including cash flow analysis, integrated time-cost control, and value engineering. Students will acquire skills on the use of currently available computer scheduling and planning software such as Primavera 6 and Navisworks Manage to create 4D models and visualize the sequence of the construction activities. In addition, students will form teams and work on a project throughout the semester to apply the skills that they learn in class. Cross-listed with CVEN 5232. Prereq: CEMT 2100 or CVEN 4230 and a statistics course (MATH 2830, 3800, CVEN 3611, ELEC 3817, or BANA 2010). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4233 - Construction Cost Estimating

This course presents the application of scientific principles to rough and detailed cost estimating; cost indexing; bidding document, process and contract documents; quantity take off; concepts and statistical measurements of the factors involved in direct costs; overhead costs, cost markups and profits; project financing and cashflow analysis; cost control; computerized estimating and building information modeling; life cycle cost; and value engineering. Students are expected to use RSMeans building construction cost data to develop a detailed cost estimate of a project during the semester. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits **Semester Hours:** 3 to 3

CEMT 4234 - Sustainable Construction

This course will serve as an introduction to major components and technologies used in sustainable design and construction to create healthy, environmentally-sensitive built environments. Content focuses on construction processes, renewable energy systems, healthy buildings, natural and cultural resources, and traditional as well as cutting-edge building techniques. Course participants will gain knowledge about effective sustainable practices

through active learning by engaging in case studies, class presentations, and group activities. Numerous guest speakers will share first-hand experience regarding implementation and professional practice of sustainable principles in the real-world. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4236 - Project Management Systems

Address the basic nature of managing projects and the advantages and disadvantages to this approach. Introduce the characteristics, techniques, and problems associated with initiating, planning, executing, controlling, and closeout of projects. Learn about the International Standards of PM and how to use them. Develop a management perspective about projects to help develop future project managers. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4240 - Building Information Modeling (BIM)

Building Information Modeling is an advanced approach to facility design and construction using object-oriented 3-D models. It can be integrated in the design and construction for analytical purposes, including design, visualization, quantity takeoff, cost estimating, planning, and facility management. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4242 - Construction Safety

This course is a study of safety practices in the construction industry and the specific safety procedures used in safety management of a construction project. Topics include safety risks inherent in construction projects, the roles of government, the judicial system, the insurance industry, designers and project owners in safety management and the economic impact of injuries. Advanced topics include safety risk quantification and analysis, design for safety and emerging technologies. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 4939 - Internship

Construction Engineering and Management Internship. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

CEMT 5232 - Construction Planning and Control

This course presents knowledge on planning and controlling of construction projects. Students will learn the basics of construction planning to develop work breakdown structure and activity list, estimate activity cost and duration, and identify job logic and precedence relationships. Several scheduling techniques will be presented in this class, including bar chart, network scheduling, uncertainty in scheduling (PERT), limited resources scheduling, resource leveling, line of balance, and time-cost tradeoff analysis. Furthermore, this class will provide knowledge

on construction control techniques, including cash flow analysis, integrated time-cost control, and value engineering. Students will acquire skills on the use of currently available computer scheduling and planning software such as Primavera 6 and Navisworks Manage to create 4D models and visualize the sequence of the construction activities. In addition, students will form teams and work on a project throughout the semester to apply the skills that they learn in class. Cross-listed with CVEN 4232. Prereq: CEMT 2100 or CVEN 4230 and a statistics course (MATH 2830, 3800, CVEN 3611, ELEC 3817, or BANA 2010) or graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CEMT 5233 - Construction Cost Estimating

This course presents the application of scientific principles to rough and detailed cost estimating; cost indexing; bidding document, process and contract documents; quantity take off; concepts and statistical measurements of the factors involved in direct costs; overhead costs, cost markups and profits; project financing and cashflow analysis; cost control; computerized estimating and building information modeling; life cycle cost; and value engineering. Students are expected to use RSMeans building construction cost data to develop a detailed cost estimate of a project during the semester. Prereq: CEMT 2100 or CVEN 4230. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CEMT 5234 - Sustainable Construction

This course will serve as an introduction to major components and technologies used in sustainable design and construction to create healthy, environmentally-sensitive built environments. Content focuses on construction processes, renewable energy systems, healthy buildings, natural and cultural resources, and traditional as well as cutting-edge building techniques. Course participants will gain knowledge about effective sustainable practices through active learning by engaging in case studies, class presentations, and group activities. Numerous guest speakers will share first-hand experience regarding implementation and professional practice of sustainable principles in the real-world. Prereq: CEMT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CEMT 5235 - Advanced Construction Engineering

This course starts with a quick overview of Construction Engineering Management including organizations involved, current approaches and challenges and approaches. The course then covers contracts, quality management, risk management and decision analysis, financial management, safety, and temporary construction facilities. Cross-listed with CVEN 4235. Prereq: CEMT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

CEMT 5236 - Project Management Systems

Address the basic nature of managing projects and the advantages and disadvantages to this approach. Introduce the characteristics, techniques, and problems associated with initiating, planning, executing, controlling, and closeout of projects. Learn about the International Standards of PM and how to use them. Develop a management perspective about projects to help develop future project managers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 5237 - Advanced Project Management

A survey of advanced topics in project management building on the Project Management Systems course and utilizing the Project Management of Knowledge. Case studies, complex problems, and a class project will be utilized in the course to bring a practical perspective to the conceptual lessons. Cross-listed with CVEN 6237. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 5238 - Integrated Construction Leadership

The course is an integrated architecture, engineering, and construction (AEC) business course bringing together executives, principals, and managers to current industry topics to provide students an opportunity to apply management and leadership principles from the various fields to case study projects. Cross-listed with CVEN 6238. Prereq: CEMT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 5240 - Building Information Modeling (BIM)

Building Information Modeling is an advanced approach to facility design and construction using object-oriented 3-D models. It can be integrated in the design and construction for analytical purposes, including design, visualization, quantity takeoff, cost estimating, planning, and facility management. Prereq: CEMT 2100 or CVEN 4230. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 5242 - Construction Safety

This course is a study of safety practices in the construction industry and the specific safety procedures used in safety management of a construction project. Topics include safety risks inherent in construction projects, the roles of government, the judicial system, the insurance industry, designers and project owners in safety management and the economic impact of injuries. Advanced topics include safety risk quantification and analysis, design for safety and emerging technologies. Prereq: CEMT 2100 or CVEN 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 5246 - Construction, Business and Innovation

AEC professionals rely on technical and soft (social) skills to solve complex challenges. The interdisciplinary nature of project delivery, to an increasing extent, requires professionals to

collaborate across disciplines. This course explores innovation and collaboration at the interface of construction and business. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 6235 - Advanced Construction Engineering

This course starts with a quick overview of Construction Engineering Management including organizations involved, current approaches and challenges and approaches. The course then covers contracts, quality management, risk management and decision analysis, financial management, safety, and temporary construction facilities. Prereq: CEMT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 6237 - Advanced Project Management

A survey of advanced topics in project management building on the Project Management Systems course and utilizing the Project Management of Knowledge. Case studies, complex problems, and a class project will be utilized in the course to bring a practical perspective to the conceptual lessons. Cross-listed with CVEN 5237. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CEMT 6238 - Integrated Construction Leadership

The course is an integrated architecture, engineering, and construction (AEC) business course bringing together executives, principals, and managers to current industry topics to provide students an opportunity to apply management and leadership principles from the various fields to case study projects. Cross-listed with CVEN 5238. Prereq: CEMT 2100 or CVEN 4230 or graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

Counseling

COUN 5000 - Human Sexuality

Students will become familiar with human sexuality across the life span. Ecological and family systems theories will provide an understanding of human sexuality from a systemic perspective. Implications for working with individuals, families, and couples will be examined. Prereq: COUN 5010. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5010 - Counseling Theories

Focuses on counseling theories: Psychodynamic, Adlerian, Person-Centered, Existential, Behavioral, including DBT, Cognitive Behavioral, Gestalt, & Reality Therapy. Also includes an overview of the history of the counseling profession and the role and function of counselors in various settings. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5050 - Foundations of Student Affairs

This course examines theories of college student development including student learning and growth during the postsecondary years. This course will provide an introduction to psychosocial, cognitive, moral, and social identity development theories used to explain college student development. Cross-listed with HDFR 4050. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

COUN 5070 - Law and Ethics in Higher Ed and Student Affairs

This course will introduce students to the laws that impact college students and institutions of higher education. Graduate students will obtain knowledge of and the necessary skills to apply a code of ethics to their practice in student affairs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5100 - Techniques of Counseling

Students practice basic counseling skills, develop therapeutic intervention strategies, and improve the effectiveness of their communication by practicing listening and responding. Videotaped role-plays are utilized. Prereq: COUN 5010 and 5810. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 5110 - Group Counseling

Learn group theory and dynamics. Practice facilitating a group. Learn about screening, group membership and styles, roles and behavior, termination of groups. Extensive practice in laboratory setting. Prereq: COUN 5010, COUN 5100 and 5810. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 5120 - Counseling Grief and Loss

This elective course is an introduction and study of the field of bereavement in counseling. Studies focus on relating to client's experience with grief, loss and/or trauma through lectures, speakers, videos, readings, experiential in-class simulations, self-discovery and introspection.

Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5130 - College Student Development

This course examines theories of college student development including student learning and growth during the postsecondary years. This course will provide an introduction to psychosocial, cognitive, moral, and social identity development theories used to explain college

student development. Cross-listed with HDFR 4130. Repeatable. Max Hours: 6 Credits.
Semester Hours: 3 to 3

COUN 5150 - Family Counseling/Therapy

Introduces systemic and family theories and intervention strategies. Emphasis on historical development of systems theory. Prereq: COUN-MA and COUN 5010 and 5810 or COUN-MA CFT. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5160 - Techniques in Family Counseling/Therapy

This didactic and experiential course presents an overview of techniques and theories in family therapy. It will help students continue to develop a theoretical framework for engaging in theory driven therapeutic interventions via practice family therapy role plays Prereq: COUN 5010, 5100 and 5150. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits **Semester Hours:** 3 to 3

COUN 5180 - Counseling Couples

This course is didactic and experiential dealing with therapeutic techniques applied to the improvement of intimate/couple relationships. Emphasis is placed on empirically based assessment, diagnosis, and treatment of couples' problems. Special topics include: co-habiting couples, gay and lesbian couples, remarried couples, cross-cultural couples, ethical and moral dimensions of couple counseling, unique couple issues, and the effectiveness of couple therapy. Prereq: COUN 5010, 5100 and 5150. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5280 - Addictions Counseling

Includes treatment strategies for clinicians in addressing varieties of addictive behaviors including substance, abuse, eating disorders, gambling and sexual addiction. Cultural dimensions of addictions are also considered. Restricted to Graduate level students in the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5330 - Counseling Issues and Ethics

An in-depth examination of ethical and legal issues in the field. Topics include working with individuals and family systems, licensure, professional associations, record keeping and statutory requirements. Prereq: COUN 5010 and 5810. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5400 - Career Development

Development of competencies in career development counseling. Theories of work systems, psychological dynamics, information systems, and decision making models are covered. Interacting with work or family systems and other subsystems is emphasized. Restricted to Graduate level students in the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5425 - Developing & Implementing a School Counseling Program: ASCA

The course is specifically designed to provide training for school counselors and related professionals to develop and implement a comprehensive counseling and guidance program, which incorporates the ASCA National Model. Prereq: COUN 5010 and 5815, EDHD 6200, RSEM 5110 and 5120. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5500 - Diversity, Inclusion, Social Justice in Higher Education

An examination of society, media, and public and educational policy and their impact on higher education access and persistence for marginalized groups. Students are called to consider how student affairs professionals might promote social justice for marginalized student groups. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5810 - Multicultural Counseling Issues for Individuals and Families

Offers introduction to competent multicultural and social justice counseling. Students develop the awareness, knowledge, skills and action competences necessary for culturally responsive interventions with diverse communities. The course explores issues of ethnicity, culture, age, disability, and sexual orientation and learn about multicultural and social justice interventions for addressing these issues in counseling. Restricted to Graduate level students in the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5815 - Introduction to School Counseling

This course emphasizes the unique and varied role of the school counselor and school counseling programs in diverse public schools. The course focus will be on learning the various skills necessary to meet the needs of school age students and others in the school community. In addition, the course will cover The ASCA model of comprehensive developmental school counseling activities, and focus on practical resources for counseling students in diverse school settings. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5820 - Strategies of Agency Counseling

Students learn the role and function of the counselor in community agency settings. Intervention strategies, consultation, administration of community mental health agencies.

Prereq: COUN 5010 and 5810. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5825 - The Business Of Private Practice

This course is designed to teach students how to start and manage a successful private practice in counseling. Emphasis is placed on understanding and navigating the business side of professional counseling. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5830 - Special Topics

Specific topics vary from semester to semester. Intervention strategies with children, issues in abuse, violence, incest, legal issues, adult counseling, grief, death and dying, private practice. Restriction: Restricted to COUN majors within the School of Education and Human Development. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

COUN 5835 - Gender And Sexual Orientation

Investigates constructions of gender and sexuality in the systemic context of individuals, relationships, families, and culture. Emphasis will be placed on developing critical thinking and clinical skills that engage diverse clients in a respectful, ethical, and effective manner in therapy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 5840 - Independent Study: COUN

Individually directed research activity on special topics not covered by course offerings. Degree students only, with advance approval by major, professor and department chair. Restriction: Restricted to COUN majors within the School of Education and Human Development. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

COUN 5910 - Practicum in COUN

Supervised counseling practice in the counseling lab and appropriate settings (150 clock hours). Emphasis on individual and group counseling techniques and therapeutic intervention strategies. Prereq: all counseling course work must be completed. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 6 Credits. **Semester Hours:** 6 to 6

COUN 5915 - Practicum in School Counseling

This class will provide school track students with 3 credits of fieldwork at a developmental level of their choice. The course will require students to work with a school counselor activities that the counselor is assigned under supervision. Students will develop skills in needs assessment, developing classroom guidance activities and running the activities; they will sit in on IEP

conferences, help conduct college fairs, administer career assessment inventories and standardized assessments, learn to place students in appropriate classes, and provide responsive counseling services on an as needed basis. Prereq: COUN 5010, COUN 5110, COUN 5400, COUN 5425, COUN 5810, COUN 5815, COUN 6230. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 5930 - Internship in Counseling

Supervised internship of 600 clock hours. Intern performs activities of a regularly employed professional in an approved community site. Prereq: COUN 5910. Restriction: Restricted to COUN majors within the School of Education and Human Development. Students must register for 3 or 6 credit hours. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 6

COUN 5940 - Internship in Higher Education and Student Affairs

The internship is the final academic experience in the acquisition of the Master's degree in counseling. This course builds on the theoretical and skill-building courses and is intended to give students practical experience in higher education and student affairs. Emphasis on personal and professional development as higher education and student affairs professionals. Students must register for 3 or 6 credit hours. Prereq: COUN 5050 and COUN 5500. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 6

COUN 6000 - Introduction to Sex Therapy

Provides an overview of human sexuality over the life cycle, addressing social, psychological, and physiological aspects of human sexuality. Etiology of human sexuality diagnoses and treatment of problems related to human sexuality are addressed. Note: This course is a component in the couple and family program and required for MFT licensure. Prereq: COUN 5010, COUN 5100, COUN 5110, COUN 5150. Prereq or Coreq: COUN 5160. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6100 - Spiritual Dimensions of Counseling

A didactic and experiential course involving the following content areas: theories of spiritual development, a survey of religious traditions, assessment, ethical issues, self-of-the-therapist issues, and treatment interventions and strategies in working with clients' values. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6140 - Counseling Children, Adolescents and Their Parents

A didactic and experiential course addressing child, adolescent, and parental/family issues. Counseling techniques, including play therapy, and parent education are taught and practiced. Assessment tools and specific strategies are used to increase positive family relationships. Prereq: COUN 5010, COUN 5100, COUN 5150 and EDHD 6200. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 6150 - Introduction to Emotionally Focused Couple Therapy

This course is designed to help students conceptualize couple distress from an attachment perspective and gain foundational knowledge in Emotionally Focused Therapy (EFT). The organization of the course includes observation of therapy sessions, presentations of theory and clinical techniques, skills training exercises, and discussion of specific cases, clinical material and issues. Prereq: COUN 5010, COUN 5100, COUN 5150, COUN 5160. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 6160 - Advanced Assessment: Theory and Treatment in Family Systems

This is a didactic and experiential course focusing on family assessment instruments and their use in family therapy. Emphasis is placed on the role of assessment in family therapy, the relationship of assessment to treatment planning and evaluation, gaining familiarity with a variety of assessment instruments, and learning to apply assessment skills to real-world clients. Prereq: COUN 5010, 5100, 5150, 5160, 6250 and RSEM 5110. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits

Semester Hours: 3 to 3

COUN 6170 - Issues In Family Studies

This is a family studies course that is both didactic and experiential. It is designed to assist you to become more informed about contemporary family issues that affect you, your clients, and society. The course major components include: theories of "normal" family processes and life cycle development, family composition, and social issues that impact families and family therapy. Prereq: COUN 5010. Restriction: Restricted to COUN majors within the School of Education and Human Development. Cross-listed with COUN 7170. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 6230 - Developmental Counseling in Schools: Prevention & Intervention

This course offers the tools to provide developmental counseling services in the schools, including prevention through classroom counseling activities linked with the curriculum, and responsive services. Prereq: COUN 5100, 5110, 5400, 5810, EDHD 6200, RSEM 5110 and 5120. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6240 - Consultation Strategies

Focuses on the development of consultation skills and implementation of strategies. Students are exposed to major theories of the consultation process. In addition, this course provides the opportunity to practice consultation and implementation strategies within a system: an agency, business setting, or educational setting. Prereq: COUN 5010 or permission of instructor. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6250 - Mental Health Diagnosis

This course addresses individual diagnosis from a variety of perspectives: Biological, developmental, medical, neurological, psychosocial, cultural and interpersonal. It will provide students with a broad theoretical base for understanding psychopathology, from not only an individual, descriptive, symptom-based perspective as presented in the DSM-5, but also from a contextual systemic perspective including developmental hallmarks, familial patterns and socio-cultural contributors. Prereq: COUN 5010 and 5810. Restriction: Restricted to COUN and EDHD majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6310 - Facilitating Sociopolitical Development Theory & Actn

Participants will learn to use dialogic instructional strategies to create student-teacher partnerships that respect student voice and affirm the lived experiences of students. Participants will learn strategies to engage students and themselves in critical inquiry about identity, privilege, and social justice. Cross listed with COUN 7310. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6320 - Participatory Research Methods in Context

This course will introduce students to participatory research methods, including Youth Participatory Action Research (YPAR), PAR, youth participatory evaluation, and design based research. Graduate students will study current examples of this work, design, and conduct a study in their professional context. Cross listed with COUN 7320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6330 - Advanced Seminar in Counseling and Psychotherapy

Professional analysis of major trends in counseling and psychotherapy. Specific emphasis topics identified. Prereq: COUN 5010, 5100 and 5330. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

COUN 6810 - Advanced Multicultural Counseling

Offers essential preparation for competent multicultural and social justice counseling practice with culturally diverse clients, and families. Students learn about effective multicultural counseling and advocacy skills. The course explores the impact of ethnicity, culture, age, disability, sexual orientation, etc., on individual behavior, interpersonal relationships, and learn about multicultural and social justice interventions and techniques for addressing these issues in counseling. Prereq: COUN 5010, 5100 and 5810. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COUN 6840 - Independent Study

Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 4 Credits. **Semester Hours: 1 to 4**

COUN 6910 - Advanced Practicum in Counseling

Restriction: Restricted to COUN majors within the School of Education and Human Development. Repeatable. Max Hours: 12 Credits. **Semester Hours: 3 to 6**

COUN 6950 - Master's Thesis

Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 4 Credits. **Semester Hours: 4 to 4**

COUN 7100 - Advanced Theories and Techniques in Psychotherapy

Learn and practice advanced techniques for addressing adult and adolescent clinical problems. Examine efficacy research on specific counseling techniques as associated with particular approaches in counseling. Prereq: COUN 5010, 5100 and 5820. Restriction: Restricted to COUN majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COUN 7170 - Issues in Family Studies

This is a family studies course that is both didactic and experiential. It is designed to assist you to become more informed about contemporary family issues that affect you, your clients, and society. The course major components include: theories of "normal" family processes and life cycle development, family composition, and social issues that impact families and family therapy. Cross-listed with COUN 6170. Max hours: 3 Credits. **Semester Hours: 3 to 3**

COUN 7310 - Facilitating Sociopolitical Development Theory & Actn

Participants will learn to use dialogic instructional strategies to create student-teacher partnerships that respect student voice and affirm the lived experiences of students.

Participants will learn strategies to engage students and themselves in critical inquiry about identity, privilege, and social justice. Cross listed with COUN 6310. Max hours: 3 Credits.

Semester Hours: 3 to 3

COUN 7320 - Participatory Research Methods in Context

This course will introduce students to participatory research methods, including Youth Participatory Action Research (YPAR), PAR, youth participatory evaluation, and design based research. Graduate students will study current examples of this work, design, and conduct a study in their professional context. Cross listed COUN 6320. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

COUN 7800 - Supervision in Counseling and Psychotherapy

Examines training principles, processes, and practices in clinical supervision. Emphasis on individual and family therapy supervision. Prereq: COUN 5010, 5100, 5910 and 5930.

Restriction: Restricted to COUN majors within the School of Education and Human Development. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

Courses in the Cohort MBA

PMBA 6310 - International Business Abroad

The MBA International Business Study Abroad is an experiential learning course conducted abroad. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6320 - Career and Professional Development

This course focuses on preparing students to successfully seek their next position and develop the professional skills to excel in their long-term career. Sample topics include: Personal Brand Readiness; Business Communication Skills; Business Professionalism; and Interview Skills.

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6520 - Leading a Productive Workforce

This course addresses how leaders can effectively manage their employees. Some topics that will be addressed in the course include: leadership styles and approaches; self-management; personality differences; values, attitudes, perception and motivation; and effective communication and conflict resolution. Note: Credit cannot be received for this course if BUSN 6520 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester**

Hours: 1.5 to 1.5

PMBA 6522 - Building Effective Work Environments

This course focuses on how leaders can build organizational environments where individuals and teams can be productive. Some topics that will be addressed include: team formation and management; effective organizational structures and cultures; some effective human resource practices related to selection, evaluation and development; and managing power, politics and change. Note: Credit cannot be received for this course if BUSN 6520 has already been completed. Pre-req: Leading a Productive Workforce. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6530 - Data Analytics I

This course covers basic statistical concepts and methods including descriptive and graphical tools, exploratory data analysis, statistical inference, and bivariate methods. Emphasis is placed on proper choice of methods and interpretation of the results. Lectures, assignments, and projects are grounded in real data taken from business applications. Note: Credit cannot be received for this course if BUSN 6530 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6532 - Data Analytics II

This course allows decision-makers to understand relationships among key business metrics. Applications of these methods may be found throughout the organization from human resources management and marketing to accounting and finance. Multiple regression provides the methodological framework. Case studies are used extensively throughout the course. Note: Credit cannot be received for this course if BUSN 6530 has already been completed. Prereq: PMBA 6530. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6540 - Business Law

This course provides students with a working knowledge of the legal parameters for business decision making in four areas: 1) tort law, 2) business organizations, 3) employment law, and 4) intellectual property law. The influence of legal issues on an organization's decision-making is stressed. Note: Credit cannot be received for this course if BUSN 6540 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6542 - Business Ethics

This course emphasizes analyzing business decisions from an ethical perspective, including how to spot and address red flags that foster unethical behavior. Governance and stakeholder

management techniques that incentivize ethical behavior will be highlighted. Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Note: Credit cannot be received for this course if BUSN 6540 has already been completed. Prereq: PMBA 6540. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6550 - Financial Accounting

This course emphasizes the use of external financial reporting information when making business decisions, particularly to assess a firm's overall financial condition and performance for investment and credit decisions. To understand the underlying basis of financial reporting the concepts and mechanics of generating financial statements is addressed in a nontechnical manner. Note: Credit cannot be received for this course if BUSN 6550 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6552 - Management Accounting

This course emphasizes the use of management accounting information when making business decisions within organizations. Topics include product and service costing, planning profitability and controlling operations through budgeting techniques and short-term non-routine decision-making. Note: Credit cannot be received for this course if BUSN 6550 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6560 - Marketing Management I

This course focuses on applications of analytical tools for understanding the dynamic marketing environment and creating value propositions, selecting target markets, and determining positioning strategies. Students evaluate and formulate the corresponding elements of a Marketing Plan. Note: Credit cannot be received for this course if BUSN 6560 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6562 - Marketing Management II

This course continues Marketing Management Part I. The focus is on applications of analytical frameworks and decision-making regarding alternative product, price, service, channels, communication, and other marketing mix strategies. Students create the corresponding elements of a Marketing Plan. Note: Credit cannot be received for this course if BUSN 6560 has already been completed. Prereq: PMBA 6560. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6570 - Dynamics of Global Business

This course examines the dynamics of global business from both a multinational and entrepreneurial perspective. Topics covered include the cultural, political, legal, economic-financial, trade and investment, and sustainability aspects of the international business environment. Offered prior to the international field trip, this course helps students cultivate a global mindset and provides them with key environmental and contextual information to enrich their international field study experience. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits.

Semester Hours: 1.5 to 1.5

PMBA 6572 - Global Business Operations and Practices

This course examines key operations and practices of firms engaged in cross-border business. Topics covered include (1) the evaluation and selection of markets, partners, and route to markets, and (2) the management of business functions (e.g., marketing; human resource management; supply chain, operations, and information technology management; financial management and accounting) in an international context. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6610 - Digital Leadership and Governance

This course examines strategic issues involved with the effective management of information technology (IT) in businesses including the role of IT as a driver of business innovation and strategy. By examining how an organization makes IT investment decisions, implements new IT assets, delivers services, assesses risk and measures its own performance, a Digital Leadership and Governance portfolio can assure the organization is meeting its compliance and security responsibilities, along with fulfilling strategic objectives. Note: Credit cannot be received for this course if BUSN 6610 or ISMG 6180 have already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6612 - Data Management Strategy

This course provides students with an overview of the key concepts for establishing an organization's data management strategy, ensuring that its operational and analytical needs are efficiently, effectively, and securely addressed. The course emphasizes real-case scenarios that companies face when addressing global operational and analytical data challenges. The course also addresses current trends in managing structured data as organizations move to the Cloud-based computing services. Notes: Credit cannot be received for this course if BUSN 6610 or ISMG 6180 have already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits.

Semester Hours: 1.5 to 1.5

PMBA 6620 - Applied Microeconomics

This course provides an overview of "thinking like an economist". The course covers an introduction to supply and demand and the basic forces that determine an equilibrium in a market economy. Students learn to understand: consumer behavior, firm behavior, and analyze different types of market structures (monopoly, oligopoly and a competitive market). Note: Credit cannot be received for this course if BUSN 6620 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6622 - Applied Macroeconomics

This course explores the causes and effects of unemployment, interest rates, and inflation. The roles of the central bank and the government in implementing policy are discussed. The course provides models of macroeconomics that are introduced and illustrated using historical US data. The course prepares a student to take intermediate macroeconomics. Note: Credit cannot be received for this course if BUSN 6620 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6630 - Operations Management

This course is concerned with operations management, including topics such as resource planning, inventory control, logistics management, network configurations, demand management, and workflow efficiencies. Quantitative analytics to support decision-making is used. Current innovations and future trends in operations are included. Note: Credit cannot be received for this course if BUSN 6630 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6632 - Analytics for Operations

This course is concerned with building and applying formal models to solve important tactical and strategic problems found in the operations side of both private and public organizations. An emphasis is placed on optimization methods and covers skills necessary to build and evaluate models and to understand the reasoning behind model-based analysis. Note: Credit cannot be received for this course if BUSN 6630 has already been completed. Prereq: PMBA 6630. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6640 - Finance Management I

This two-part course deals with decisions a business firm takes to maximize stakeholder value. Students learn to use theories and techniques to examine and understand business and security

valuation, the cost of capital, capital budgeting and capital structure, and other related issues. Note: Credit cannot be received for this course if BUSN 6640 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6642 - Finance Management II

This two-part course deals with decisions a business firm takes to maximize stakeholder value. Students learn to use theories and techniques to examine and understand business and security valuation, the cost of capital, capital budgeting and capital structure, and other related issues. Note: Credit cannot be received for this course if BUSN 6640 has already been completed. Prereq: PMBA 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6710 - Strategic Management

This course is a graduate level introduction to the topic of strategic management - definitions, core ideas, and a broad understanding of what is required for the firm to build a competitive advantage that is sustainable over the medium to long term. Note: Credit cannot be received for this course if BUSN 6710 has already been completed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

PMBA 6712 - Strategy in Practice

The capstone of the MBA and a deeper dive into strategic management - covering the essential tools used to formulate a firm's strategy, but also building on the core functional area courses to tackle strategy in practice via an in-depth, group-based simulation. Note: Credit cannot be received for this course if BUSN 6710 has already been completed. Prereq: PMBA 6710. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

Courses in the One Year MBA

AMBA 5939 - Internship for MBAs

Supervised experiences involving the applications of concepts and skills in an employment setting. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

AMBA 6201 - Leading in Organizations

This course addresses core leadership challenges, such as motivating a diverse employee base, working in and managing teams, designing an organization and building a healthy culture, leading organizational change, and managing power and politics in the workplace. Restrictions: Restricted to AMBA majors within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6202 - Workforce Management

This course focuses on the management and deployment of human resources in organizations. Students learn how leaders can utilize recruitment and staffing strategies, performance management, compensation and benefits, data and analytics, and training and leadership development programs to foster a successful workforce. Restrictions: Restricted to AMBA majors within the Business School. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6210 - Data Analytics I

This course covers basic statistical concepts and methods including descriptive and graphical tools, exploratory data analysis, statistical inference, and bivariate methods. Emphasis is placed on proper choice of methods and interpretation of the results. Lectures, assignments, and projects are grounded in real data taken from business applications. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6211 - Data Analytics II

This course allows decision-makers to understand relationships among key business metrics. Applications of these methods may be found throughout the organization from human resources management and marketing to accounting and finance. Multiple regression provides the methodological framework. Business case studies are used extensively throughout the course. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6220 - Business Law and Ethics

This course provides the One Year MBA student with a working knowledge of the legal and ethical issues involved in business decision-making in four areas: 1) tort law, 2) business organizations, 3) employment law, 4) intellectual property law. The influence of legal and ethical issues on an organization's decision-making is stressed. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6230 - Financial Accounting

This course emphasizes the use of external financial reporting information when making business decisions, particularly to assess a firm's overall financial condition and performance for investment and credit decisions. To understand the underlying basis of financial reporting the concepts and mechanics of generating financial statements is addressed in a nontechnical manner. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6231 - Management Accounting

This course emphasizes the use of management accounting information when making business decisions within organizations. Topics include product and service costing, planning profitability and controlling operations through budgeting techniques and short-term non-routine decision making. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6240 - Marketing Principles

This course focuses on marketing theory and its application, emphasizing the study of core principles that can be applied to a wide range of marketing situations, both large and small. The course encourages critical analysis via a case-based approach to learning. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6241 - Marketing Strategy

This course focuses on applying the fundamentals of marketing theory in real-world settings. Guest-speakers, company site visits, and developing a marketing plan are used to emphasize marketing principles. The distinction between small-business-oriented lean marketing and large-scale marketing effort of corporations will be drawn out thru the course experience. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6250 - Digital Leadership and Governance

This course examines strategic issues involved with the effective management of information technology (IT) in businesses including the role of IT as a driver of business innovation and strategy. By examining how an organization makes IT investment decisions, implements new IT assets, delivers services, assesses risk and measures its own performance, a Digital Leadership and Governance portfolio can assure the organization is meeting its compliance and security responsibilities, along with fulfilling strategic objectives. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6251 - Data Management Strategy

This course provides students with an overview of the key concepts for establishing an organizations data management strategy, ensuring that its operational and analytical needs are efficiently, effectively, and securely addressed. The course emphasizes real-case scenarios that companies face when addressing global operational and analytical data challenges. The course also addresses current trends in managing structured data as organizations move to the Cloud-based computing services. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6260 - Applied Microeconomics

This course provides an overview of "thinking like an economist". The course covers an introduction to supply and demand and the basic forces that determine an equilibrium in a market economy. Students learn to understand: consumer behavior, firm behavior, and analyze different types of market structures (monopoly, oligopoly and a competitive market). Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6261 - Applied Macroeconomics

This course explores the causes and effects of unemployment, interest rates, and inflation. The roles of the central bank and the government in implementing policy are discussed. The course provides models of macroeconomics will be introduced and illustrated using historical US data. The course prepares a student to take intermediate macroeconomics. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6270 - Operations Management

This course is concerned with sales and operations planning through coordination of resource planning, inventory control, logistics management, network configurations, demand management and work flow efficiencies with an operations strategy perspective. Computer-based operations analytics to support decision making is emphasized. Current innovations and future trends in operations are included. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6271 - Supply Chain Management

This course is concerned with the design, analysis, management and control of supply chains. Because of advances in globalizations, sustainability and technology, course emphasis includes integration of processes and systems, relationship management of upstream and downstream players, configuration of network designs and evaluation of strategies that incorporate current and future trends. Computer-based analytics and the Supply Chain Operations Reference

(SCOR) model are addressed. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6280 - Finance Management I

This two-part course deals with decisions a business firm takes to maximize stakeholder value. Students learn to use theories and techniques to examine and understand business and security valuation, the cost of capital, capital budgeting and capital structure, and other related issues. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6281 - Finance Management II

This two-part course deals with decisions a business firm takes to maximize stakeholder value. Students learn to use theories and techniques to examine and understand business and security valuation, the cost of capital, capital budgeting and capital structure, and other related issues. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6290 - Strategy Foundations

This course is a graduate level introduction to the topic of strategic management - definitions, core ideas, and a broad understanding of what is required for the firm to build a competitive advantage that is sustainable over the medium to long term. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6291 - Strategy in Practice

The capstone of the MBA and a deeper dive into strategic management - covering the essential tools used to formulate a firm's strategy, but also building on the core functional area courses to tackle strategy in practice via an in-depth, group-based, simulation. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6301 - Global Business

This course examines the dynamic context of global business from both a multinational and entrepreneurial perspective. Topics covered include the cultural, political-legal, technological, economic, financial, and sustainability aspects of the international business environment. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6310 - International Business Abroad

The One Year MBA International Business Study Abroad is an experiential learning course conducted abroad. Available for One Year MBA students. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 3 Credits. **Semester Hours:** 3 to 3

AMBA 6320 - Career and Professional Development

This course focuses on preparing students to successfully seek their next position and develop the professional skills to excel in their long-term career. Sample topics include: Personal Brand Readiness; Business Communication Skills; Business Professionalism; and Interview Skills. Restrictions: Restricted to graduate majors within the Business School with the AMBA major code. Repeatable. Max Hours: 1.5 Credits. **Semester Hours:** 0.5 to 1

AMBA 6330 - Introduction to Business Consulting for MBAs

The course is designed to expose students to the real-world application of project and client management. The course includes partnerships with external organizations, and provides students the platform to conduct strategic consulting on specific initiatives within those organizations. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 3 Credits. **Semester Hours:** 3 to 3

AMBA 6401 - Negotiations

This course is designed to give students hands on experience developing critical career or professional skills, with a specific focus on negotiation and bargaining effectiveness. Through simulations, role-playing cases, and personal experience, students practice and hone their negotiation skills, gain insight into interpersonal influence and communication, and learn how they are perceived by others. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

AMBA 6410 - Investments

This course provides students with a broad understanding of financial theory, financial markets and products, and analytical tools and techniques needed for investment decision making. Topics include portfolio theory, equilibrium models of asset pricing, equity valuation and option fundamentals. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credit Hours. **Semester Hours:** 1.5 to 1.5

AMBA 6420 - Visual Analytics for Big Data

This course deals with the core concepts and skills behind big data for business applications, such as SQL for data extraction, data cleaning and processing, RStudio and SAS for modeling, and Tableau and Power BI for data visualization and PowerPoint for presentations. Detailed business applications integrating the concepts and skills are demonstrated. Restriction:

Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credits **Semester Hours:** 1.5 to 1.5

AMBA 6430 - Digital Marketing Strategies

The marketing of services which constitutes 80% of the US economy is changing very rapidly. This course uses cases and speakers to examine how service-oriented organizations make effective transformations from traditional to digital marketing strategies. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credit Hours. **Semester Hours:** 1.5 to 1.5

AMBA 6440 - Conflict Management

Using negotiation principles as a foundation, students gain hands on experience developing critical [alt: career or professional] management skills, with a focus on conflict management, group consensus-building, managing cultural differences, and minimizing decision biases. Through simulations, role-playing cases, and personal experience, students practice and hone their skills and give and receive performance feedback to others. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credit Hours. **Semester Hours:** 1.5 to 1.5

AMBA 6450 - Advanced Corporate Finance

This course extends the basic principles of corporate finance to an advanced level to provide an intuitive and adequate framework for making financial decisions. The course deals with topics such as agency problem, valuation, and capital structure decision. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credit Hours. **Semester Hours:** 1.5 to 1.5

AMBA 6460 - Digital Marketing Analytics

This course is designed to provide you with an overview of the ever-changing digital marketplace while also equipping you with hands-on experiences and analytical skills that you will need to perform vital functions in various areas of digital marketing. By the end of the course, you will be able to walk into any company with an online presence and improve their use of the digital media. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credit Hours. **Semester Hours:** 1.5 to 1.5

AMBA 6470 - Applied Business Consulting

This course provides students who have completed AMBA6330 (Introduction to Business Consulting for MBAs) the opportunity to apply their learning to a real-world business-consulting project. Students will scout, scope, consult and present on a project with a company of their

choosing. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max Hours: 1.5 Credits **Semester Hours:** 1.5 to 1.5

AMBA 6490 - One Year MBA Practicum

The One Year MBA Practicum course trains students in real-world applications. In the Practicum, students, under the direction of faculty, address a real-world problem. Restriction: Restricted to graduate majors within the Business School with the AMBA major code. Max hours: 5 Credits. **Semester Hours:** 5 to 5

AMBA 6840 - Independent Study

Independent study. Limited to OYMBA students only. Allowed only under special and unusual circumstances. Permission of Program Director required. Prereq: Limited to OYMBA students only. Allowed only under special and unusual circumstances. Permission of Program Director required. Max Hours: 1.5 Credits. **Semester Hours:** 1.5 to 1.5

Criminal Justice

CRJU 1000 - Criminology and Criminal Justice: An Overview

This course is designed to provide an overview of the criminal justice process and the criminal justice system in general. Concepts of crime, deviance and justice are discussed and general theories of crime causality are examined. Special emphasis is placed on the components of the criminal justice system: the police, the prosecutorial and defense functions, the judiciary and the field of corrections. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 2000 - Professional Development in Criminal Justice

In this course, students will explore, examine, and reflect on their strengths, interests, and personality assessments as they relate to the criminal justice field and professional development. Participants will conduct career-related research and develop individualized action plans designed to bridge the gap between their current skills and experiences and those desired by employers in the criminal justice field. Prereq: UNIV 1110. Restriction: Restricted to Criminal Justice majors. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CRJU 2041 - Criminological Theory

This course examines the nature and causes of crime and policies within and outside the criminal justice system to predict, prevent, and correct criminal, delinquent, and deviant behavior. It involves a critical appraisal of biological, psychological, economic, and sociological theories and frameworks that explain crime, delinquency, and deviance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3100 - Research Methods

This course teaches students how to formulate research questions related to criminology and crime and justice. It addresses how to design research in the field, including choosing an appropriate method and sampling strategy and collecting, analyzing, interpreting, and reporting data and findings. Specific substantive elements are included in research design (e.g., various types of probability and non-probability sampling; strengths and weaknesses of surveys, interviews, and other methodological approaches; experimental and non-experimental designs; qualitative techniques; etc.) Other substantive topics are addressed, including research ethics, consuming research, and writing in different settings. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3150 - Statistics for Criminal Justice

This course introduces descriptive and inferential statistics and the use of computer software to analyze criminal justice data. Course content includes hypothesis testing and the basic analysis of continuous and discrete dependent variables related to criminology and criminal justice. Prereq: CRJU 3100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3160 - White-Collar Crime

Employs social science and legal approaches to examine crime committed by corporations as well as by individuals in white-collar occupations. Topics include how such crimes are socially defined, who commits them, which social contexts promote them, who is victimized, and how society and the criminal justice system respond. Cross-listed with CRJU 5574. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3220 - Community Corrections

This course focuses on innovative community-based strategies for dealing with criminal offenders. Correctional alternatives to imprisonment discussed in this course include probation and parole and various community programs, such as day reporting centers, electronic monitoring, half-way houses, and boot camp programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3250 - Violence in Society

This course surveys the relationships between mass media, crime, offenders, victims, and criminal justice. It explores how the criminal justice system and its agents, accused and convicted offenders, and victims, are portrayed in the media and the influence of these depictions on society, public policy, and the criminal justice system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3251 - Crime and the Media

This course surveys the relationships between mass media, crime, offenders, victims, and criminal justice. It explores how the criminal justice system and its agents, accused and convicted offenders, and victims, are portrayed in the media and the influence of these depictions on society, public policy, and the criminal justice system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3252 - Violent Offenders

This course consists of a historical overview of violence in American society. Course content includes an examination of violent crime rates over time, societal explanations for changes in rates and an examination of the theoretical causes and preventative strategies for acts of violence. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3270 - Case Studies in Criminal Justice

This seminar examines the lives of people who live on the margins of a society that perceives them as outsiders. Ethnographic studies that utilize observation, participant observations, and interviews as their primary research methodology are assigned in order to develop a critical understanding of the social marginalization and cultural aspects of the lives of real human beings living constantly on the edge of the law. Cross-listed with CRJU 5270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3280 - Trauma Among Correctional Populations

This course provides a comprehensive overview of trauma and the relationship of trauma to criminal offending. Topics includes the definition of trauma, the impact of trauma on development, lifelong consequences of chronic exposure to adverse events, and how to integrate knowledge about trauma into organizational policies in correctional settings. The class focuses on understanding the components of a trauma-responsive environment in correctional settings and incorporating trauma recovery principles into practice. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3285 - Trauma in the Criminal Justice System

This course examines trauma as widely prevalent among those who are served by the criminal justice system and experienced disproportionately among criminal justice professionals. Trauma prevalence, theory, prevention, and interventions through a trauma stewardship lens for victims of multiple forms of trauma, including vicarious traumatization and secondary traumatic stress, will be emphasized through an all-inclusive view across the criminal justice continuum. Cross-listed with CRJU 5285. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3290 - Capital Punishment

This course examines in-depth a comprehensive range of issues surrounding capital punishment. Specifically, it looks at the history of capital punishment, methods of execution, legal issues and case law, deterrence, miscarriages of justice, discrimination in the capital charging and sentencing system, and the role of the death penalty internationally. The coverage of these issues relies on many sources, including scholarly readings, non-fiction books, court cases, websites, videos and documentaries, speeches, and media. Cross-listed with CRJU 5290. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3310 - Contemporary Issues in Law Enforcement

This course examines law enforcement's role in contemporary society and the impact of police interaction on other segments of the criminal justice system. Special attention is paid to controversies related to police training and education, career development and community relations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3320 - Police-Community Relations

This course focuses on the police and community response to crime. Course content includes an overview of the major concepts and issues involved in what many consider to be a major fundamental shift in the approach and operations of modern policing. The origins, meaning, development and experiences of community policing and various assessments of the advantages and disadvantages of community policing are emphasized. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3330 - Serial Killers

This course looks at various aspects of serial killing, including definitions, statistics, and demographics of serial killers and their victims. It examines factors that are correlated with serial killing, as well as criminal justice responses to serial killers (e.g., investigative techniques, prosecuting and defending accused killers, etc.) It also includes cases of serial killers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3410 - Probation and Parole

This course is appropriate for students who have a specific interest in the role of probation and parole as correctional sanctions in community settings. Substantive topics, including the presentence investigation report, privatization, and the roles and responsibilities of probation and parole officers, are discussed. Particular attention is paid to research on the effectiveness of probation and parole, factors that contribute to the successful completion of probation and parole, and the role that the community and citizens play in these community corrections processes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3420 - Pleas, Trials and Sentences

This course analyzes case materials involving pleas, trials, and sentences. Course content includes the dimensions of criminality, the specific elements of major crimes, plea bargaining, the use of confessions, fair trial procedures, and various aspects of criminal sanctions, including cruel and unusual punishments. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3510 - Drugs, Alcohol, and Crime

This course looks at the socially constructed nature of drugs and drug policy. It explores the connection between drugs and crime within the socio-historical context of contemporary U.S. drug policy. Special emphasis is placed on the relationship between drugs and alcohol abuse and criminal offending, including the criminal justice system responses to possessing, distributing, and using illegal substances. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3520 - Juvenile Justice

This course examines the development, change, and operation of the American juvenile justice system and the social factors that shape the identification and treatment of juvenile offenders. Special emphasis is placed on juvenile law and methods of dealing with youthful offenders. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3530 - Juvenile Delinquency

This course looks at deviant and delinquent behavior committed by minors in American society. It explores the social construction of juvenile delinquency and factors and conditions contributing to at-risk and delinquent behavior. Finally, it examines the control and treatment of juvenile offenders prevention programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3540 - Crime and Delinquency Prevention

This course provides students with an overview of issues related to crime and delinquency prevention, both from criminological and criminal justice points of view. Crime prevention programs that encompass both the individual and community levels are examined. Responses to juvenile offenders-ranging from prevention and diversion to institutional corrections and after care are explored in context of youth policy generally. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 3575 - Offenders With Mental Health Disorders

Examines the offender who may be mentally disordered. Special attention is paid to the various phases of the criminal justice system where psychiatrists are involved (e.g., diversion, fitness, insanity and sentencing), dangerous sex offender legislation, "not guilty by reason of insanity" and "guilty but mentally ill" statutes, and issues concerning confidentiality, informed consent, and treatment. Cross-listed with CRJU 7575 and 5575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4010 - Public Service in Emergency Management and Homeland Security

Introduces emergency management and homeland security including: management of hazards, emergencies, disasters, and the networks of government and nonprofit organizations providing services. Focuses on principles of emergency management and homeland security at state and local jurisdictional levels. Cross-listed with PUAD 4010, PUAD 5650, and CRJU 5650. Prereq: CRJU 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4012 - Principles of Emergency Management

Introduces the discipline and practice of emergency management. Topics include administrative practice and processes by which public policy shapes governmental responses to hazards, emergencies, and disasters. Cross-listed with CRJU 5655, PUAD 4012, and PUAD 5655. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4015 - Intelligence Writing and Briefing

This course provides an overview of intelligence analysis and aims to provide the skills and tools necessary to effectively communicate results to consumers. Students will be familiarized with the analytical, perceptual, and cognitive pitfalls of conducting intelligence analysis and learn a variety of strategies for overcoming these problems, preparing professional intelligence products, and presenting executive-level intelligence briefings. Cross-listed with CRJU 5015. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4042 - Corrections

This course consists of an overview of the field of penology and corrections. Attention is paid to conflicting philosophies of punishment, criminological theory as it applies to the field of corrections, the selectivity of the process through which offenders move prior to their involvement in correctional programs, institutional corrections, alternative correctional placements, and empirical assessments of the short and long-term consequences of one's involvement in correctional programs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4043 - Law Enforcement

This course presents an overview of the role of police in the United States. Attention is placed on the origins of policing, the nature of police organizations and police work, patterns of relations between the police and the public, discretion, and the police role in a sociological context. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4044 - Courts and Judicial Process

This course examines the basic functions, structure, and organization of the federal and state court systems, with special attention on the criminal court system. It looks at the courtroom

workgroup and agents within it, including the prosecutor, defense attorney, and judge. It focuses on the influence of judicial behavior on the court process by examining judges' policy preferences, legal considerations, group processes within courts, and courts' political and social environments. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4100 - Administration of Criminal Justice

Analyzes the policies and practices of agencies involved in the criminal justice process, from the detection of crime and arrest of suspects through prosecution, adjudication, sentencing and imprisonment, to release. The patterns of decisions and practices are reviewed in the context of a systems approach. Cross-listed with CRJU 5100. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4120 - Race, Class, and Justice

This course examines the relationships between race, social class, and crime. Attention is given to theoretical explanations, empirical research, and patterns of criminal behavior. The class focuses on historical frameworks that are relevant to current perspectives on the impact and interactions of race, class, and crime in the field. It examines race, class, and race-by-class disparities and discriminatory practices at different phases of the justice system from detention through sentencing and appeals. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4121 - Ethics in Criminal Justice

This course is designed to prepare students to identify and critically examine ethical issues in the criminal justice system by applying ethical decision models. It also provides students with the opportunity to analyze how they would resolve these issues according to their own values and beliefs while staying within the boundaries of the law and formal and informal professional ethics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4130 - Poverty, Crime, and Justice

This course analyzes theories and empirical research related to the causes of criminal behavior committed by individuals of lower socio-economic status. Further, it examines the economic and social costs of crimes committed by under-resourced individuals and crime-prevention strategies that are connected to crimes committed by under-resourced individuals. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4140 - Domestic Violence and Crime

This course examines the criminal justice systems response to intimate partner violence by focusing on the interactions between victims, offenders, and components of the criminal justice system. By exploring the dynamics of intimate partner violence, this course addresses the

theories, history, research, legislation, and policy implications related to the criminal justice system's response to intimate partner violence. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4150 - Sex Offenders and Offenses

This course explores historical and current practices of the criminal justice system to address sex offenders and offenses. Topics include the history of sexual abuse, etiology of offenders, victims' issues, juvenile sex offenders, risk assessment, and treatment/supervision approaches to sex offenders and offenses. Prereq: CRJU 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4170 - Victimology

This course involves the scientific study of crime victims and focuses on the physical, emotional, and financial harm people suffer at the hands of offenders. Emphasis is placed on victim-offender relationships, interactions between victims and the criminal justice system, and connections between victims and other social groups and institutions. Theories, history, research, legislation, and policy implications related to the social construction of "the victim" are explored. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4171 - Homicide Studies

This class examines criminal homicide from all angles: the offenders, the victims, the police, prosecution, defense, jurors, and judges. It looks at investigative techniques and the latest science involved in criminal investigation, jury selection, and other criminal justice system issues. It focuses on what is arguably the most serious form of homicide, murder, exploring sensational cases that involve delving into the psyche of murderers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4180 - Comparative Study of Criminal Justice Systems

This course analyzes the dynamics of criminality and the social responses to crime across countries. Special emphasis is placed on methods of comparative legal analysis utilized to examine international differences in crime and justice, international cooperation in criminal justice, and crime and development. Prereq: CRJU 1001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4190 - Women, Crime, and Justice

This course explores issues surrounding women as offenders and victims. It investigates explanations for women's involvement in illegal activities and looks at gender-based disparities and discrimination in the criminal justice system's treatment of women who are accused and convicted of crimes. The class also examines women's participation in criminal justice

professions, including law enforcement, corrections, judicial processes, and law. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4200 - Wrongful Convictions

Explores the continuum of justice-system errors ranging from persons who are falsely accused (arrested, prosecuted, and tried) to those who are wrongly convicted and imprisoned or sentenced to death row and erroneously executed. Cross-listed with CRJU 5200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4210 - Prisoner Reentry

Focuses on prisoner reentry, including strategies to prepare inmates for release, reduce recidivism, and facilitate adjustment in the community while meeting the demands of public safety. Cross-listed with CRJU 5210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4230 - Treatment Approaches in American Corrections

This course examines the origins and historical development of prisons and jails in America. Particular attention is given to the impact of reform movements; the rise of centralized correctional systems; and regional and other socially differentiated variations in the practice of punishment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4252 - Criminal Offenders: Evidence-Based Decision-Making

This course will introduce the core principles of evidence based programming and tools of motivational interviewing as it is used currently with the offender population. In addition, students will learn how to utilize these skills working with specific offender populations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4310 - Leadership Roles in Criminal Justice

The course is designed to enhance interest, experience, and knowledge in leadership that promotes professionalism and ethical behavior among criminal justice professionals. Individual and organizational dynamics are explored through a critical perspective, focusing on criminal justice roles and responsibilities. The class teaches effective leadership skills in areas such as team building, strategic planning, and decision-making. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4331 - Crime Analysis and GIS

Serves as an introduction to the uses and applications of analysis within law enforcement, including the role of analysis in law enforcement, theories that guide analysis and police practices, commonly used data sources and technology, and techniques for various types of

analysis utilized in law enforcement. Cross-listed with CRJU 5331. Max Hours: 3 Credits.

Semester Hours: 3 to 3

CRJU 4410 - Criminal Law and Constitutional Procedures

This course focuses on substantive criminal law and constitutional rights of the accused in criminal proceedings. Course content includes the legal elements of major crimes. It also addresses legal aspects of investigation, search and seizure, arrest, custodial interrogation, the appointment of counsel, and constitutional rights that apply during trials (e.g., right to confront witnesses, be protected against self-incrimination, be tried by a jury of one's peers, etc.) Rules governing the admissibility of evidence in court are also examined. Max hours: 3 Credits.

Semester Hours: 3 to 3

CRJU 4430 - Law and Society

This course introduces students to the scholarly study of law. Students will become familiar with social scientific perspectives of the law, legal institutions, the legal process, and the impact of law on behavior. Particular emphasis is placed on the interplay between the social construction of crime through law, criminal behavior and individuals targeted in criminal justice processes in America. Additional topics include theories of law and legality, comparative legal systems, police, lawyers, judges, juries, and the use of social science expertise in the justice system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4440 - Courts and Social Policy

This course involves the study of emerging trends and issues in the administration of the courts, the emerging role of the judiciary in the administration of programs in the public and private sectors, and the implications of court administration on social policy. Course content includes the history of the judicial approaches to the criminal justice administrative process and substantive social policy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4450 - Homeland Security

This course is an in-depth analysis of homeland security in the U.S. Topics include the initial concepts and strategies of securing land borders, seaports, and airports, the establishment of the Department of Homeland Security, and the functions and operations of the DHS today and in the future. Prereq: Completion of CRJU 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4520 - Gangs and Criminal Organizations

This course traces the origins and historical development of the activities known as "organized crime." These crimes are some of the most dangerous to American society and range from the commonly known offenses of gambling and narcotics to the more subtle and sophisticated, less

understood but equally serious, crimes of extortion, commercial bribery, and political corruption. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4530 - Families and Intergenerational Violence

This course focuses on the family as the primary institutional mechanism of social control. Structured around social learning theory, it explores the relationships between exposure to childhood violence and violence later in life, including dating relationships during adolescence and adulthood and violence in marital relationships. The course also looks at the impact of childhood violent victimization on juvenile delinquency, adult criminality, and violent behavior in general. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4540 - Evidence-Based Approaches in Law Enforcement

This course provides an introduction to the uses and applications of analysis within law enforcement, including the role of analysis in law enforcement, theories that guide analysis and police practices, commonly used data sources, technology, and a practical introduction to the techniques for various types of analysis utilized in law enforcement. Prereq: CRJU 1000, 3100, and 4043. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4600 - Special Topics in Criminology and Criminal Justice

This highly specialized seminar addresses cutting-edge and emerging developments in the fields of criminology and criminal justice and provides students and faculty with the opportunity to explore significant themes, issues, and problems from a broad interdisciplinary perspective. Topics vary from semester to semester. Prereq: CRJU 1000. Repeatable. Max Hours: 18 Credits. **Semester Hours:** 3 to 3

CRJU 4700 - Community-Based Field Experience and Seminar

Students work in small groups to complete substantive projects for government agencies and community organizations, led by faculty instructor. Topics addressed will vary depending on the needs of the community partner. Prerequisite: Completion of CRJU 1000 and CRJU 3100. Restriction: Restricted to SPA students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4710 - Environmental Crime and Justice

Environmental Crime and Justice will look at the disproportionate benefits and burdens of environmental "profits" (e.g., open spaces, clean air and water, etc.) and contamination (which results from behaviors that include, but are not limited to crime), as well as the implications of these disparities on certain areas, particularly communities of color and indigenous communities. The role of the government, the private sector, non-profit organizations, and the environmental justice movement in creating, perpetuating, and minimizing environmental crime and its disparities will be examined, with part of the focus being on theories within

critical criminology that address issues of environmental crime injustices. The nature of environmental offenders and victims will be explored. Policies and programs that have been organized to address environmental crime and other injustices and their effects (e.g., quality of life, birth defects, childhood asthma, lead poisoning, cancer, etc.) will be reviewed, including responses by the criminal justice system to environmental crime. Students will examine critically the consistencies and inconsistencies in institutionalized mechanisms that are set up, either intentionally or more subtly, to create, reinforce, or minimize environmental crimes and injustices. Cross-listed with CRJU 5710. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 4840 - Independent Study: CRJU

This course consists of instructor-guided research in an area of mutual interest to the student and instructor or a student-driven project supervised by the instructor. Students are responsible for selecting their area of inquiry prior to contacting the instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CRJU 4939 - Internship

Internships involve a career-related supervised experiential course in a criminal justice or related agency. Permission to enroll must be preceded by an application for an internship. Prereq: Permission of instructor and advisor is required for undergraduate students. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

CRJU 5001 - Criminal Justice Systems, Policies, and Practice

Examines current critical issues in the justice system affecting law enforcement, courts, corrections, and recent social developments related to personnel. The development, implementation, and analysis of public policy in the field of criminology are explored in depth. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5002 - Criminological Theory

Explores the origins of criminal behavior and impact of crime on society. Theories of deviant, delinquent, and criminal behavior are examined, and practical implications and application of theoretical constructs are analyzed through current research paradigms and empirical research. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5003 - Research Methods

Examines applied research designs and analytical models. Research problems in the system are utilized to illustrate the application and interpretation of alternative research strategies. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5004 - Statistics for Criminal Justice

Introduces principles of descriptive and inferential statistics and provides tools for understanding research findings. Topics include hypothesis testing and point estimation; bivariate and multivariate measures of association; inferential statistics; ordinary least square regressions, logistic regression analyses. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5005 - Law & Society

Introduces a variety of topics related to the functions and societal implications of law. The course focuses on social/ legal theory and analyzes law and legal institutions from a critical perspective. Materials provide content on how to evaluate law and legal institutions, especially in relation to equality, justice, and fairness. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5010 - Seminar Nonprofit Management

Provides an overview of principles and concepts unique to nonprofit management. Topics include executive management, funding diversity, human resource management, marketing, volunteer management and ethics. Students also are introduced to the history and importance of the nonprofit sector. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 3110 and 5110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5015 - Intelligence Writing and Briefing

This course provides an overview of intelligence analysis and aims to provide the skills and tools necessary to effectively communicate results to consumers. Students will be familiarized with the analytical, perceptual, and cognitive pitfalls of conducting intelligence analysis and learn a variety of strategies for overcoming these problems, preparing professional intelligence products, and presenting executive-level intelligence briefings. Cross-listed with CRJU 4015. Restriction: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5100 - Administration of Criminal Justice

Analyzes the policies and practices of agencies involved in the criminal justice process, from the detection of crime and arrest of suspects through prosecution, adjudication, sentencing and imprisonment, to release. The patterns of decisions and practices are reviewed in the context of a systems approach. Cross-listed with CRJU 7100 and CRJU 4100. Restriction: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5140 - Nonprofit Financial Management

Provides a grounding in financial management for the "non-accountant" by focusing on an array of knowledge and management skill areas necessary for allocating and controlling resources and for analyzing, reporting and protecting the fiscal health of the organization. Topics include key accounting principles, understanding and using financial statements, the budget development process, cash flow analysis, banking relationships, using the audit report, maximizing investment policy and strategy, and understanding the boundaries of tax exemption. Cross-listed with PUAD 4140 and 5140. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5150 - Domestic Violence and Crime

This course examines the criminal justice systems response to intimate partner violence by focusing on the interactions between victims, offenders and the individual components of the criminal justice system. By exploring the dynamics of intimate partner violence this course addresses the theory, history, research, legislation and policy implications related to the criminal justice system's response to violence against women. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5220 - The American Jury System

Examines historical and current issues in jury decision making and dynamics. The course explores issues such as jury size, eyewitness testimony, and jury reform. Court decisions are examined as a comprehensive understanding of jurors and their role. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5240 - Gang Patterns and Policies

Focuses on gangs, gang members, and gang activity in the United States. Topics include the origins and historical development of gangs, gang migration, gang related crime and violence, gang victimization, and the effects of gang involvement on communities and families. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5250 - Criminal Offenders

Introduces the core principles and tools of motivational interviewing as it is used currently with the offender population. Students learn how to utilize these skills working with specific offender populations and how to motivate these often resistive clients to change their thinking patterns and behaviors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5260 - Crime and Literature

This seminar focuses on nonfiction literature as it relates to criminality and the criminal justice system. Samples of social commentary, biographies/autobiographies, and other accounts presented within various types of nonfiction literature are examined in order to more fully understand and appreciate their impact in shaping public opinion of the criminal justice system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5270 - Case Studies in Criminal Justice

This seminar examines the lives of people who live on the margins of a society that perceives them as outsiders. Ethnographic studies that utilize observation, participant observations, and interviews as their primary research methodology are assigned in order to develop a critical understanding of the social marginalization and cultural aspects of the lives of real human beings living constantly on the edge of the law. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 3270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5285 - Trauma in the Criminal Justice System

This course examines trauma as widely prevalent among those who are served by the criminal justice system and experienced disproportionately among criminal justice professionals. Trauma prevalence, theory, prevention, and interventions through a trauma stewardship lens for victims of multiple forms of trauma, including vicarious traumatization and secondary traumatic stress, will be emphasized through an all-inclusive view across the criminal justice continuum. Cross-listed with CRJU 3285. Restriction: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5290 - Capital Punishment

This course examines in-depth a comprehensive range of issues surrounding capital punishment. Specifically, it looks at the history of capital punishment, methods of execution, legal issues and case law, deterrence, miscarriages of justice, discrimination in the capital charging and sentencing system, and the role of the death penalty internationally. The coverage of these issues relies on many sources, including scholarly readings, non-fiction books, court cases, websites, videos and documentaries, speeches, and media. Cross-listed with CRJU 3290. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5301 - Crime and the Media

Surveys the relationship between mass media and the U.S. criminal justice system. Special attention is given to the role of media in the social construction of reality. Emphasis is placed on the application of social constructionism to criminal justice related social problems. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5320 - Police Administration

Considers the major issues confronting police executives, such as professionalism, recruitment, selection, training, deployment, innovation, evaluation, and charges of brutality, inefficiency, and corruption. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5331 - Crime Analysis and GIS

Serves as an introduction to the uses and applications of analysis within law enforcement, including the role of analysis in law enforcement, theories that guide analysis and police practices, commonly used data sources and technology, and techniques for various types of analysis utilized in law enforcement. Cross-listed with CRJU 4331. Max hours: 3 Credits.

Semester Hours: 3 to 3

CRJU 5361 - Capstone Seminar

Synthesizes competencies gained throughout the course of study into a client-based research project. Students conduct independent research, complete a final written project demonstrating their qualifications and expertise, and orally present findings to a committee of faculty and criminal justice professionals. Prereq: CRJU 5000, CRJU 5100, CRJU 5120, CRJU 5321. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5391 - Sex Offenders and Offenses

Focuses on challenges practitioners face in managing sex offenders, including the development of programs and partnerships that can effectively assess, track, control, and treat sex offenders through all phases of the system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5410 - Victimology

Examines victim-offender relationships, interactions between victims and the criminal justice system, and connections between victims and other social groups and institutions among various populations. The course addresses the theory, history, research, legislation and policy implications related to the social construction of "the victim." Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5420 - Violence in Society

This course examines various aspects of violence, including distribution over time and space; situations and circumstances associated with violent victimization and offending; and how social institutions, community structure, and cultural factors shape violent events. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5430 - Drugs, Alcohol, and Crime

This course provides an interdisciplinary overview of theory, research and policy issues surrounding the relationship between drugs, alcohol and crime, and responses of the criminal justice system. Special attention is paid to the socially constructed nature of illegal substances and connections with U.S. drug policy. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5510 - Contemporary Issues in Law Enforcement

Examines current thinking and experience with respect to changing and reforming police programs and practices. The course focuses primarily on the American police experience, reviewing major innovations, exploring their rationale, and examining organizational impediments to their implementation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5520 - Corrections

Examines the development and implementation of correctional systems in America. Topics include the origins of correctional efforts and the evolution of the prison system, punishment and rehabilitation rationales in the context of sentencing models, the social organization of the prison, including inmate subcultures and staff work strategies, and the inmates' rights movement and the impact of judicial intervention in correctional settings. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5530 - Community Corrections

Analyzes theories and practices of probation and parole, responses of paroling authorities to public pressures and court controls, and their implications for rehabilitation. Efforts to bridge institutional settings and community life, as well as the feasibility and effectiveness of treating individuals under sentence in the community, are reviewed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5540 - Juvenile Justice

Examines policies and practices of agencies in processing youthful offenders through the juvenile court system, reviews trends in juvenile justice policymaking, and assesses changes in response to juvenile crime by both the juvenile justice and criminal justice systems. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5550 - Criminal Justice Policy and Planning

Provides a survey of conceptual and design strategies in criminal justice policy analysis. The logic and rationale of these various strategies are contrasted, and their relative merits are critiqued. Selected policy issues in the criminal justice system are utilized to illustrate the application and interpretation of alternative strategies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5551 - Courts, Law & Justice

Analyzes judicial organization, court administration, and criminal court judicial decision making practices within the context of the broader operation of the criminal justice system. Special attention is paid to the social organization of the courtroom, examining the special roles of judges, prosecutors, and defense attorneys. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5552 - Criminal Justice Ethics

Offers a normative framework within which to explore ways to increase sensitivity to the demands of ethical behavior among criminal justice personnel. The application of a normative perspective enhances the possibility that moral problems are better understood, more carefully analyzed, and rendered more tractable. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5553 - Women, Crime, and Justice

Explores issues surrounding women as offenders, victims, and criminal justice professionals. Investigates explanations for the involvement of women in illegal activities. Analyzes the plight of battered women, rape victims, and other female victims. Examines the participation of women in law enforcement judicial processes, corrections, and lawmaking. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5555 - Profiling Criminal Behavior

Examines the dynamics of individual criminal acts utilizing inductive and deductive methodology to profile criminal behavior, offender characteristics, crime scene investigation, evidence collection, and case linkage of specific categories of crimes. Topics include homicide, serial crime, stalking. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5571 - The Social Organization of Crime

Explores the relationship between neighborhood social disorganization and crime from a social ecology perspective. The course examines the underlying social causes of phenomena such as criminal victimization, violent and property crime, neighborhood fear, neighborhood deterioration, and recidivism. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5572 - Race, Crime, and Justice

Examines the influence of race in the administration of justice. Special attention is paid to the policy implications of racial disparities in the criminal justice system. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5574 - White Collar Crime

Employs social science and legal approaches to examine crime committed by corporations as well as by individuals in white-collar occupations. Topics include how such crimes are socially defined, who commits them, which social contexts promote them, who is victimized, and how society and the criminal justice system respond. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 3160. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5575 - Offenders With Mental Health Disorders

Examines the offender who may be mentally disordered. Special attention is paid to the various phases of the criminal justice system where psychiatrists are involved (e.g., diversion, fitness, insanity and sentencing), dangerous sex offender legislation, "not guilty by reason of insanity" and "guilty but mentally ill" statutes, and issues concerning confidentiality, informed consent, and treatment. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 7575 and 3575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5576 - Social Science in the Criminal Justice System

Examines the use of social science as a tool for legal analysis within the criminal justice system. The course examines how social science research is used to resolve relatively simple factual disputes, then moves on to more complex issues that arise when social science is invoked to make or change law. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5644 - Environmental and Hazards Law

This course provides a broad overview of issues in all hazards management as well as natural resource and environmental health law. It will convey knowledge of the statutes, regulations and court decisions governing the management of hazards by governmental agencies. The course will also cover aspects of environmental policy implementation and enforcement including the legal aspects of natural resource allocation and management and environmental protection. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5644. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5650 - Public Service in Emergency Management and Homeland Security

Introduces emergency management and homeland security including: management of hazards, emergencies, disasters, and the networks of government and nonprofit organizations providing services. Focuses on principles of emergency management and homeland security at state and local jurisdictional levels. Restrictions: Restricted to Graduate and Graduate Non-Degree majors

within CU Denver. Cross-listed with PUAD 4010, PUAD 5650, and CRJU 4010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5655 - Principles of Emergency Management

Introduces the discipline and practice of emergency management. Topics include administrative practice and processes by which public policy shapes governmental responses to hazards, emergencies, and disasters. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5655, PUAD 4012, and CRJU 4012. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5710 - Environmental Crime and Justice

Environmental Crime and Justice will look at the disproportionate benefits and burdens of environmental "profits" (e.g., open spaces, clean air and water, etc.) and contamination (which results from behaviors that include, but are not limited to crime), as well as the implications of these disparities on certain areas, particularly communities of color and indigenous communities. The role of the government, the private sector, non-profit organizations, and the environmental justice movement in creating, perpetuating, and minimizing environmental crime and its disparities will be examined, with part of the focus being on theories within critical criminology that address issues of environmental crime injustices. The nature of environmental offenders and victims will be explored. Policies and programs that have been organized to address environmental crime and other injustices and their effects (e.g., quality of life, birth defects, childhood asthma, lead poisoning, cancer, etc.) will be reviewed, including responses by the criminal justice system to environmental crime. Students will examine critically the consistencies and inconsistencies in institutionalized mechanisms that are set up, either intentionally or more subtly, to create, reinforce, or minimize environmental crimes and injustices. Cross-listed with CRJU 4710. Restriction: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5720 - Public Policies for Hazards and Disasters

Examines public policymaking and administration related to homeland security and disasters in the United States, including the interplay between security and traditional hazards management concerns. Assesses the role of institutional processes, governmental and nongovernmental organizations in policy development and implementation. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5910 - Nature and Scope of Interpersonal Violence

Analyzes the social, historical, political, legal, and psychological aspects of gender-based violence. Topics include definitions of the problem, demographics, children and youth exposure, and national and global perspectives. Strategies for prevention, intervention,

treatment, and social change are explored. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5910. Max hours: 3 Credits.

Semester Hours: 3 to 3

CRJU 5920 - The Psychology of Interpersonal Violence

Addresses the contributions and limitations of current empirical and clinical psychological literatures on interpersonal violence (IPV). Special attention is paid to the effects of IPV on adult and child survivors, their psychological needs, and the contribution of psychological knowledge to understanding and addressing the problem of IPV. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5920. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5930 - Interpersonal Violence Law and Public Policy

Examines public policy and law related to interpersonal violence (e.g., welfare reform, child maltreatment, criminal and civil court responses). Topics include the role of law enforcement agents, victim advocacy, and methods to change law and policy. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5930. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 5940 - Interpersonal Violence Leadership, Advocacy, and Social Change

Examines different models of social change and various approaches to public address, including social movements and campaigns. Strategies for engaging diverse individuals, systems and communities to address interpersonal violence will be emphasized. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 5940. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 6171 - Homicide Studies

This class examines criminal homicide from all angles: the offenders, the victims, the police, prosecution, defense, jurors, and judges. It looks at investigative techniques and the latest science involved in criminal investigation, jury selection, and other criminal justice system issues. It focuses on what is arguably the most serious form of homicide, murder, exploring sensational cases that involve delving into the psyche of murderers. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 6600 - Special Topics in Criminal Justice

Specialized seminar intended to provide students and faculty with the opportunity to explore significant themes, issues, and problems in the field of criminal justice. Topics vary from semester to semester. Course may be taken for credit more than once, provided subject matter

is not repeated. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max Hours: 18 Credits. **Semester Hours:** 3 to 3

CRJU 6840 - Independent Study: CRJU

Affords the student the opportunity to pursue creative research activities under the individual supervision of a full-time faculty member. No more than six semester hours of credit for independent study may be applied toward the MCJ degree. MCJ Prereq: 12 semester hours of criminal justice course work and permission of instructor. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max Hours: 9 Credits.

Semester Hours: 1 to 3

CRJU 6910 - Internship in Criminal Justice

For students who have not had practitioner experience, a full- or part-time internship is required. Note: Masters students must have completed a minimum of 18 credit hours at the graduate level to take this course. Dual Degree students must have completed a minimum of 6 credit hours at the graduate level. Minimum cumulative GPA of 3.0 required to take this course. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CRJU 6950 - Master's Thesis

Independent original research project supervised and evaluated by a thesis committee. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 6

CRJU 8840 - Independent Study

Affords the student the opportunity to pursue creative research activities under the individual supervision of a full-time faculty member. No more than six semester hours of credit for independent study may be applied toward the PhD degree. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

CRJU 8990 - Doctoral Dissertation

Upon admittance to candidacy, students must be continuously registered for dissertation credit each fall and spring semester or be automatically dropped from the program. Students must register for 7.0 credit hours per semester. In cases where students will not be using any university resources during a particular semester, they may petition the PhD director to register for only 3.0 credit hours to maintain continuous enrollment. Students must be registered for dissertation credit during the semester they have a colloquium or defense. Restrictions:

Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

Cultrly & Lingstcly Dvrse Educ

CLDE 1000 - Language, Identity, & Power: International Perspectives

This course explores the relationship between language, identity, and power in various international contexts. The course considers how legacies of inequality for particular communities are reflected in societal attitudes about languages and language users and subsequent language planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 1030 - Introduction Language Development of Multilingual Learners

This course provides an overview of how languages are learned and used in day-to-day life. It focuses on the complexities and variations in registers, dialects and languages as an essential part of human communication in the context of power and privilege in the larger society. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 2000 - CLDE Foundations

This CLDE foundations course includes an overview of history and legislation related to bilingual education and second language education, and provides an overview of essential linguistics for educators and bilingual language development and assessment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 3680 - Spanish for Educators

This course is designed to help teacher candidates advance their Spanish skills. Teacher candidates will clarify their motivations and purposes for studying Spanish and gain a greater understanding of language assessments and of their own Spanish abilities and increase insight and empathy for emergent bilingual students. Cross-listed with CLDE 5680. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 3830 - Culturally and Linguistically Responsive Teaching through STEM

In this course, you will develop your ability to plan for the opportunities and challenges for language development during science and math learning in preK-12 education settings. In doing so, you will develop linguistically responsive teaching practices for all subjects. Prereq or coreq: EDHD 3930 and SPED 4030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 3840 - Independent Study in CLDE

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

CLDE 4020 - Responsive Classroom Communities

This course investigates how people learn and the implications of social and cultural learning for establishing engaging and culturally responsive learning communities. Through this course teacher candidates will better understand their roles in student learning and how their own cultural lenses impact their relationships with students and families, and influence student success in the classroom. Cross-listed with CLDE 5020. Prereq: EDFN 4010. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours or students in the Education Minor EDST-MIN or CLAS secondary students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 4030 - Language Development of Multilingual Learners

This course is designed to help future teachers understand language as a social process and how to support multilingual language development in classrooms. The focus is on both monolingual and bilingual language development as well as the development of multiliteracies in children. Restriction: Restricted to students in Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 4700 - Social Studies for Multilingual Learners

Participants will use a social justice lens to investigate the content and language demands of the four disciplines of social studies: History, Civics, Geography and Economics. This class focuses on Social Studies methods as well as essential practices for teaching multilingual students. Restriction: Restricted to students in Education and Human Development with between 40 and 180 cumulative credit hours. Cross-listed with CLDE 5700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 4800 - Language Development and Acquisition

This academy provides a basic introduction to bilingual and English as a second language education programs. The content consists of introductory material regarding second language acquisition theories and stages, factors that influence learning a second language in schools and informal assessment among other. Repeatable. Max Hours: 5 Credits. **Semester Hours:** 1 to 5

CLDE 4820 - Teaching Multilingual Learners

This course is designed to help future teachers develop strategies to support the language, academic and identity development of bilingual/multilingual students. This is an applied course, where teachers experiment with and reflect upon teaching practices. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5000 - CLDE Portfolio Bridge

Class participants review CLDE content from previous teacher license classes, fill in gaps in knowledge related to CLDE teacher preparation standards, and compile a portfolio which shows their proficiency in the CLDE standards. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5001 - Content Bridge in Culturally and Linguistically Diverse Education

This class includes four investigations that address challenging problems in Culturally & Linguistically Diverse Education. Participants complete guided activities and independent research to create a solution or approach to the problems. The four assignments apply to the CLDE endorsement portfolio. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5010 - Foundations of Language & Culture in Education

Designed for veteran and novice teachers to gain an understanding of schooling and language education. Participants examine key social theories based on the writings of important scholars in the field, on topics such as the politics of race, schooling, language, and cultural identity. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5020 - Responsive Classroom Communities

This course investigates how people learn and the implications of social and cultural learning for establishing engaging and culturally responsive learning communities. Through this course teacher candidates will better understand their roles in student learning and how their own cultural lenses impact their relationships with students and families, and influence student success in the classroom. Cross-listed with CLDE 4020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5030 - Language Development of Multilingual Learners: Advanced

This course offers a deep investigation of the relationship between language and literacy acquisition. In the context of first and second language development across the lifespan, the course focuses on bilingual and second language development, and on the acquisition of literacy by young children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5032 - English Linguistic Foundations for SLA & TESOL

Investigates Second Language Acquisition (SLA) theories and new developments in the field relevant to adult learners of English, factors that influence outcomes, and key structures in English grammar and pronunciation. Lab time with ESL learners involves teaching listening/speaking and applying grammar in writing. Max hour: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5035 - Connecting Multilingual Theories to Practice

This course supports students in synthesizing research and theory on learning and multilingual development, and identifying their own theoretical orientation in the field. There is a specific emphasis on connecting classroom practice to their theoretical stance. Prereq: CLDE 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5042 - Techniques for Teaching Adult ESL

This course provides principles of language assessment and progress monitoring strategies for teachers of adult ESL learners to help inform their practices and decisions related to appropriate instruction and placement of, and programming for, learners. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5050 - Assessment & Advocacy for Multilingual Learners

Students learn to gather and use assessment results within a strengths-based framework to advocate for appropriate programming, placement, instruction, and ongoing progress monitoring of multilingual students. Special attention is paid to linguistic and cultural bias in the field of assessment. Cross-listed with SPED 5050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5070 - Linguistic Analysis of English

A descriptive linguistic approach to English grammar with a functionalist view of language and discourse processing. The course examines the historical evolution of English from its origins and the impact this has had on its grammar and syntax. A critical applied linguistic perspective is included focusing on language variation and status. Provides a framework for understanding, identifying and describing the major features of English (in particular) and language (in general). Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5140 - Language, Culture & Educational Equity

Develops an understanding of the pluralistic and intersectional nature of U.S. society (race, class, gender, sexuality, language, migration status), and the role of the school within this social context. Examines the legal and cultural history of language education in Colorado and the U.S. as well as the impact of changing demographics on schools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5160 - History & Law of Bilingual & Immigrant Education

This course includes an overview of U.S. and Colorado history and legislation related to bilingual education and second language education, as well as current and historical immigration issues as they impact students, families, communities, schools, and educators. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5170 - Race, Class and Culture in Public Schools

This course will focus on understanding culture and diversity, recognizing the role of inherited power and privilege in both individual and institutional interactions and developing a philosophy of social justice and equity in education. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5190 - Culturally Responsive Pedagogy and Practices

This course focuses on developing practical tools for culturally responsive, inclusive instructional strategies, classroom management and curriculum and lesson planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5430 - Gender as Culture

Examines ways some implicit conceptual and value systems regarding gender are manifested in schools, homes and work places. Provides students with knowledge and insight from interdisciplinary scholarship of gender in society. Cross-listed with CLDE 7430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5680 - Spanish for Educators

This course is designed to help teacher candidates advance their Spanish skills. Teacher candidates will clarify their motivations and purposes for studying Spanish and gain a greater understanding of language assessments and of their own Spanish abilities and increase insight and empathy for emergent bilingual students. Cross-listed with CLDE 3680. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5700 - Social Studies for Multilingual Learners

Participants will use a social justice lens to investigate the content and language demands of the four disciplines of social studies: History, Civics, Geography and Economics. This class focuses on Social Studies methods as well as essential practices for teaching multilingual students. Cross-listed with CLDE 4700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5800 - Language Variation & Implications for Teaching

Provides an introduction to the field of educational sociolinguistics and research of classroom discourse. Students are introduced to the collection and analysis of oral and written language in educational contexts. Basic concepts and key issues regarding the form-function relationships of language use in instructional settings are discussed. Cross-listed with CLDE 7800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5810 - Literacy for Bilingual Learners offered for Student Teacher Residency (STR)

This course, for residents in the STR program, highlights the best practices for language and literacy development for culturally and linguistically diverse learners, including bilinguals, multilinguals, and speakers of non-standard varieties of English. Max hours: 3 Credits.

Semester Hours: 3 to 3

CLDE 5820 - Teaching Multilingual Learners, Advanced

This course focuses on the hands-on practical application of methods and techniques that support language, academic and identity development for bilingual learners. Course work includes critical perspectives on teaching techniques, investigations into the research on teaching techniques in multilingual education, as well as an emphasis on teachers taking leadership in the field of CLDE. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5824 - Theories and Methods of Bilingual Education

Prereq: Take at least one of the Spanish department courses that are also part of the Bilingual Specialist endorsement. These are: SPAN 5020, 5060, 5076, 5080, 5099, and 5980. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5825 - Methods of Content Teaching for Bilingual Learners

Provides an in-depth study of curriculum options for learners developing English in schools. Participants examine and apply strategies and materials for developing linguistic and academic capabilities of language learners, with optional extensions for bilingual program educators. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5827 - Developing Content Teaching Methods for Bilingual Learners through PLC

Through this flexible start course, students will synthesize the professional development work done through district offered e-workshops, and relate it to the literature on best practices for culturally and linguistically diverse classrooms. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5828 - Practitioner Inquiry into the Role of Language in Teaching

Participants will synthesize work done through eworkshops, and connect this practical professional development work to important scholarship in the broader field of education research, examining role of language, culture, and identity in teaching and learning. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5830 - STR Culminating Experience

This class provides support for students in the CLDE district-based teacher residency. Students create summaries of their year-long learning and reflect upon artifacts that show their learning in relation to the state standards in Culturally and Linguistically Diverse Education. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5835 - Special Topics: Literacy for Bilingual Learners

"This course prepares teachers to meet the specific language and literacy needs of bilingual learners. Students design literacy blocks and content lessons to engage and elevate the literacy of the diverse learners in their classrooms. This class is designed for CLDE endorsement district-based cohorts. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 0.5 to 3

CLDE 5840 - Independent Study: CLDE

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

CLDE 5850 - Culminating Experience: Bilingual Specialist

In this capstone, students compose a 3-5 minute video, plus provide artifacts from teaching and coursework with explanations of how these artifacts show mastery of CDE Standards 8.23 for Bilingual Education Specialist competencies. Prereq: Completion of CLDE endorsement AND 9 units in Bilingual Specialist pathway CLDE 5824, SPAN 5020, SPAN 5060, SPAN 5076, SPAN 5080, SPAN 5099, and 5980. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CLDE 5910 - Improving Student Outcomes: Interdisciplinary Inquiry

This course operates from three distinct disciplinary perspectives: urban planning (community and schools), education (quality teaching), and public policy (accountability). Students explore important factors related to improving K-12 student outcomes: resources, leadership, teaching and parent/community involvement from three disciplinary perspectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 5920 - Immigration through Children's Literature

This class explores themes of immigration and multilingualism by examining children's and young adult literature. Combines techniques for teaching literacy in multilingual environments with foundational themes in the study of immigration and multilingualism. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 6910 - Leadership Practicum in CLDE

This practicum course grants credit for field significant experiences, connected to the program of study and the Colorado standards for endorsement. Teachers who can engage in, synthesize,

and reflect on these experiences are eligible for this course credit. Max hours: 3 Credits.

Semester Hours: 3 to 3

CLDE 6912 - Teacher Inquiry in Multilingual Classrooms

This seminar provides opportunities for advanced students in the M.A. program to apply an inquiry lens to the concepts of CLDE. Students design an inquiry project, where they focus on a problem of practice, create an action research question, collect student work as data, and analyze findings and results. Students work in research teams, providing feedback and observing each other's classrooms. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 6950 - Master's Thesis

This class provides the opportunity for CLDE MA students to complete a Masters' thesis in place of the CLDE Culminating Experience. This class is open to students with advisor support and approval. Max hours: 4 credits **Semester Hours:** 4 to 4

CLDE 7090 - Research Seminar

An advanced course which focuses on specific issues in language, language acquisition and language teaching. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7210 - Introduction to Leadership for Latin@ Learners

In this introductory module, students will move beyond typical discussions of leadership that are neutral with regards to the students and families being served to one that puts linguistic and cultural diversity at the center of the discussion. Students will first survey the current state of Latin@s in education and communities from a local and national perspective. We will then co-construct a set of broad questions and examine theoretical frameworks that set the stage for the remaining courses in the program. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CLDE 7220 - Legal And Policy Foundations For Latin@ Students

This course is a comprehensive survey of the highlights and lowlights of federal, state, and local history, legislation and policy regarding the education and rights to education and language for Latin@ students. The readings and discussion are around various ideologies, philosophies, and theoretical underpinnings of education. In this class you will develop skills in critical consideration of the rights of all in US society and the responsibilities of the public institution of schools. As the performance assessment for this course you will have an opportunity to focus on a Colorado school district, community or community organization of your choosing. You will outline history, legislation, and policy for that site. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CLDE 7230 - Language and Literacy in Bilingual Learners

This course focuses on first and second language acquisition, and its impact on literacy in young children, elementary and secondary students, and students with special needs. Topics are literacy and language development, assessment, culturally responsive teaching, and school reform policies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7250 - Systems, Policy, and Advocacy in Latin@ Communities

This hybrid, 2-credit module introduces participants to methods of policy research and analysis across levels (federal, state, local) and the historical contexts behind key policies. Participants apply studied forms of policy analysis to investigate and engage with policies affecting their communities. Max hours: 2 Credits. **Semester Hours:** 2 to 2

CLDE 7260 - Synthesizing Research in Latin@ Learners and Community

In this final module, students will revisit the theoretical frameworks and research questions they have examined throughout their coursework and: a) identify a problem of practice and research questions they wish to explore in greater depth; b) identify theoretical framework(s) that will guide your research; and, d) develop a comprehensive literature review. Max hours: 1 Credit. **Semester Hours:** 1 to 1

CLDE 7410 - Communication & Control: Systemic Change

Examines educational settings -- classrooms, schools, school districts, corporate and clinical settings, church basements and community centers -- as systems, and explores strategies for change. Participants draw on interdisciplinary perspectives of individual and group behavior as they develop personal theories of change and apply these to their own situations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7430 - Gender as Culture

Examines ways some implicit conceptual and value systems regarding gender are manifested in schools, homes and work places. Provides students with knowledge and insight from interdisciplinary scholarship of gender in society. Cross-listed with CLDE 5430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7713 - Introduction to Language Policy

The legal, ideological, and historic foundations of language policies are examined. Also examined are connections with related topics such as language rights, language and power, and issues from the sociology of language, such as language loyalty. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7800 - Language Variation & Implications for Teaching

Provides an introduction to the field of educational sociolinguistics and research of classroom discourse. Students are introduced to the collection and analysis of oral and written language in educational contexts. Basic concepts and key issues regarding the form-function relationships of language use in instructional settings are discussed. Cross-listed with CLDE 5800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

CLDE 7840 - Independent Study: CLDE

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

Decision Sciences For Business

DSCI 3780 - Supply Chain Management

Over the last decade businesses have started to understand how the design and operation of their supplier network can be a source of competitive advantage. Supply chain management is concerned with the activities around communication, managing inventory, warehousing, transportation and facility location. The course objectives are to understand a supply chain/network from the strategic, planning and operations perspectives and to develop skills that allow you to analyze the responsiveness and effectiveness of the network. Prereq: DSCI 2010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSCI 6440 - Quality and Process Improvement

Studies the identification, measurement and improvement of quality and the practical management issues related to implementing quality systems within organizations. Topics include historic and contemporary views of quality, statistical quality control tools including Six SigmaSM, work design and measurement and process flow and design. Prereq: BUSN 6530 with a grade of "C" or better . Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSCI 6822 - Services Operations

Examines the unique issues involved in the management of service operations. Operations management principles specific to service industries are given in-depth. In addition, simulation is introduced as a technique for studying service industries. Prereq: BUSN 6530 or permission of instructor. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Design & Planning

DSPL 7011 - Research Design

Students are provided with a 'hands on' understanding of methodological issues to become both intelligent consumers of social science research and competent producers of empirically

based knowledge. The course moves through the research process covering hypothesis formulation, research design, data collection, measurement, and some fundamentals of statistical inference. Prereq: Admission to the PhD program in Design and Planning or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7012 - Theories of Planning

Examines theories of planning and problems of plan implementation. Review and assesses a range of theories of intervention - market imperfections, political economy, regulations, community, rationality, and communication - relying on examples from students research as well as case studies developed by students. Prereq: Admission to the PhD program in Design and Planning or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7013 - Environment and Behavior

Explores contributions of social research to understanding what facilitates and motivates people's adoption of sustainable environmental behaviors. It examines personal and collective behaviors, at scales that range from buildings to global environmental change, in the developed and developing world. Prereq: Admission to the PhD program in Design and Planning or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7014 - Colloquium

Presentations of research projects by students, college faculty members and visitors. Repeatable. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

DSPL 7015 - Historiography and Architecture

Advanced seminar concerning the study of the written record of the past and how it is established. Readings focus on canonic texts formative to the discipline and the strategies they offer for historical research. Prereq: "Course is offered to doctoral students but masters students may enroll with instructor approval." Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7016 - Architecture, in Theory

Explores theories and texts that have influenced the analysis and the production of architectural form. The focus is on the expressive potential of architectural forms and the modalities of the realization of this potential. Prereq: "Course is offered to doctoral students but masters students may enroll with instructor approval." Cross-listed with ARCH 6254. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7017 - Pro-Seminar

Advanced, graduate-level course (seminar, independent-study, or other) addressing the history of architecture, landscape, or urbanism. Prereq: "Course is offered to doctoral students but masters students may enroll with instructor approval." Max hours: 3 Credits. **Semester Hours:** 3 to 3

DSPL 7686 - Special Topics in Design and Planning

Various topical areas in design and planning are studied, including those in history, theory, methods, and practice. Repeatable. Max Hours: 18 Credits. **Semester Hours:** 1 to 3

DSPL 7810 - Independent Study: DSPL

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to design and planning. Prereq: Permission of instructor. Repeatable. Max Hours: 16 Credits. **Semester Hours:** 1 to 3

DSPL 7950 - Doctoral Thesis Research

Conducting research for doctoral dissertation, including data collection, analysis and presentation of findings. Prereq: Completion of core of PhD program. Repeatable. Max hours: 30 Credits. **Semester Hours:** 1 to 10

Digital Animation

DACD 2810 - DAC: Surface Modeling

A lecture/lab course focused on the mastery of creating surface models for digital 3D content. Students will develop skills/knowledge about the processes and techniques for building complex 3D objects with an emphasis on artistic excellence through application of current 3D technologies. Prereq: FINE 1810, FINE 1820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 2820 - DAC: Texturing and Shading

A lecture/lab course focused on mastery of creating surface textures/materials for digital 3D content. Students will develop skills/knowledge about the processes and techniques for creating realistic textures and materials with an emphasis on artistic excellence through application of current 3D technologies. Prereq: FINE 1810, FINE 1820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 2830 - DAC: Lighting and Rendering

A lecture/lab course focused on mastery of lighting the digital 3D environment. Students will develop skills/knowledge about the processes and techniques for creating realistic 3D

lighting/lighting effects with an emphasis on artistic excellence through application of current 3D technologies. Prereq: DACD 2810, DACD 2820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 2850 - DAC: Character Creation

A lecture/lab course focused on mastery of skills for creating digital 3D characters. Students will develop skills/knowledge to shape, mold, transform/articulate, and deform digital 3D shapes. Focus will be on creating digital characters, with an emphasis on artistic excellence through application of current 3D technologies. Prereq: DACD 2810, DACD 2820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3810 - DAC: Environment Production

A mid-program capstone studio course focuses on developing a project from preproduction through final product using a standard production pipeline model within a collaborative work environment. Students will design and create high-production value CG set/environments utilizing current 3D technologies. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3820 - Character Rigging & Animation

A studio course focused on foundational skills for animating digital 3D objects/characters. Students explore the process/techniques of key frame/pose-to-pose animating considering character performance, thought, constraints and velocity with an emphasis on artistic excellence through applications of current 3D technologies. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3821 - DAC: VFX Rigging & Animation I

A studio course focused on foundational skills for animating and rigging full digital 3D characters. Students explore the process/techniques of rigging for motion capture characters and adjusting their performance with consideration for thought, and animation with an emphasis on realistic VFX driven character performance. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3830 - Advanced Character Animation

A studio course focused on mastery of skills for rigging and animating digital 3D characters. Students explore the processes/techniques of animation rigging and its relationship to animating character performances. Prereq: DACD 3820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3831 - Character FX

A studio course focused on mastery of skills for rigging and animating digital 3D characters and objects and advance motion capture techniques. Students explore the processes/techniques of animation rigging and its relationship to realistic simulation of dynamic objects. Prereq: DACD 3820 and acceptance into DAC (FINE-BFA ANI). Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3835 - DAC: Visual Effects

A lecture/lab course exploring the theory/techniques of creating visual effects sequences. Students explore how to develop complete effects shots, including shooting live plates, camera tracking, visual effects, and compositing, with an emphasis on artistic excellence through application of current 3D technologies. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3846 - DAC: Preproduction for LookDev

A seminar course focused on the development and preproduction phases for the DAC senior thesis short. The principle focus of the course will be look, lighting, effects, and pipeline development and production organization for the DAC thesis short film. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 3850 - DAC: Dynamic Simulation

A lecture/lab course exploring the theory/techniques of dynamic and particle simulations for 3D content. Students explore how to develop effects (smoke, fire, steam, explosions) and dynamic materials (cloth), with an emphasis on artistic excellence through application of current 3D technologies. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 4810 - DAC: Production I

The first semester of a year-long capstone focuses on production of the BFA thesis short. As a team, students assemble to organize, produce and complete a high-production value animated short and student "demo reel" with real-world production pipeline. Prereq: DACD 3845 or DACD 3846, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

DACD 4820 - DAC: Production II

The second semester of a year-long capstone focuses on production of the BFA thesis short. As a team, students assemble to organize, produce and complete a high-production value animated short and student "demo reel" with real-world production pipeline. Prereq: DACD 3845 or DACD 3846, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Doctoral Studies in Educ Prog

DSEP 6000 - Academic Writing for Doctoral Students

Tailored for graduate students in education. Focuses on techniques for improving academic writing, particularly planning, organizing, drafting, revising, and editing papers, i.e. course assignments, portfolio products, doctoral proposals or dissertation chapters. Prereq: Admission to doctoral program. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

DSEP 6010 - APA Conventions in Academic Writing

This workshop, specifically directed to doctoral students, concentrates on practical issues involved in documenting sources and following conventions for other text features using the current Publication Manual of the American Psychological Association and updates posted on the APA Web site. Prereq: Admission to the doctoral program. Max hours: 1 Credit. **Semester Hours:** 1 to 1

DSEP 6020 - Advanced Academic Writing for Doctoral Students

This workshop is designed for doctoral students in education. Focuses on practical strategies for managing, organizing, revising and editing academic papers, especially complex writing projects such as dissertation proposals and dissertation chapters. Prereq: DSEP 6000 or permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 1

DSEP 7830 - Special Topics

Special topics that reflect current research and scholarly exploration of leadership and innovation. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

DSEP 7840 - Independent Study: DSEP

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

DSEP 8990 - Doctoral Research Project Seminar

Doctoral Research Project coursework toward the completion of an EdD degree in Education. Max hours: 10 Credits. **Semester Hours:** 1 to 10

DSEP 8994 - Doctoral Dissertation

Doctoral dissertation coursework toward the completion of a EdD or PhD degree in Education. Repeatable. Max hours: 30 Credits. **Semester Hours:** 1 to 10

Early Childhood Education

ECED 1000 - Introduction to Early Childhood Education

This course provides an overview of early childhood education contexts and the historical roots of services to young children and families. Trends, resources, foundational standards of practice, professionalism and code of ethical conduct are examined. Max hours: 3 Credits.

Semester Hours: 3 to 3

ECED 1202 - Child Guidance

This course explores and applies classroom strategies to promote social competence, build classroom community and facilitate emotional regulation. An emphasis is on understanding development within group contexts, observing children's behavior and engaging with families to make decisions about learning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 2000 - Early Childhood Education as a Profession

This course provides an overview of the ECE profession and its philosophical and historical foundations. Trends in early childhood care and education and professionalism are examined. Topics include developmental domains and appropriate practices, curriculum models, guidance strategies, family and community relationships, diversity and inclusion, and leadership skills to support quality early care and education work settings. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 2930 - Infant & Toddler Field Experience & Seminar

ECED 2930 is designed to support teacher candidates in making theory-to-practice connections, focused on understanding infant and toddler development. Students will spend one day per week in an infant-toddler classroom and engage in a weekly seminar to mediate learning. Prereq or coreq: ECED 4070. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits.

Semester Hours: 3 to 3

ECED 4010 - Inquiry and the Disciplines

This course introduces students to the role, value and practices of inquiry in early childhood education and explores the integration of the visual arts and creative expression with the disciplines of mathematics, literacy, science, social studies, as well as young children's approaches to learning. Restriction: Professional Year Admission required for licensure students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4020 - Science for P-2 Classrooms

Focuses on teaching science in preschool, kindergarten and primary grades, including knowledge of state and district science content standards, process standards, assessment, effective instructional strategies, evidence-based practice for adapting the curriculum for

diverse learners, and appropriate use of materials. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4030 - Nutrition, Health, and Safety

This course focuses on nutrition, health, and safety as a key factor for optimal growth and development of young children. Content includes nutrient knowledge, menu planning, food program participation, health practices, management and safety, appropriate classroom activities and communication with families. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4040 - Administrative Seminar

Emphasizes topics required of administrators to effectively lead and manage early childhood inclusive classrooms or other related programs including leadership capacity, professionalism, administration, teaming/collaboration, communities of practice, staff management, safety, and professional development. Cross-listed with ECED 5040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4050 - Early Childhood Education Capstone: Planning, Instruction & Assessment

This is the second course in this two-course sequence where students examine the essential features of instructional and curriculum design of developmentally appropriate and culturally sustaining inquiry based learning experiences, implementation, and assessment in the teaching and learning of young children. Prereq: ECED 4010. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4060 - Working with Families, Professionals, and Communities

The focus of this course is on the human relations component of an early childhood professional's responsibilities. Course content includes family-centered practice, culturally-responsive practices, home-school partnerships, staff development and communication, collaborative teaming and community interaction. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4070 - Development and Education of Infant and Toddlers

Focuses on the growth and development of infants and toddlers; responsive caregiving practices; observing development; relationship-based approach to curriculum and guidance; health, safety, and nutrition issues. Investigates state requirements for licensed infant/toddler homes and centers and accreditation and quality standards. Prereq or coreq: ECED 2930.

Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4102 - Developmentally Appropriate Curriculum Methods and Techniques

Overview of early childhood curriculum development including processes for planning and implementing developmentally appropriate environments, materials, and experiences. Examines curriculum models and approaches for promoting development and learning in all developmental domains. Evidence-based practices for assessing young children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4200 - Assessment for Early Childhood Classrooms

This course reviews observation/assessment of young children—purpose, tools, and methods for children birth-age 8. Defines measurable outcomes, progress monitoring and use of assessment data to improve early intervention, curriculum planning, intentional teaching, instructional design, and monitor child outcomes. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4202 - Child Guidance and Classroom Community

This course presents evidence-based classroom strategies to promote social competence, build classroom community and reduce or prevent behavior problems. Emphasis is placed on understanding child development and observing behavior to make decisions for children ages birth through age 8. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4300 - Exceptional Learners in the Early Childhood Classroom

Educating young children with disabilities in the early childhood setting: typical and atypical development, theoretical models, policy and legal requirements, evidence based research related to instructional design, intervention/curriculum planning and implementation. Introduction to embedded instruction and inclusive environments. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4410 - Coaching for Early Childhood Professionals: Foundations

The Foundations course focuses on learning, understanding and using relationship and evidence-based coaching skills in early childhood settings. Students will practice the fundamentals of coaching using a systematic, individualized, reflective approach and sharing experiences with others in the course. Cross-listed with ECED 5410. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4420 - Coaching Early Childhood Professionals: Awareness

The Awareness course focuses on increasing coaches' skills at introspection, thoughtful planning, intentional application of coaching knowledge and skills, and continuous improvement. Students will integrate skills with effective application in class and real life coaching experiences, managing progress and accountability. Cross-listed with ECED 5420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4430 - Coaching for Early Childhood Professionals: Attuning

The Attuning course will integrate skills from the Foundations and Awareness courses to complete the EC Coaching Certificate. Students practice refining and altering coaching based on needs and readiness. Students learn sustainable organizational change that embed coaching in all professional practice. Cross-listed with ECED 5430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4650 - Dual Language Learners Learning and Development

The course will review current research on the learning and development of young dual language learners (birth through 8) and the classroom environments and instruction that can promote their learning. The course uses a socio-cultural framework to view children's learning. Cross-listed with ECED 5650. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 4800 - Workshop: Topics in Early Childhood Education

Topics and credit hours vary from semester to semester. Cross-listed with ECED 5800. Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 4

ECED 4931 - Internship I & Collaborative Learning Community

ECED 4931 is the first of 3 internships in the professional year of the ECE program plan that provides the necessary learning opportunities for candidates to gradually develop their practice in order to be licensed as an early childhood educator. Restriction: Professional Year Admission required. Max hours: 2 Credits. **Semester Hours:** 2 to 2

ECED 4932 - Internship II & Collaborative Learning Community

ECED 4932 is the second of 3 internships in the professional year of the ECE program plan that provides the necessary learning opportunities for candidates to gradually develop their practice in order to be licensed as an early childhood educator. Restriction: Professional Year Admission required. Max hours: 2 Credits. **Semester Hours:** 2 to 2

ECED 4933 - Internship III & Collaborative Learning Community

ECED 4933 is the final internship in a series of three completed during the professional year of the ECE program plan that provides the necessary learning opportunities for candidates to gradually develop their practice to be licensed as an early childhood educator. Cross-listed with ECED 5933. Restriction: Professional Year Admission required. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 2 to 8

ECED 4934 - Extended Internship & Collaborative Learning Community

ECED 4934 is an extended internship that supports students who need extended time in an internship in order to complete their ECE program and fully develop their practice in order to be licensed as an early childhood educator. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 4 to 8

ECED 5010 - Curriculum in Early Childhood Education

Review of principles of early childhood curriculum and program development. Linkages are made between theoretical bases of development and curriculum planning. Curriculum areas considered include language and literacy, mathematics, motor, social-emotional, science, social studies and aesthetic development. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5040 - Administrative Seminar

Emphasizes topics required of administrators to effectively lead and manage early childhood inclusive classrooms or other related programs including leadership capacity, professionalism, administration, teaming/collaboration, communities of practice, staff management, safety, and professional development. Cross-listed with ECED 4040. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5060 - Working with Families and Communities

Theories, practices and research related to working with families and communities. Topics include: social systems perspective, family structures and forms; family support systems; family-centered practice; family/professional partnerships; effective communication; and working with parents of children with special needs. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5070 - Social Competence and Classroom Supports

Emphasizes prevention, positive behavioral interventions and support, and social/emotional development for children birth to eight. Focus on the practical application of intervention

strategies based on current research and evidence-based practices. Cross-listed with ECED 7070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5080 - Language and Literacy in Young Children

Overview of theories and research in early language and literacy development. Emphasis on sociocultural beliefs and practices associated with the use of language and literacy in the different contexts. Information about language disorders found in early childhood settings is discussed. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5091 - Educators as Social Change Agents

Focus on developing knowledge, skills and dispositions to advance equity and social justice in classrooms, programs, and communities to activate educators as social change agents and implement quality inclusive practices for young children from diverse backgrounds. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5102 - Introduction to Developmentally Appropriate Curriculum

Introduces developmentally appropriate curriculum and instructional practices in early education and the elementary grades. Subject areas considered include literacy, language arts; mathematics, computers, blocks; science, outdoor education; social studies, thematic units; and art, drama, music, physical activity. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ECED 5104 - Advanced Developmentally Appropriate Curriculum

Extends earlier learning about developmentally appropriate curriculum and instructional practices in early education and the elementary grades. Students elaborate their knowledge of subject area materials and activities. A curriculum unit that is developmentally appropriate is planned, implemented and evaluated. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 3

ECED 5110 - Advanced Infant and Toddler Development:

Focuses on development of infants/toddlers to inform responsive caregiving practices. Develop observation skills to understand infant/toddler behavior. A relationship-based approach to curriculum is emphasized. State requirements for licensed infant/toddler programs, accreditation and quality standards are discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5200 - Screening and Assessment of Young Children

Provides knowledge and field-based experience in the administration and scoring of screening and assessment for infants, toddlers, and preschool children. Understand and administer a variety of formal and informal measures including screening, evaluation, play-based and curriculum-based assessments. Cross-listed with ECED 7500. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5202 - Classroom Management to Promote Positive Behavior

Evidence-based classroom management strategies to promote social competence and reduce behavior problems. Includes strategies for responding to challenging behavior and developing individualized behavior support plans. Explores factors that influence the lives of young children including family disruption, stress, violence and trauma. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 5210 - Overview of Infant Toddler Autism Services

This course will provide students with a general introduction to the legal and procedural elements that characterize state-of-the-art services to infants and toddlers with ASD. The course will review the Federal mandate for services, principles of practice, and evidence-based teaching strategies for children with autism. Must be accepted into the Infant Toddler Autism Certificate Program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5211 - Applied Treatment Delivery for Infants and Toddlers with ASD

The course explores current treatment methods and philosophies for young children with Autism Spectrum Disorder (ASD). Common intervention approaches are reviewed, with discussion of the evidence base of each. Intervention goals covered address language, play/socialization, early adaptive skills, and positive behavior. Must be accepted into the Infant Toddler Autism Certificate Program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5212 - Coaching for Families Infants/Toddlers w/ Autism

This course provides the knowledge and skills necessary to implement recommended, evidence-based practices with families of infants and toddlers with or at risk for ASD. The course will review current evidence based strategies for supporting families, collaborating with families, and using evidence-based family coaching strategies. Must be accepted into the Infant Toddler Autism Certificate Program Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5301 - Child Development: Theory to Leadership Practices

This course will provide an introduction to theories of child development from an interdisciplinary perspective. It examines development in the cognitive and socioemotional domains utilizing biological, social, psychological and anthropological perspectives and how theory is used to shape program models. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5311 - Equity for Leadership in Early Childhood Programs

This course is designed to provide early childhood leaders with an understanding of the equity issues present in early childhood systems and how these issues are reflected in individual identities and programs. Theories from the academic community will be used to facilitate student growth in understanding how these issues interact with them at a personal, professional and leadership level. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5312 - Leading Learning Organizations

This course will deepen student's capacity to lead effectively and learn how to create an adaptive, flexible learning organization well positioned for delivering effective and sustainable programs and services on behalf of young children and families. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5320 - Community-Based Action Research: Capstone

This course is designed to foster the leader's appreciation, skills, and practice as a participatory action researcher. Students will learn these concepts by leading a participatory action-research project in their community around a challenging early childhood issue and will present their action research project culminating at a Capstone Celebration. Prereq: Must be admitted to the Buell Early Childhood Leadership Program (BECLP). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5330 - Introduction to Transformational Leadership

This course outlines the evolution of leadership theory over the past half-century and immerses students in an exploration of the values, leadership capacities, and practices that define transformational leadership as they apply to effecting change to support the success and well-being of young children and their families and communities. Prereq: Must be admitted to the Buell Early Childhood Leadership Program (BECLP). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5350 - Policy and Advocacy in Early Childhood

This course provides the historical and political context of early care and education in the United States. Local, state and federal mandates, public laws, and legislative procedures and initiatives will be investigated. Prereq: Must be admitted to the Buell Early Childhood Leadership Program (BECLP). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5410 - Coaching for Early Childhood Professionals: Foundations

The Foundations course focuses on learning, understanding and using relationship and evidence-based coaching skills in early childhood settings. Students will practice the

fundamentals of coaching using a systematic, individualized, reflective approach and sharing experiences with others in the course. Cross-listed with ECED 4410. Max hours: 3 Credits.

Semester Hours: 3 to 3

ECED 5420 - Coaching Early Childhood Professionals: Awareness

The Awareness course focuses on increasing coaches' skills at introspection, thoughtful planning, intentional application of coaching knowledge and skills, and continuous improvement. Students will integrate skills with effective application in class and real life coaching experiences, managing progress and accountability. Cross-listed with ECED 4420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5430 - Coaching for Early Childhood Professionals: Attuning

The Attuning course will integrate skills from the Foundations and Awareness courses to complete the EC Coaching Certificate. Students practice refining and altering coaching based on needs and readiness. Students learn sustainable organizational change that embed coaching in all professional practice. Cross-listed with ECED 4430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5650 - Dual Language Learners Learning and Development

The course will review current research on the learning and development of young dual language learners (birth through 8) and the classroom environments and instruction that can promote their learning. The course uses a socio-cultural framework to view children's learning. Cross-listed with ECED 4650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5800 - Workshop: Topics in Early Childhood Education

Topics and credit hours vary from semester to semester. Cross-listed with ECED 4800. Repeatable. Max hours:12 Credits. **Semester Hours:** 1 to 4

ECED 5840 - Independent Study

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

ECED 5850 - Capstone in Early Childhood Education

Capstone is a final project that demonstrates your academic and professional development. It explains professionally who you are, where you have been, how you have developed in ECE. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 5933 - Internship III & Collaborative Learning Community

ECED 5933 is the final internship in a series of three completed during the professional year of the ECE program plan that provides the necessary learning opportunities for candidates to gradually develop their practice to be licensed as an early childhood educator. Cross-listed with ECED 4933. Repeatable. Max Hours: 8 credits. **Semester Hours:** 2 to 8

ECED 6010 - Literacy and Mathematics K-2

Principles of early reading and mathematical development for grades K-2 including diverse instructional strategies and differentiation for children with disabilities. Linkages are made between child development and learning expectations for mathematics, reading and writing and curriculum planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6100 - Medical and Physiological Aspects of Development

Presents medical and physiological aspects of development including an understanding of chronic illness/medical fragility in young children and the effects on families, school, and community. Examination and professional responses to cultural interpretation of medical issues are discussed. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 6200 - Early Intervention Strategies

Explores current research, knowledge, and skills related to evidence-based intervention strategies and service delivery in high quality inclusive settings for young children with special needs from infancy through age eight. Cross-listed with ECED 7200. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 6300 - Contextual Curriculum 1

This course focuses on the role of the teacher in developing a contextual curriculum that deeply engages learners. Developing curriculum includes observing learners, documenting observations using technology, and reflecting on documentation with colleagues to intentionally implement curriculum plans. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6310 - Contextual Curriculum II

This course builds upon competencies developed in ECED 6300: Contextual Curriculum I through curriculum development that relies on the cyclical process of critical observation, documentation, analysis, reflection, and provocation. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6330 - Supportive Social Learning

This course will provide students with the strategies that promote social competence and reduce the potential for interactions and behaviors that often challenge teachers. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6340 - Messing About with STEM

This course focuses on the role of the teacher in supporting STEM experiences in diverse contexts. Students will draw from relevant research and philosophy of science, combined with inquiry-based experiences guided by established frameworks, to strengthen their STEM mindset. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6350 - Literacy and the Hundred Languages

In-depth study of scientific and theoretical foundations of communication and literacy development, the conceptual paradigm of 100 languages of children, the nature of languages, and acquisition patterns in contexts of individual variation, cultural and linguistic differences, or language challenges. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6360 - Children and Teachers as Change Agents

This course focuses on partnering with children and other educators around a community-based action project that will contribute to the community. Students will review literature and documentation, collaborate, design, lead, and advocate around a topic that relates to young children. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 6690 - Seminar: Research and Current Issues in Early Childhood Education

Research methods are reviewed and then selected topics are considered. Emphasis is on research findings and current issues of importance to teachers, administrators, specialists, collaborator/consultants, and researchers in early childhood and early childhood special education. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 6910 - Early Childhood Special Education Infancy Practicum

Supervised field-based experiences in settings for children with disabilities and at-risk infants, toddlers, and their families. Prereq: ECED 5010, 5070, 5080, 5200, 6100, and 6200. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 4

ECED 6911 - Initial Practicum and Field Experience in Early Childhood Education

In this experience, you will be introduced to an array of skills/practices that support working effectively with young children and families in the context of their local community. You will work within the community to support children's academic/social development. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

ECED 6912 - Early Childhood Special Education Preschool Practicum

Supervised field-based experiences in settings for young children with disabilities and their families, including school districts and community agencies. Prereq: ECED 5010, 5070, 5080, 5200, 6100, and 6200. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

ECED 6914 - Early Childhood Special Education Primary Practicum

Supervised field-based experiences in kindergarten through second grade settings with typically developing children, children with special needs and special education teams. Prereq: ECED 5010, 5070, 5080, 5200, 6100, and 6200. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

ECED 7000 - Early Childhood Leadership Seminar I

The course is designed to provide an overview of policies, laws, and leadership skills in early childhood. Students will study specific policies and laws influencing (1) services for children with severe challenging behavior and autism, (2) children from culturally and linguistically diverse families, and (3) professional development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 7002 - Early Childhood Leadership Seminar II

The purpose of the course is to provide scholars with leadership knowledge and skills to implement policies, laws, programs, and systems that support the use of evidence-based practices with young children with disabilities. Prereq: ECED 7000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECED 7004 - Early Childhood Leadership Seminar III

The purpose of this seminar is to provide the knowledge and skills to implement evidence-based practices in early childhood settings. This seminar will focus on policies and practices that support implementation, scale-up, and sustainability of evidence based practices in early childhood systems. Prereq: ECED 7002. Max hours: 9 Credits. **Semester Hours:** 3 to 3

ECED 7070 - Social Competence and Classroom Supports

Emphasizes prevention, positive behavioral interventions and support, and social/emotional development for children birth to eight. Focus on the practical application of intervention strategies based on current research and evidence-based practices. Cross-listed with ECED 5070. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ECED 7200 - Early Intervention Strategies

Explores current research, knowledge, and skills related to evidence-based intervention strategies and service delivery in high quality inclusive settings for young children with special needs from infancy through age eight. Cross-listed with ECED 6200. Max hours: 3 Credits.

Semester Hours: 3 to 3

ECED 7500 - Screening and Assessment of Young Children

Provides knowledge and field-based experience in the administration and scoring of screening and assessment for infants, toddlers, and preschool children. Understand and administer a variety of formal and informal measures including screening, evaluation, play-based and curriculum-based assessments. Cross-listed with ECED 5200. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

Economics

ECON 1010 - Economics of Social Issues

This course is designed for non-majors. Majors in economics will not receive credit toward departmental degree requirements. The focus of the course is on current issues in the economy, including poverty, social security, airline deregulation, government control of prices, economics of higher education, free trade, race and gender discrimination, unemployment, the role of government, and the national debt. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ECON 2012 - Principles of Economics: Macroeconomics

Covers topics of inflation, unemployment, national income, growth and problems of the national economy, stabilization policy, plus others at the discretion of the instructor. Purpose is to teach fundamental principles, to open the field of economics in the way most helpful to further a more detailed study of special problems, and to give those not intending to specialize in the subject an outline of the general principles of economics. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1. **Semester Hours:** 3 to 3

ECON 2022 - Principles of Economics: Microeconomics

Topics include price determination in a market system composed of households and firms: resource allocation and efficiency of various market structures, plus others at the discretion of the instructor. Note: Complementary to and normally taken following ECON 2012. ECON 2012 is not a prerequisite for ECON 2022. Term offered: fall, spring, summer. Max hours: 3 Credits. GT:

Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1. **Semester Hours:** 3 to 3

ECON 3050 - Decision Making

This course discusses current research on decision making/behavioral economics, as well as its application to individual well-being and public policy. You will gain insights on how and why people can be irrational in their daily decisions. Cross-listed with PBHL 3050 and PSYC 3050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3100 - Economics of Race and Gender

Overview of the determinants of wages, employment and education in the labor market. Emphasizes the investigation of the evidence and theories of differentials that appear to be associated solely with race and sex, and public policies associated with discrimination and poverty. Prereq: ECON 2022 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3300 - Economics of Crime and Punishment

Presents the economic approach to crime. Teaches economic reasoning in the analysis of the determinants of criminal activity, provides an in-depth analysis of the importance of socioeconomic factors in determining crime. Investigates the relative importance of labor market conditions, deterrence, and other factors in the level of criminal activity. Also covers topics to reduce crime such as, the death penalty, issues around victimless crime and public choices. Prereq: ECON 2022 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3366 - Managerial Economics

Presents the basic core of economic theory and its use for sound managerial decision making. Emphasis on the practical applications of the concepts learned in economics to the resolution of everyday problems. Prereq: ECON 2012 and 2022 with a C- or higher. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3400 - Economics of Sex and Drugs

Examines the political and policy issues surrounding controversial topics in human behavior. Economic models and reasoning are applied to examine issues such as juvenile substance use and abuse, and teen pregnancy. Prereq: ECON 2022 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3415 - Issues in International Trade and Finance

A survey of International Trade and Finance is provided and then applied to contemporary issues such as gains from trade, global and local economic inequality, trafficking, global capital markets, debt, the Eurozone and transmission of inflations and recessions internationally. This course is for non-economics majors & economics minors. Students may not receive credit if they take it after they have completed ECON 4410 or ECON 4420. Prereq: Econ 2012 and Econ 2022 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3770 - Issues in Economic Development

This is a survey course in development economics intended to provide a basic understanding of the economies of developing nations. Topics include issues and policies in economic development, comparative economic growth, demographic change, poverty, inequality, and migration. This course is for non-economics majors & economics minors. Students may not receive credit if they take it after they have completed ECON 4770. Prereq: Econ 2012 or Econ 2022 with a C- or higher. Term offered: spring, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3801 - Introduction to Mathematical Economics

Introduces the use of mathematics in micro- and macro-economic analysis. Emphasis on model-building techniques, solution methods, and economic interpretations. Prereq or co-req: ECON 2012 with a C- or higher, prereq: ECON 2022 and College Algebra or higher (MATH 1110 or MATH 1070 or MATH 1401 or MATH 1130 or MATH 2411 or MATH 2421) with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 3811 - Statistics with Computer Applications

Introduces statistical methods and their application to quantitative problems in economics and social sciences. Note: Recitation is required. Prereq or co-req: ECON 2022 AND Prereq: College Algebra or higher (MATH 1110, MATH 1070, MATH 1401, MATH 2411, MATH 2421, MATH 1130, or ECON 3801) with a C- or higher. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

ECON 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ECON 4001 - Topics in Economics

Studies special topics in economics to be selected by the instructor. Note: May be repeated for credit when topics vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ECON 4030 - Data Analysis with SAS

Covers techniques for handling and interpreting economic data and conducting econometric analyses using SAS programming. Provides hands-on data management and analyses with large data sets with applications to business and economics, and prepare students for SAS Base Programmer certification exam. Prereq: ECON 3811 with a C- or higher. Cross-listed with ECON 5030. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4050 - Special Economic Problems

Provides students the opportunity to critically evaluate some practical and theoretical problems under supervision, and to present results of their thinking to fellow students and instructors for critical evaluation. Prereq: ECON 2012 and ECON 2022 with a C- or higher. Note: ECON 4050 for majors in economics, others by permission of instructor. Cross-listed with ECON 5050. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 8

ECON 4071 - Intermediate Microeconomic Theory

Production, price and distribution theory. Study of value and distribution theories under conditions of varying market structures, with special references to the contribution of modern theorists. Prereq: ECON 3801 with a C- or higher or Calculus II or Calculus III with a B or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4081 - Intermediate Macroeconomic Theory

National income and employment theory. Primary emphasis placed on determination of employment and prices. Problems of unemployment and inflation analyzed and appropriate policies considered. Prereq: ECON 3801 with a C- or higher or Calculus II or Calculus III with a B or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4090 - History of Economic Thought

Traces the development of economic thought from ancient times to the 20th century. Considers the context in which these ideas were developed and their relationship to modern economic thought and contemporary economic problems. Note: Students may not receive credit for this course if they have already received credit for ECON 4091. Prereq: ECON 2012 and ECON 2022 with a C- or higher. Cross-listed with ECON 5090. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4110 - Money and Banking

Surveys major monetary and fiscal institutions such as commercial banks, the federal reserve system, savings institutions, and the structure of debt. The relationships between households, firms and financial intermediaries are explored, and the tools available to macroeconomic policy makers are described and evaluated. Prereq: ECON 4081 with a C- or higher. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4150 - Economic Forecasting

Teaches forecasting techniques used in business and government to project trends and short-term fluctuations. Actual data are employed in instruction and labs. State-of-the-art spreadsheet and algorithms are introduced as part of the course work. Prereq: ECON 4811 with a C- or higher. Cross-listed with ECON 5150. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4210 - Public Finance

Surveys topics dealing with the economics of government activity, including the provision of public goods; the economics of the political process; welfare programs; pollution externalities; benefit-cost analysis; the U.S. tax structure; and the effects of taxes on economic behavior, economic performance and the distribution of income. Prereq: ECON 2022 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4230 - Law and Economics

Applies economic theory to legal decision-making. Topics include property law, tort law, contract law, the common law, crime and punishment, comparisons to traditional forms of legal decision-making and the economic approach to politics. Prereq: ECON 2022 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4240 - Economic Policy Analysis

Deals with the application of economic analysis to the government policy-making process. Topics include public goods provision, externalities, cost-benefit analysis, judicial decision-making, the economic analysis of the political process, government regulation of business, and tax incidence. Prereq: ECON 2012, ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4310 - Managerial Economics

The course adapts standard theory to more realistically discuss enterprise structure, firm and managerial behavioral incentives, and strategic behavior. Once a foundation is laid, successful and unsuccessful strategies and case studies are presented. Cross-listed with ECON 5310. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4318 - Urban Economics

Why do cities form and why are they so productive? How does the value of land change as the urban landscape develops? How do we address the difficulties that challenge modern cities, such as affordable housing, congestion, and crime? Prereq: ECON 3811 and ECON 4071 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4320 - Financial Economics

This course focuses on the economics of decision-making under conditions of risk and uncertainty. Topics include theories of efficient markets, rational expectations, speculative bubbles, random walks, portfolio analysis, options, derivatives and future markets. Emphasis is on the application of basic theories to economic agents' behavior and case studies. Prereq: ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher), and ECON 3811 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4410 - International Trade

Trade theory identifies who wins and loses from trade and why there are usually overall gains. Explores issues in immigration, globalization, income inequality, tariffs, dumping, the WTO, the environment, wages, and growth strategies among others. Prereq: ECON 3811 with a C- or higher. Cross-listed with ECON 5410. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4420 - International Finance

The international adjustment process, including the foreign exchange market, balance of payments disequilibria, price and income adjustment, fiscal and monetary policy, and the international monetary system. Prereq: ECON 3811 with a C- or higher. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4430 - Economic Growth

Explores causes of rapid growth or decline over long periods for different regions of the world. Inequality, sustainability, culture, climate, technology and resources all play significant roles. Data and examples are used to determine the important influences. Prereq: ECON 2022 and ECON 3811 with a C- or higher. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4530 - Economics of Natural Resources

Examines economic models of renewable resource management and models of exhaustible resource depletion. Analyzes decisions made by private firms and governments affecting the

methods and rate of resource development. Examines the effects of resource development on economic growth and environmental quality and the effects of economic development on resource scarcity. Prereq: ECON 2022 with a C- or higher. Cross-listed with ECON 5530. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4540 - Environmental Economics

Economic approach to environmental problems: relationship between ownership structures, externalities and environmental damage; poverty, population pressure, and environmental degradation; valuation of environmental amenities; sustainability of economic activity; cost-benefit analysis applied to the environment; evaluation of alternative instruments for environmental control. Prereq: ECON 2022 with a C- or higher. Cross-listed with ECON 5540. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4550 - Game Theory and Economic Applications

An introduction to economic applications of game theory. Concepts such as strategic and extensive form games, existence and selection of equilibrium will be covered. These concepts will be applied to understand market structure, location decisions, price competition, contracting, and auctions. Prereq: ECON 4071 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4610 - Labor Economics

Studies problems associated with the determination of wages, hours, and working conditions in the American economy. Strong emphasis placed on current research in such areas as welfare reform, minimum wage, return to schooling, immigration, labor market discrimination, and trade unions. Prereq: ECON 4811 with a C- or higher. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4640 - Sports Economics

Applies economic analysis to sports. Explores topics such as competition, on-field performance, players' compensation, profits in professional sports, anti-trust and labor law, the impact of sports on local communities and the links between athletics and education. Prereq: ECON 2022 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4660 - Health Economics.

This course focuses on the analysis of current health care markets. Topics include the production of health, demand for health care, physician and hospital behavior, health insurance, medical malpractice, health externalities, managed care and the affordable care act. Prereq: ECON 3811 and 2022. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4670 - Economics of Population and Growth

Theoretical modeling and data analysis will be used to analyze the economic causes, consequences and policy responses to population change through changes in fertility, marriage, health, mortality and migration. Prereq: ECON 2022 and (ECON 3811 or ECON 4811) with a C- or higher or instructor approval. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4740 - Industrial Organization

Examines the determinants of, and linkages between, market structure, firm conduct, and industrial performance. Topics include: determinants of the market size; impact of different market structures on prices and outputs; strategic behavior of firms to prevent entry or induce exit of rival firms; collusion; price discrimination; advertising; competition, monopoly, and innovation; implications for economic efficiency and public policy. Prereq: ECON 4071 with a C- or higher. Cross-listed with ECON 5740. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4770 - Development Economics

This course provides a theoretical and empirical framework for analyzing economic problems in developing countries focusing on the role of individuals, families and institutions. Topics include poverty traps, human capital accumulation, gender discrimination, microcredit and violent conflict. Prereq: ECON 4811 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4811 - Introduction to Econometrics

Introduces econometric methods and their applications to quantitative economic problems. Simple and multiple regression models and problems encountered in their applications are developed in lectures and applied computer projects. Prereq: ECON 3811 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4812 - Advanced Econometric Methods

This course will focus on econometric methods used to generate causal inference in experimental and non-experimental settings. Topics covered will include the potential outcomes framework, randomized experiments, natural experiments, difference-in-differences, fixed effects, matching, instrumental variables, and regression discontinuity. Prerequisite: ECON 4811 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 4840 - Independent Study: ECON

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ECON 4850 - Honors Independent Study: ECON

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ECON 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ECON 5030 - Data Analysis with SAS

Covers techniques for handling and interpreting economic data and conducting econometric analyses using SAS programming. Provides hands-on data management and analyses with large data sets with applications to business and economics, and prepare students for SAS Base Programmer certification exam. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Statistics with Computer Applications(ECON 3811) or a similar course is strongly recommended as preparation for this course. Cross-listed with ECON 4030. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5050 - Special Economic Problems

Provides students the opportunity to critically evaluate some practical and theoretical problems under supervision, and to present results of their thinking to fellow students and instructors for critical evaluation. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Cross-listed with ECON 4050. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

ECON 5073 - Microeconomic Theory

Fundamental features of partial equilibrium theory of the firm, consumer and market. General equilibrium and welfare economic topics are examined. Features of the models that have empirical applications are accented. Restriction: Restricted to students with graduate standing and coreq ECON 5803 or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5083 - Macroeconomic Theory

Examines the major macroeconomic models within a common framework. Differences in the foundations, structure, and policy implications of the competing models are analyzed. Restriction: Restricted to students with graduate standing and coreq ECON 5803 or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5090 - History of Economic Thought

Traces the development of economic thought from ancient times to the 20th century. Considers the context in which these ideas were developed and their relationship to modern economic thought and contemporary economic problems. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Microeconomics (ECON 2022) and Macroeconomics (ECON 2012) or similar coursework is strongly recommended as preparation for this course. Cross-listed with ECON 4090. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5150 - Economic Forecasting

Teaches forecasting techniques used in business and government to project trends and short-term fluctuations. Actual data are employed in instruction and labs. State-of-the-art spreadsheet and algorithms are introduced as part of the course work. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Statistics with Computer Applications (ECON 3811) or similar coursework is strongly recommended as preparation for this course. Cross-listed with ECON 4150. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5660 - Health Economics

Introduces students to analytical skills and economic methods, and demonstrates how these methods can be applied to issues in health policy and management. Topics include: demand for health and medical care; health care costs, health reform, medical technology; market for health insurance; physicians, hospitals, and managed care; pharmaceuticals; regulations in the U.S. health care sector; demand for addictive substances; infant and maternal health; international comparisons of health care systems. Prereq: Permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5800 - Special Topics

Current economics topics to be determined by the instructor. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ECON 5803 - Mathematical Economics

Introduces the use of mathematics in advanced micro- and macro-economic analysis. Emphasis on model-building techniques, solution methods, and economic interpretations. Restriction: Students must be admitted to the MA in ECON, MS or PhD in Health Economics in order to enroll ECON 5083. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5813 - Econometrics I

Theory and application of statistical techniques used to analyze economic problems. Topics include simple and multiple regression models, simultaneous equation models, and the problems encountered in their application. Students formulate models, obtain data, estimate models, interpret results and, forecast. Restriction: Restricted to students with graduate standing and coreq ECON 5803 or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5823 - Econometrics II

Second course in the econometrics sequence, covering intermediate topics in cross-section and time series analysis. Topics include limited dependent variables, autoregressive and distributed lag models, longitudinal data analysis and unit roots, co-integration and other time-series topics. Prereq: ECON 5813 with a B- or higher. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ECON 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course

expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ECON 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ECON 6053 - Seminar In Applied Economics

Familiarizes students with applied research in economics. Students read, discuss, and critique articles in economic journals. Emphasis is placed on research design and methods employed in these articles to prepare students for development of their own research projects in subsequent courses. Topics vary with instructor, and may include international economics, labor economics, monetary theory, public or finance and development economics. Prereq: ECON 5073 and ECON 5813 with a B- or higher. Coreq: ECON 5823. Restriction: Restricted to students with graduate standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1.5 to 1.5

ECON 6054 - Seminar In Applied Economics II

Familiarizes students with state-of-the-art applied economic research. Students read, discuss, and critique articles published in economic journals. Note: Topics vary with the instructor. Prereq: ECON 5073 and ECON 5813 with a B- or higher. Coreq: ECON 5823. Restriction: Restricted to students with graduate standing. Term offered: spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1.5 to 1.5

ECON 6060 - Special Topics

Special topics in advanced microeconomics. Consideration of value theory based upon methodology, theory of demand, and theory of distribution. Restriction: Restricted to students with Graduate standing. Introduction to Mathematical Economics (ECON 3801) or similar coursework is strongly recommended as preparation for this course. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ECON 6073 - Research Seminar

Focuses on training students to do rigorous research in economics. Topics include the analysis of large data sets, further development of econometric skills, and writing a research paper. Note: Students attend lectures and also meet regularly with the instructor in the process of doing a sophisticated research project. ECON 5073 and ECON 5823 with a B- or higher and

either ECON 6053 or ECON 6054 with a B- or higher. Restriction: Restricted to students with graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 6610 - Labor Economics

Advanced study of the labor market, including: history, nature, and function of labor organizations; the process of wage determination; and the formation of public policy. Prereq: ECON 5073 and 5813 with a B- or higher. Restriction: Restricted to students with Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 6840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ECON 7073 - Advanced Microeconomic Theory II

This is a second-semester Ph.D. level course in microeconomics. The first semester course discussed consumer and producer theory: this course will discuss game theory, market equilibrium, and information economics. Prereq: ECON 5073 with a B- or better. Restriction: Restricted to students with Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 7661 - Health Economics I

This is the first course in the Ph.D field sequence for Health Economics. The goal of this course is to familiarize you with the basic theory and empirical findings in the part of health economics which focuses on the market for medical care and the policy that surrounds it. Pre-req or co-req ECON 5823. Students must enroll in both courses concurrently or have completed ECON 5823 with a B- or better. Restricted to students with graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 7662 - Health Economics II

This course teaches an economic approach to studying the various policies that affect these risky health behaviors. The extensive economic literature on the causes and consequences of risky health behaviors will be studied. Co-requisite ECON 5823 OR prerequisite ECON 5823 with a grade of B- or better. Restricted to students with graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ECON 8990 - Doctoral Dissertation

Designed to allow doctoral students to conduct research for course credit prior to advancement to candidacy. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Note: Students must be in the Health Economics PhD program and have permission from the instructor to be eligible for this course. Term offered: fall, spring. Repeatable. Max hours: 50 Credits. **Semester Hours:** 1 to 10

Education Admin & Supervision

EDUC 5000 - Special Topics: Administrative Leadership and Policy Studies

Specific topics vary. Focus is on faculty-developed options to standard course offerings to facilitate program development and distance-learning activities. Repeatable. Max Hours: 40 Credits. **Semester Hours:** 0.5 to 10

EDUC 5001 - Special Topics: Administrative Leadership and Policy Studies

Repeatable. Max Hours: 40 Credits. **Semester Hours:** 1 to 10

EDUC 5010 - Paraeducator Supervision Academy

Provides the paraeducator with knowledge and skills to work effectively in teams. Paraeducators refine their knowledge of the characteristics of paraprofessionals in education, the distinction between professional and paraprofessional roles and responsibilities, liability and ethical issues. Max hours: 1 Credit. **Semester Hours:** 1 to 1

EDUC 5015 - Developmental Intervention Supervisor Academy (DISA)

Developmental Intervention Supervisor Academy provides early intervention professionals with the knowledge and skills to work effectively in teams and to utilize and supervise Developmental Intervention Assistants (DI Assistant is the title used in Colorado for paraprofessionals in early intervention services). Max hours: 1 Credit. **Semester Hours:** 1 to 1

EDUC 5020 - Trainers of Paraeducator Academy

Provides the professional educator with the skills to provide effective presentations to paraprofessionals in schools. Max hours: 1 Credit. **Semester Hours:** 1 to 1

EDUC 5025 - Developmental Intervention Trainers Academy (DITA)

Developmental Intervention Trainer Academy (DITA) is offered to early interventional professionals who have completed EDUC 5015 (DISA). DITA provides the participants skills to become effective trainers who deliver training to Developmental Intervention Assistants (i.e.

paraprofessionals in early intervention services in Colorado). Max hours: 1 Credit. **Semester Hours:** 1 to 1

EDUC 5030 - Top Cadre of Trainers (TOPCAT) Seminar

Provides CO-TOP Trainers (school professionals who have been through the PSA: EDUC 5010 and TOPA: EDUC 5020) ongoing support in their roles as supervisors and trainers of paraeducators. Through this seminar trainers receive updated information about CO-TOP Academies, find collegial support from other trainers, exchange ideas, gain presenting and adult teaching ideas, and receive feedback on their teaching of paraeducator academies. This seminar also addresses the questions and needs of the individual CO-TOP trainer with regard to CO-TOP paraeducator training materials and processes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5651 - Foundations of Leadership

This courses focuses on leadership and the characteristics and foundational elements of what the leaders need to think about and do while providing the opportunity for students to apply this foundational learning to leadership in their own organization. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5652 - Leadership for Equity/Social Justice

Understand our own experiences and experiences of historically marginalized groups, with the historical and philosophical forces that have led to inequities, critically analyze current conditions and to work to develop school policies, curriculum and relationships to create access and opportunities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5653 - Leadership Practices for Responsive Change

This course focuses on leadership and the change process of individual and organizational responsive change with opportunity for students to learn about/apply this learning to the process of leading responsive change in the context of an organization. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5654 - Leadership Practice Capstone

The Capstone Experience is a culminating project that provides a way for students to demonstrate the knowledge and skills they acquired during the MA program, linked to issues of equity or social interest related to the United States educational system. Prereqs: EDUC 5651, EDUC 5652, and EDUC 5653. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5655 - Leadership Practices for Transformative School Reform

This course will create a community of learners who can work together to investigate constructs and principles for school turnaround and transformation. The course will draw on previous learning for the practical application of intentional leadership practices for school reform and transformation. Change theory will be considered and applied to reform and transformation. Students will have the opportunity to study current reform efforts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 5751 - Principal/Administrator Licensing I

This program section (1 of 4) combines foundational learning in leadership, school improvement, instructional leadership and equity via hybrid sessions. Clinical-practice experiences are required. Assessment is performance-based and submitted to LIVETEXT. Prereq: admission to the program. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 9

EDUC 5752 - Principal Administrator Licensing II

This program section (2 of 4) combines continued learning in leadership, school improvement, instructional leadership and equity via hybrid sessions. Clinical-practice experiences are required. Assessment is performance-based and submitted to LIVETEXT. Prereq: admission to the program. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 9

EDUC 5753 - Principal/Administrator Licensing III

This program section (3 of 4) combines Continued learning in leadership, school improvement, instructional leadership and equity via hybrid sessions. Clinical-practice experiences are required. Assessment is performance-based and submitted to LIVETEXT. Prereq: admission to the program. Max hours: 9 Credits. **Semester Hours:** 3 to 9

EDUC 5754 - Principal or Administrator Licensing IV

This program section (4 of 4) combines foundational learning in leadership, school improvement, instructional leadership and equity via hybrid sessions. Clinical-practice experiences are required. Assessment is performance-based and submitted to LIVETEXT. Prereq: admission to the program. Max hours: 9 Credits. **Semester Hours:** 3 to 9

EDUC 5840 - Independent Study: EDUC

Master's. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

EDUC 5950 - Master's Thesis

Repeatable. Max hours: 16 Credits. **Semester Hours:** 1 to 8

EDUC 6000 - Special Topics: Administrative Leadership and Policy Studies

Specific topics vary; focus is on faculty-developed options to standard course offerings to facilitate program development and distance-learning activities. Repeatable. Max Hours: 40 Credits. **Semester Hours:** 1 to 10

EDUC 6840 - Independent Study

Max hours: 4 Credits. **Semester Hours:** 1 to 4

EDUC 6951 - Master's Thesis

Repeatable. Max hours: 16 Credits. **Semester Hours:** 4 to 4

EDUC 7100 - Leadership in Education

Orients students to broad periods of administrative science, philosophical and behavioral underpinnings of various models and types of leadership, and develops doctoral-level analysis and writing skills to articulate self-knowledge as leader and the application of appropriate leadership practices in context. Prereq: admission to the doctoral program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7230 - Organizational Performance In Educational Contexts

Explores connections between organizational behaviors and outcomes as well as external and internal factors influencing organizational behavior. The course focuses on how education organizations learn, how they can use that learning to improve performance, and what techniques are available to help understand present performance and affect future performance. Prereq: permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7500 - Strategic Human Capital Development

This course focuses on understanding and leveraging the personnel function of an educational organization. You will learn how to strategically align and maximize your human capital with organizational strategic objectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7510 - Strategic Organizational Management

An effective partnership between the board, community and institutional leader is essential to fulfilling the mission of an educational organization. This course examines the importance of strategic visioning, strategic planning, and specific communication strategies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7520 - Strategic System Improvement

The fundamental purpose of educational organizations (schools, districts, community colleges, higher education, non-profits) is to ensure high levels of learning for all. This course addresses topics such as data development and management, accountability, curriculum assessment and instruction, continuous improvement, and professional learning. Max hours: 3 Credits.

Semester Hours: 3 to 3

EDUC 7530 - Strategic Leadership Development

Successful leaders are able to articulate, protect and promote what is important. This course will examine the challenges of educational leadership and help participants clarify the core values essential to their success as a leader. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7600 - Higher Education Policy and Governance

In this course, students are challenged to explore the governance and policy environment of Higher Education, to understand the multiple layers of governance and the complex web of policy-making, to analyze the differences among systems of governance, and to evaluate the essential components and consequences of policies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7610 - Strategic Enrollment Management in Higher Education

Course is designed to deepen the understanding of the complexities of strategic enrollment management as research and practice, delving into the breadth of its critical issues and rapidly developing context, including the student lifecycle; the focus on equity and inclusion; emerging models for student success; and financial implications. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7620 - Contemporary Issues in Higher Education

This course is a study of the critical, contemporary issues in higher education and the impact on institutions' goals for equity and student success. Students in the course will reach beyond the current context, understanding the origins of critical questions, and the impact of these issues on leadership decision-making. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7640 - Higher Education Finance and Strategic Resource Allocation

This course is designed to introduce students to the complexity of higher education funding, the vast variations across systems, and the critical role of data informed decision making in strategic resource allocation its impact on student access and success. Students will enhance their own capacity to contextual decisions and consider parameters. Max hours: 3 Credits.

Semester Hours: 3 to 3

EDUC 7650 - Data-Informed Decision-Making and Predictives in HED

Course is designed to elevate the understanding of data-informed decision making and predictives as it relates to research & practice; defining leaders responsibility in creating a datadriven and ethically responsible culture using a lens of equity and inclusion. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

EDUC 7840 - Independent Study: EDUC

Doctoral. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 4

Education and Human Dvelpmnt

EDHD 1019 - Introduction to Urban Education

In this course you will examine the sociological issues related to urban schools, communities, and teaching. We will looks at such topics as school culture, diversity, ethnicity, and social realities in American schools. Students will critically examine current education issues that affect their lives, their local community, and P-12 classrooms throughout the state and the country. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDHD 1030 - Early Field Experience and Seminar

Working within the community to support children's learning requires competencies explored in this course. The experiences of seminar, paired with work at a local school or community-based context, will help students develop theoretical grounding as a community based educator. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDHD 1930 - Community Based Field Experience & Seminar

Students learn the dispositions of a community-grounded educator and develop an asset-based lens for working with students, families, & communities through 60 hours of required field experience and a mediated seminar. Prereq: Must have one semester successfully completed at UCD prior to enrollment unless a transfer student; must have completed CBI Background Check & Oath & Consent process prior to enrolling. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDHD 2050 - Current Topics in Education and Human Development

Current topics that explore community and educational settings in Education and Human Development (EDHD) to be selected by the instructor. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 3

EDHD 2840 - Independent Study in Education & Human Development

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

EDHD 2910 - Service Learning in Education and Human Development

This course prepares our students to become responsible and resourceful citizens who partner with community organizations and work to serve a wide range of needs and issues within culturally and linguistically diverse environments. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

EDHD 2930 - Learning & Development Field Experience & Seminar

Teacher candidates engage in field experience 2, half-days per week in early childhood and primary classrooms working with children to support literacy learning while also observing, documenting and reflecting on how learning & development is facilitated. Prereq or coreq: LCRT 3720 and LCRT 4710. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 2 to 3

EDHD 3930 - Diverse Learners Field Experience & Seminar

EDHD 3930 is a comprehensive clinical block field experience designed to support teacher candidates' learning of issues and practices relevant to students with disabilities and English language learners. A seminar will mediate teacher candidates' experiences from their various classroom settings. Prereq or Coreq: SPED 4030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDHD 4050 - Special Topics in Education and Human Development

Advanced study of special topics that examine community and educational settings in Education and Human Development (EDHD) to be selected by the instructor. Maybe repeated for credit. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

Educational Foundations

EDFN 1000 - Equality, Rights & Education

Examines the history of U.S. public schooling through landmark court cases. Investigates/analyzes how apartheid came to be institutionalized, how forces of desegregation achieved a series of momentous victories, and how those victories have been undermined through the resegregation of schools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 1111 - Freshman Seminar

Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 3000 - Undocumented Mexican Immigration

The socio-legal construction of Mexican undocumented immigration from the early decades of the twentieth century to the current era is addressed. Social justice questions including access to higher education arising from the racialization of Latino/a immigrants are also examined. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 4000 - Food Justice in City & Schools

Food justice examines systemic inequities in access to healthy food. The history of school/community gardens, developments in urban agriculture and school/city policies are examined. The intersection of urban agriculture, hunger, and schooling/learning is examined in school gardens and school farmer's markets. Cross-listed with EDFN 5000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 4001 - Problematizing Whiteness: Educating for Racial Justice

Critical Whiteness Studies provides a deeper analysis of race that accounts for both sides of the race coin: the plight of people of color AND how Whites are complicit. This class looks deeper into how race operates within White contexts and how that impacts people of color so we bridge how Whites AND people of color can work together towards a racially equitable society. Cross listed with ETST 4010 and EDFN 5001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 4010 - Social Foundations and Cultural Diversity in Urban Education

This course focuses on the role of cultural diversity in the United States school system and what this means for educators oriented toward social justice. The intention of this course is to have teacher candidates engage in exploring the most salient issues surrounding education in the United States, developing an understanding of the complex relationships between schools and the larger society of which they are a part. This course closely examines important contemporary and historical societal issues such as race, social class, gender, ethnicity, sexual identity, politics, and dynamics of power and privilege. Cross-listed with EDFN 5010. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours or students in the Education Minor EDST-MIN or CLAS secondary students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5000 - Food Justice in City & Schools

Food justice examines systemic inequities in access to healthy food. The history of school/community gardens, developments in urban agriculture and school/city policies are examined. The intersection of urban agriculture, hunger, and schooling/learning is examined in school gardens and school farmer's markets. Cross-listed with EDFN 4000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5001 - Problematizing Whiteness: Educating for Racial Justice

Critical Whiteness Studies provides a deeper analysis of race that accounts for both sides of the race coin: the plight of people of color AND how Whites are complicit. This class looks deeper into how race operates within White contexts and how that impacts people of color so we bridge how Whites AND people of color can work together towards a racially equitable society. Cross listed with ETST 4010 and EDFN 4001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5010 - Social Foundations and Cultural Diversity in Urban Education

This course focuses on the role of cultural diversity in the United States school system and what this means for educators oriented toward social justice. The intention of this course is to have teacher candidates engage in exploring the most salient issues surrounding education in the United States, developing an understanding of the complex relationships between schools and the larger society of which they are a part. This course closely examines important contemporary and historical societal issues such as race, social class, gender, ethnicity, sexual identity, politics, and dynamics of power and privilege. Cross-listed with EDFN 4010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5050 - Critical Issues in American Education

Examines the social values and forces in American society which shape or influence the aims, philosophies, methods, content, and problems of the American educational enterprise. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5700 - Global Education and 21st Century Learning

Explore challenges and opportunities of global citizenship. Articulate framework for 21st Century Learner. Examine influence of social and political movements, including colonization, on the development of communities and cultures. Explore connections and intersections of local and global issues and systems. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 5800 - Special Topics

Topics will vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

EDFN 7240 - Culture of Education Policy

This course examines major issues in education policy analysis. Students will be required to critically analyze an educational policy issue uncovering the context, determining how the policy was implemented and what the outcomes were, intended as well as unintended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7250 - School and Society

Policies and educational reforms affecting the technical core of schooling: curriculum, teaching, learning, assessment, and organization. Students develop research and policy analysis skills and investigate social and political factors affecting what is taught and learned in schools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7400 - Epistemologies: Ways Knowing, Res Paradigms, & Counter-Epistemologies

Epistemologies addresses conceptions and approaches to ways of knowing including intellectual traditions and their history as well as epistemological counter-stories of marginalized and subaltern ways of knowing that expose the contingency and bias of dominant forms of knowing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7410 - Power and Privilege: The Social Construction of Difference

This course will focus on understanding culture and diversity, recognizing the role of power and privilege in both individual and institutional interactions, and developing a philosophy of social justice and equity. Prereq: Doctoral Student Status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7420 - Foundations of Education in Urban and Diverse Communities

This course focuses on the complex relationship between schools and the larger society of which they are a part. Emphasizing historical, political, and sociological perspectives, this course explores the interplay of social systems in education (economic, political, social, health, legal), analyze education policies, and the intended and unintended consequences of these processes. Prereq: Doctoral Student Status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7430 - Working with Families and Communities

Designed for veteran and novice teachers and administrators to add to their present understanding of the function of families and communities in contemporary society. Participants examine key theoretical texts of important scholars in the field of human development, with an emphasis on topics such as the politics of everyday life, the salience of linguistic & cultural identity in the life of families/communities, and the political-economic and social factors that shape the "life course" of families/communities. Prereq: Doctoral Student Status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7833 - Culture and Critical Theory

Provides an introduction to critical inquiry. General topics include: the development and of the concept of culture, the development and application of critical theory, critical race theory and critical pedagogy. Through the course, students are guided to explore critical theory work in their own field. Max hours: 3 Credits. **Semester Hours:** 3 to 3

EDFN 7840 - Independent Study: EDFN

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

Electrical Engineering

ELEC 1201 - Introduction to Electrical Engineering

Introduces the field of electrical engineering and the computer -- its primary tool. ELEC faculty members explain the various specialties within the field by demonstration. Word processors, spreadsheets, and engineering software are introduced. Note: This course is not available to students who have taken ELEC 2142. ENGR 1000 cannot be substituted for ELEC 1201. Prereq: High School Trigonometry. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 1510 - Logic Design

The design of combinatorial and sequential switching circuits. Topics include Boolean algebra, Boolean function minimization technique, combinatorial circuit analysis and synthesis, synchronous sequential circuit analysis and synthesis, algorithmic state machine design, asynchronous sequential circuit analysis and synthesis. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 1520 - Programming for Electrical Engineers

An introductory course in programming using C/C++ and Python. The objective of the course is to examine the design of programs using language concepts, data structures, algorithms, and object-oriented design techniques to solve fundamental engineering problems. Students develop skills to program, construct data structures, and test & debug solutions, while gaining knowledge of the fundamental elements and operation of computer systems. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 2132 - Circuit Analysis I

Introduces circuit analysis: basic principles, operational amplifier circuits, first-order and second-order circuits, steady-state sinusoidal analysis with phasor mathematics. Prerequisite: Math 2411 with a C- or higher and Phys 2311 with a C- or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 2142 - Circuit Analysis II

Sequential course after ELEC 2132. Topics include: Solution of circuits using Laplace transforms, frequency domain analysis, additional steady-state solutions, Bode plots, active filters, pulses, impulses, and computer-aided analysis. Prerequisite: Math 2421 with a C- or higher and Phys

2331 with a C- or higher, Elec 2132 with a C- or higher. This course can be taken stand alone without a lab. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 2520 - Embedded Systems Engineering 2

A second semester computer engineering course covering basic computer architecture including CPU's, memory, peripherals, and operating systems including development tools, Kernel selection, file systems, and storage device manipulation, boot loaders, USB, networking, device drivers, and real-time operating system usage. Prerequisite: ELEC 1520 with a C- or higher. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ELEC 2531 - Logic Laboratory

Experiments in digital logic utilizing both computer simulation and actual analysis using integrated circuits. Initially, combinational logic circuits are studied, including circuits such as binary adders and multipliers, followed by sequential circuits, including counters. Meters and oscilloscopes are introduced. Use of computer-aided design tools facilitating design, simulation, and implementation of digital systems using field-programmable logic devices are an integral part of the entire course. Prereq: ELEC 1510. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 2552 - Sophomore Circuits Laboratory

Conduct experiments in circuit measurement using oscilloscopes, power supplies, and function generators. Verify basic circuitry, basic circuit theorems such as Ohm's Law, Kirchoff's Law, and Thevenin's theorem and Norton's theorem. Learn by experiments: impedance functions, transfer functions, resonance, Fourier series and analog filters. Prereq/coreq: ELEC 2142. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 3030 - Electric Circuits and Systems

This basic electrical engineering course is for non-majors (does not apply to BSEE degree). Students study circuit analysis, transformers, electric motors, and simple electronic circuits (diodes and transistors). Prereq: MATH 2421 and PHYS 2331 with a C- or higher. Restriction: Restricted to majors within the College of Engineering, Design and Computing. Cross-listed with MECH 3030. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3133 - Electromagnetic Fields

Fundamental physics and applications of electric and magnetic fields are covered. Topics include: vector analysis in multiple coordinate systems, Maxwell's equations in free space and material regions including boundary conditions, static and quasi-static electric and magnetic fields, uniform plane waves for free space and for materials. Prerequisite: MATH 2421 with a C- or higher and PHYS 2331 with a C- or higher, ELEC 2132 with a C- or higher, MATH 3195 with a

C- or higher. Restriction: Restricted to students within the College of Engineering, Design and Computing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3164 - Energy Conversion

Theory of transformers. Energy conversion concepts. Basic rotating energy converters, including direct current, synchronous and induction machines and applications. Prereq: ELEC 2142. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3215 - Electronics I

The learning objective is fundamental semiconductor theory as applied to electronic circuits. Topics include: semiconductor theory, P-N junctions and diode applications, power supply design, transistor (BJT) theory and applications, low-frequency amplifiers, FET and MOSFET devices. Prereq: ELEC 2132 with a grade of C- or higher, PHYS 2331 with a grade of C- or higher and CHEM 1130 OR ENGR 1130 with a grade of C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3225 - Electronics II

BJT and FET transistor models at high frequencies, multistage amplifiers, frequency response of amplifiers. Feedback, operational amplifiers, oscillators, power amplifiers, and introduction to power electronics. Prereq: ELEC 2142 and 3215. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3316 - Signals and Systems

Introduces the fundamentals of signals and systems analysis. Topics include: time domain analysis of continuous and discrete time systems, frequency domain (Laplace and z-transform) analysis, applications to filters and feedback systems, Fourier transform for both continuous and discrete time signals, sampling and signal reconstruction, applications to communication systems and state space representation. Learning experience is enhanced by using MATLAB-based examples and experiments. Prereq: ELEC 2142 with a C- or higher, MATH 3195 with a C- or higher or MATH 3191 and MATH 3200 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3651 - Digital Hardware Design

The specification and design of large digital hardware systems. Applications include using a hardware description language and simple digital control circuits. Prereq: ELEC 2531 and ELEC 2520. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3715 - Electronics Laboratory

Design and experimental verification of the operation of filter circuits, power supply circuits, transistor amplifier circuits and FET circuits. Prereq: ELEC 2552. Prereq/Coreq: ELEC 3215. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

ELEC 3724 - Energy Conversion Laboratory

Basic electro-mechanical energy conversion concepts as applied to the synchronous machine, induction machine, and DC machine; the transformer; applications. Prereq: ELEC 2142. Prereq or Coreq: ELEC 3164. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 3735 - Junior Laboratory

Design and measure: several nonlinear op-amp circuits, a multi-stage amplifier, and a complementary-symmetry output stage. Oral presentations on experiments to be given. Prereq: ELEC 3715. Prereq/Coreq: ELEC 3225. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

ELEC 3817 - Engineering Probability and Statistics

Topics include: definition of probability, conditional probability, independence, combined experiments and Bernoulli trials, random variables, joint distribution and density functions, correlations, sample mean and variance. Also, introduction to random processes, auto and cross correlation functions, spectral density of random signals, responses of a linear system to random inputs. Prereq: MATH 3195 and 2421. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 3939 - Internship

Students gain engineering design experience involving application of specific technical concepts and skills in a supervised industrial environment. (Must have approval from ELEC faculty.) Prereq: ELEC 2142. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 4005 - IC Design

Explores digital integrated circuit design including MOS processing steps, physical operation, building blocks of digital circuits, advanced nMOS, pMOS and CMOS circuit design, silicon VLSI technology and circuit and chip level. Spice and lay-out Editor are used. The physical relationship between circuit design and actual silicon layout and structure and technology are emphasized. Prereq: Graduate standing or permission of instructor. Prereq: ELEC 3225. Cross-listed with ELEC 5005. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4025 - Device Electronics

A course relating performance and limitations of solid state devices to their structures and technology. For both advanced circuit and device engineers. Semiconductor physics and

technology, pn-junction and MOS devices used in modern integrated circuits. Prereq: ELEC 3225 and senior standing. Cross-listed with ELEC 5025. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4133 - Advanced Electromagnetic Fields

A course focused on electromagnetic waves. Topics include: electromagnetic power, reflection and transmission of uniform plane waves in layered media, rectangular wave guides, two-conductor transmission lines, Smith Chart representation of wave impedance and reflection. Prereq: ELEC 3133. Cross-listed with ELEC 5033. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4134 - Introduction to Microwave Circuit Design

This course provides the basic principles of microwave circuit design, including transmission line theory, network parameters, signal flow graphs, design of high frequency matching networks, filters, hybrids and couplers using waveguide elements, high frequency amplifier and mixer design. Prereq: ELEC 3133. Cross-listed with ELEC 5134. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4136 - Control Systems Analysis

Introduces students to the fundamentals of analysis and design of feedback systems. Topics include: mathematical models of linear continuous-time systems applied to modeling physical systems in the time and frequency domain, control system characteristics, Routh's stability and transient response analysis, Nyquist stability and polar plots, analysis and design of linear control systems by root locus and frequency response, methods, compensator implementation, finite-precision numerical effects, round-off errors, and computer-based design applications. Prereq: ELEC 3316. Coreq: ELEC 3817. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4164 - Electric Drive Systems

Covers power electronics drives for rotating electric machinery. Topics include power electronics elements for drives, load characteristics, dynamic modeling of AC machines, fundamental control algorithms, simulation and practical commercial drives. Prereq: ELEC 3164. Cross-listed with ELEC 5164. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 4170 - Electric Drive Systems Laboratory

Offers hands-on experience on rotating electric machine drive simulations and commercial systems. Sessions include pulse-width modulation (PWM) inverter, induction, DC, and synchronous machine drives. Matlab/Simulink and a commercial inverter will be utilized. Cross-listed with ELEC 5170. Prereq or Co-req: ELEC 4164/5164 or equivalent. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4174 - Power Electronic Systems

Topics to be covered include: power electronics fundamentals and applications in power systems; uncontrolled, semi-controlled and fully controlled power semiconductors; converters design and control. Prereq: ELEC 3164. Cross-listed with ELEC 5174. Max hours: 3 Credits.

Semester Hours: 3 to 3

ELEC 4184 - Power Systems Analysis

Topics to be covered include: complex power; per-unit quantities; modeling of generators, transformers and transmission lines; power flow problem; economic dispatch; faults and sequence networks; and an introduction to power system protection and dynamics. Prereq: ELEC 3164. Cross-listed with ELEC 5184. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4225 - Advanced Electronics

Switching state models of discrete components and integrated circuits, including logic gates, comparators, and operational amplifiers. Input, output, and transfer characteristics. Non-ideal properties. Analog-digital and digital-analog conversion. MOS-integrated circuits. Prereq: ELEC 3215, 3225. Restriction: Restricted to students within the College of Engineering, Design and Computing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4247 - Communication Theory

Introduces the principles of analog and digital communication systems. Series expansion and Fourier Series and transforms. The sampling theorem. Stochastic principles and noise. Linear systems and Fourier analysis. Design of transmitters and receivers: modulation and demodulation schemes. Some information theoretic concepts: source coding, channel coding, channel capacity and performance measures. Prereq: ELEC 3316 and 3817. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4248 - Digital Communication Systems

Introduces digital communication systems covering elements of information theory; mathematical representation of signals and systems; modulation and demodulation for the additive Gaussian noise channel; performance analysis of various transmission formats; synchronization; coded waveforms; decoding algorithms; and other related topics. Prereq: ELEC 3316, 3817; recommended ELEC 4247. Cross-listed with ELEC 5248. Max hours: 3 Credits.

Semester Hours: 3 to 3

ELEC 4249 - Space Communications Systems

Presents the art of space communications system design around the framework of the link budget and the essential analysis tool of the radio system designer. The budget is examined

from theoretical and practical viewpoints. Pointers and motivation for further study in each of the related engineering disciplines are provided. Topics to be examined include satellite orbits, propagation, antennas, noise, modulation, coding and hardware or software. Prereq: Permission of instructor. Cross-listed with ELEC 5249. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4276 - Digital Control Systems

Topics to be covered include: discrete-time systems and the z-transform, characteristics of open-loop and closed-loop discrete-time systems, time-response characteristics and stability analysis, design of digital and hybrid control systems using z-transform, root locus, frequency domain, and state variable compensation techniques, compensator on, implementation, and computer-based design applications. Prereq: ELEC 3316 and ELEC 3817. Cross-listed with ELEC 5276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4309 - Senior Design Project I

Design methodology and tools, project planning and team building, ethics in engineering and research, career planning and portfolio building. Project designs are completed and presented to the class. Prereq: Students must complete their Senior/30 hour check prior to enrollment. Prereq/Coreq: All required ELEC 3000-level classes and labs. ELEC 4309 and ELEC 4319 must be completed in subsequent academic semesters. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4319 - Senior Design Project II

Project designs completed in ELEC 4309 are constructed and tested. Oral and written presentations of the completed project performance are required. Prereq: ELEC 4309 in subsequent academic semester. Students must complete their Graduation Agreement prior to enrollment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4333 - Introduction to Computational Electromagnetics

An intro to computational electromagnetics based on the Finite Difference Time-Domain (FDTD) covering, finite difference methods, the Yee algorithm, numerical error, stability, boundary conditions, source excitations, hands-on programming experience and application of FDTD to real problems. Prereq: ELEC 3133. Cross-listed with ELEC 5333. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4373 - Optical Engineering

This course introduces some of the most important concepts in optical engineering and prepares students a solid foundation to apply them to applications in the industry and academic research. Prereq: ELEC 3133 Electromagnetic Fields. Cross-listed with ELEC 5373. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4375 - Engineering Neuroscience

In this course, mathematical models and data processing strategies will be introduced as well as other cutting-edge research techniques to help students understand how these techniques can be applied to solve modern neuroscience problems. Prereq: ELEC 3316 or graduate standing. Cross-listed with ELEC 5735 and NRSC 7674 (Anschutz Medical Campus course). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4406 - Control Systems Laboratory

This lab includes system identification, design of velocity control systems, design of PID controllers and control systems using state variable feedback. Prereq or Coreq: ELEC 4136. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4423 - Radio Frequency Laboratory

Projects involve modern RF analyzers, wave-guide devices, time-domain techniques, characterization of filters/amplifiers, signal propagation and scattering, harmonic mixing, and radio frequency identification. Students will gain experience using MATLAB for data acquisition and processing. Prereq: ELEC 3133, 3225 and 3735. Cross-listed with ELEC 5423. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4435 - Advanced Electronics Laboratory

Projects related to digital logic, analog and digital switches, A/D and D/A converters, and design of signal filters. Prereq: ELEC 3225 and 3735; Prereq or Coreq: ELEC 4225. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4444 - Power Systems Laboratory

This lab introduces the student to modern computational tools used in power system analysis. Algorithms to solve the "power flow problem," the "economic dispatch problem," and the "optimal power flow problem" are discussed and implemented in the Matlab-Simulink mathematical analysis software package. Coreq: ELEC 4184. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4466 - Adaptive Control System Design

Basic concepts in adaptive feedback control. Overview of application areas. Stability of non-linear systems and hyperstability approach to the design of adaptive controllers. Passivity concept and Liapunov stability. Design of model reference adaptive systems, self-tuning regulators, stochastic adaptive, and dual control systems. Computer-based design applications. Emphasis is placed on design projects. Prereq: ELEC 4136 or 4276. Cross-listed with ELEC 5466. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4467 - Communications Laboratory

Analysis and design in three main areas: traditional analog communications at low and medium frequencies, digital communications, and microwave communications systems. Extensive use of spectrum analysis from low frequencies up to microwave range. Projects include noise, AM, FM, PM, PLL, sampling, quantizing, encoding, TDM, FSK, QPSK, 16QAM, receivers, and satellite communications systems. Prereq: ELEC 3735; Prereq or Coreq: ELEC 4247 or ELEC 4248. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4474 - Power Electronics Laboratory

The power electronics laboratory introduces students to seven fundamental switchmode power conversion topologies, along with voltage and current feedback control, assembled on a reconfigurable power pole circuit board with external power supplies and laboratory. Coreq: ELEC 4174. Cross-listed with ELEC 5474. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4501 - Microprocessor Based Design

Covers advanced treatment of embedded system design using microprocessors. Analog input circuitry is interfaced to a microprocessor, and a PC board layout is created to develop a complete system design. Software/Operating System is implemented for realtime I/O. Prereq/Coreq: ELEC 3651. Cross-listed with ELEC 5501. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4511 - Hardware-Software Interface

Computer engineering methods in hardware and software design applied to problems drawn from the mini- and micro-computer systems field. Hardware and software techniques for the design of combined hardware or software are developed. Interface and real-time programming techniques are considered. Graduate level requires additional projects and homework. Prereq: ELEC 3651. Cross-listed with ELEC 5511. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4521 - Microprocessor Laboratory

Provides support for the projects assigned in ELEC 4501 - a complete embedded system is designed, built and tested. Coreq: ELEC 4501. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4555 - VLSI Circuit Simulation

Computer methods for large integrated circuits. Theory and practice of VLSI circuit simulation. Nodal formulations of networks. Computer generation of sensitivities. Modeling active devices. DC solution of nonlinear networks. Prereq: ELEC 3225. Cross-listed with ELEC 5555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4561 - Hardware-Software Lab

Projects related to the software interface of a processor to external devices. Topics include A/D converters, serial and parallel interfaces. Prereq: ELEC 3651 and Coreq: ELEC 4511. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 4637 - Digital Signal Processing

Discrete-time signals and systems in the time and frequency domain. Digital filter structures, design of FIR filters by windowing, optimum approximations of FIR filters. Design of digital IIR filters from continuous time domain. Computer-aided design of digital filters. The discrete Fourier transform and DSP algorithm implementation. Analysis of finite word length effects. Application of digital signal processing. Prereq: ELEC 3316 and 3817. Cross-listed with ELEC 5637. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4644 - Introduction to Biomedical Imaging

An important component of the recent expansion in biomedical engineering is the area of biomedical imaging. This ELEC 4644/5644 course is an introduction to biomedical imaging systems, not only covering the fundamentals of imaging physics but also the applications of four primary biomedical imaging modalities: X-Ray Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Nuclear Medicine (i.e. PET, SPECT), and Ultrasound Imaging. Prereq: ELEC 3316. Cross-listed with ELEC 5644. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4678 - Quantum Electronics

The course teaches students to understand the basic concepts of quantum mechanics and to learn the mathematical tools needed and to be familiar with some of the technical knowledge that applies quantum mechanics to various advanced problems in engineering. Prereq: PHYS 2331 and MATH 3195. Cross-listed with ELEC 5678. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4688 - Introduction to Nondestructive Testing

A basic, broad understanding of the principles of nondestructive testing and evaluation is provided. The main objective of this course is to attract students to NDT fields and eventually help address the increasing needs of NDT engineers and technicians. Interaction and collaboration with local NDT industries will also be emphasized. As an introductory course, a broad interdisciplinary knowledge of NDT will be covered in the following sub-areas: Visual, Penetrant, Magnetic Particle, Eddy Current, Microwave, Ultrasonic, and Radiography. Prereq: ELEC 1201 and ELEC 3316. Cross-listed with ELEC 5688. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4723 - High Performance Computer Architecture

High Performance Computer Architecture covers the design of advanced computing systems. In particular, the course includes the design of modern microprocessors, characteristics of the memory hierarchy, and issues involved in multithreading and multicore architectures. Prereq: ELEC 3651. Cross-listed with ELEC 5723. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4727 - Computer Vision & Image Processing Acceleration

Real-time constraints on computer-vision and image processing applications have motivated numerous explorations of multicore architectures to provide more efficiency through hardware parallelism and acceleration. This course undertakes the study of image processing and computer vision algorithms in the context of parallel hardware. Cross-listed with ELEC 5727. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 4755 - Renewable Energy Systems

This course focuses on the modeling, analysis and control of grid-connected wind and photovoltaic energy systems. Prereq: ELEC 3164. Cross-listed with ELEC 5755. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 4800 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 4840 - Independent Study: ELEC

An opportunity for independent creative work. Prereq: Permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 5005 - IC Design

Explores digital integrated circuit design including MOS processing steps, physical operation, building blocks of digital circuits, advanced nMOS, pMOS and CMOS circuit design, silicon VLSI technology and circuit and chip level. Spice and lay-out Editor are used. The physical relationship between circuit design and actual silicon layout and structure and technology are emphasized. Prereq: Graduate standing or permission of instructor. Cross-listed with ELEC 4005. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5025 - Device Electronics

A course relating performance and limitations of solid state devices to their structures and technology. For both advanced circuit and device engineers. Semiconductor physics and technology, pn-junction and MOS devices used in modern integrated circuits. Prereq: ELEC 3225 and senior standing. Cross-listed with ELEC 4025. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5033 - Advanced Electromagnetic Fields

A course focused on electromagnetic waves. Topics include: Poynting's power theorem, reflection and transmission of uniform plane waves in layered media, two-conductor transmission lines, rectangular wave guides, Smith Chart elements of radiation and antenna. Prereq: ELEC 3133 and permission of instructor for undergraduates. Cross-listed with ELEC 4133. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5133 - Electromagnetic Radiation and Antenna

Solution of inhomogeneous wave equation. Radiation fields of elementary dipole, linear wire antenna, uniform and non-uniform linear arrays. Array synthesis. Farzone field patterns, directivity and beamwidth. Diffraction fields of aperture sources, horn antenna, conic surface reflector sources, lens antenna. Ray tracing methods. Transient-receive link. Selected Topics. Prereq: ELEC 4133, graduate standing and permission of instructor for undergraduates. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5134 - Introduction to Microwave Circuit Design

This course provides the basic principles of microwave circuit design, including transmission line theory, network parameters, signal flow graphs, design of high frequency matching networks, filters, hybrids and couplers using waveguide elements, high frequency amplifier and mixer design. Prereq: ELEC 3133. Cross-listed with ELEC 4134. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5164 - Electric Drive Systems

Covers power electronics drives for rotating electric machinery. Topics include power electronics elements for drives, load characteristics, dynamic modeling of AC machines, fundamental control algorithms, simulation and practical commercial drives. Prereq: ELEC 3164. Cross-listed with ELEC 4164. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 5170 - Electric Drives Systems Laboratory

Offers hands-on experience on rotating electric machine drive simulations and commercial systems. Sessions include pulse-width modulation (PWM) inverter, induction, DC, and synchronous machine drives. Matlab/Simulink and a commercial inverter will be utilized. Cross-listed with ELEC 4170. Prereq: ELEC 4164 or equivalent. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 5174 - Power Electronic Systems

Topics to be covered include: power electronics fundamentals and applications in power systems; uncontrolled, semi-controlled and fully controlled power semiconductors; converters

design and control. Prereq: ELEC 3164 and graduate standing or permission of instructor. Cross-listed with ELEC 4174. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5184 - Power Systems Analysis

Topics to be covered include: complex power; per-unit quantities; modeling of generators, transformers and transmission lines; power flow problem; economic dispatch; faults and sequence networks; and an introduction to power system protection and dynamics. Prereq: ELEC 3164 and graduate standing or permission of instructor. Cross-listed with ELEC 4184. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5194 - Power Systems Operation and Control

This course introduces the student to various operational strategies the power industry uses today to operate the power system. Topics to be covered include: economic dispatch, unit commitment, optimal power flow (linear and nonlinear), transmission congestion, control areas, state estimation, and an introduction to power markets. Prereq: ELEC 4184 or ELEC 5184 or graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5210 - Optimization Methods in Engineering

Unconstrained optimization, gradient methods, conjugate direction methods, data fitting and function estimation. Applications in control, system identification and radar systems. Optimization over a convex set, LMS algorithms in adaptive systems, convergence properties. Nonlinear programming, Lagrange multipliers, projection algorithms, games and minimax theorem, application to H infinity control, communication and signal processing. Prereq: MATH 3191 and 3200/3195. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5220 - Methods of Engineering Analysis

Real sequences and infinite series, convergence of the parameter estimates in self-tuning control. Uniform convergence and application to adaptive FIR filters. Improper integrals, application in filtering, prediction and communication. Analytic functions, Hardy spaces, maximum modulus theorem. Argument principle and Nyquist stability criteria. Calculus of residues, LQG problem. Conformal mappings, Nevelinna-Pick problem. Prereq: MATH 3191 and 3200/3195, graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5230 - Advanced Linear Systems

Mathematical description of both continuous and discrete-time systems; vector, normed and inner-product spaces; state-space, impulse response and transfer function descriptions; state-transition response matrices; eigenvalues and eigenfunctions; controllability; canonical form; state feedback; observers; realization theory. Prereq: MATH 3191, MATH 3200/3195 and permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5248 - Digital Communication Systems

Introduces digital communication systems covering elements of information theory; mathematical representation of signals and systems; modulation and demodulation for the additive Gaussian noise channel; Performance analysis of various transmission formats; synchronization; coded waveforms; decoding algorithms; and other related topics. Prereq: ELEC 3316, 3817; recommended ELEC 4247. Cross-listed with ELEC 4248. Max hours: 3 Credits.

Semester Hours: 3 to 3

ELEC 5249 - Space Communications Systems

Presents the art of space communications system design around the framework of the link budget and the essential analysis tool of the radio system designer. The budget is examined from theoretical and practical viewpoints. Pointers and motivation for further study in each of the related engineering disciplines are provided. Topics to be examined include satellite orbits, propagation, antennas, noise, modulation, coding and hardware or software. Prereq: Permission of instructor and graduate standing. Cross-listed with ELEC 4249. Max hours: 3

Credits. **Semester Hours:** 3 to 3

ELEC 5250 - Information Theory

Introduces information theory and its application in computer science, communication theory, coding and applied mathematics. Entropy, mutual information, data compression and storage, channel capacity, rate distortion, hypothesis testing. Error detecting and correcting codes, block codes and sequential codes. Prereq: ELEC 3817 or CSCI 4535 or MATH 3800. Max hours: 3

Credits. **Semester Hours:** 3 to 3

ELEC 5252 - Computer Communication Networks

Comprehensive study of issues arising in modern computer-communication networks, both wire-line and wireless, carrying traffics with heterogeneous characteristics. A conceptual and analytical approach to the design of network protocols in harmony with the appropriate modeling of the traffic and network environments. Issues covered include routing, transmission, performance monitoring, as well as and network management in ATM multi-media networks. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits.

Semester Hours: 3 to 3

ELEC 5276 - Digital Control Systems

Analysis and design of discrete-time systems, as occurs when a digital computer is used to control physical systems. Topics include difference equations, Z-transform, sampled-data system modeling, sampling, discrete equivalents, stability, and discrete control design by root locus, direct design, frequency-response, and state space. Prereq: ELEC 3316, ELEC 3817, and

graduate standing. Cross-listed with ELEC 4276. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 5294 - Advanced Power Electronic Systems

The course focuses on the design, modeling, modulation, control and simulation of three-phase two-level voltage sourced inverters with emphasis on applications. Student will also be introduced to advanced topologies including diode clamped multilevel inverters, modular multilevel inverters and matrix converters. Prereq: ELEC 4174 or ELEC 5174. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5333 - Introduction to Computational Electromagnetics

An intro to computational electromagnetics based on the Finite Difference Time-Domain (FDTD) covering, finite difference methods, the Yee algorithm, numerical error, stability, boundary conditions, source excitations, hands-on programming experience and application of FDTD to real problems. Prereq: ELEC 3133 or grad standing. cross-listed with ELEC 4333. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5334 - Advanced Computational Electromagnetics

This course on advanced computational electromagnetics covers Green's theorems and identities, vector potential theory, equivalence principles, numerical linear algebra, numerical integration, method of weighted residuals, integral equation methods, method of moments, and Prereq: ELEC 4133 or ELEC 5133 or grad standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5373 - Optical Engineering

This course introduces some of the most important concepts in optical engineering and prepares students a solid foundation to apply them to applications in the industry and academic research. Prereq: ELEC 3133. Cross-listed with ELEC 4373. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5375 - Engineering Neuroscience

In this course, mathematical models and data processing strategies will be introduced as well as other cutting-edge research techniques to help students understand how these techniques can be applied to solve modern neuroscience problems. Prereq: ELEC 3316 or graduate standing. Cross-listed with ELEC 4735 and NRSC 7674 (Anschutz Medical Campus course). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5423 - Radio Frequency Laboratory

Projects involve modern RF analyzers, waveguide devices, time-domain techniques, characterization of devices, signal propagation and scattering, harmonic mixing, and radio frequency identification. Students will gain experience using MATLAB for data acquisition and processing. Graduate students will explore projects in greater detail. Cross-listed with ELEC 4423. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 5433 - Fundamentals and Applications of Plasmas

This course provides an introduction to plasmas, also known as the fourth state of matter, in nature and industry. Topics covered include single particle motions, plasma kinetic and fluid theory, cold and warm plasma models and interaction of electromagnetic waves with plasmas. Applications ranging from space sciences to medicine are explored. Prereq: ELEC 3133 for undergraduate students or permission of the instructor. No prerequisite for CEDC graduate students. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5436 - Nonlinear Control Systems I

Analysis and synthesis of nonlinear feedback control systems. Linearization's and stability in the small, equivalent linearization and the describing function. The dual input describing function. Stability in the large and the second method of Lyapunov. Stability of time-varying systems. Popov's method and extensions. Prereq: ELEC 4136 or 4276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5444 - Power System Laboratory

This lab introduces the student to modern computational tools used in power system analysis. Algorithms to solve the "power flow problem", the "economic dispatch problem", and the "optimal power flow problem" are discussed and implemented in the Matlab-Simulink mathematical analysis software package. Coreq: ELEC 4184. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 5446 - Introduction to Modern Control Theory

State space representation of dynamic systems. Canonical forms. Frequency domain analysis. Controllability and observability. Design by statespace methods: pole-placement, linear observers, separation principle, robustness. Linear, quadratic optimum control. Prereq: ELEC 4136 or 4276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5455 - Computer Methods for Device Electronics

Numerical analysis of PN junctions, Bipolar transistors, GAAS MESFETS, and MOSFETS. Numerical solution of discrete-form equations. Finite-difference method for semiconductor devices. Two-dimensional models: DC, transient, and small signal numerical analysis. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5456 - Sampled Data and Digital Control Systems

Elements of sampling theory. Overview of design approaches via transform methods. Analysis and design in state space. Optimal control systems. Emphasis is placed on computer-aided design projects. Prereq: ELEC 4276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5466 - Adaptive Control System Design

Basic concepts in adaptive feedback control. Overview of application areas. Stability of non-linear systems and hyperstability approach to the design of adaptive controllers. Passivity concept and Liapunov stability. Design of model reference adaptive systems, self-tuning regulators, stochastic adaptive, and dual control systems. Computer-based design applications. Emphasis is placed on design projects. Prereq: ELEC 4136 or 4276. Cross-listed with ELEC 4466. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5474 - Power Electronics Laboratory

The power electronics laboratory introduces students to seven fundamental switchmode power conversion topologies, along with voltage and current feedback control, assembled on a reconfigurable power pole circuit board with external power supplies and laboratory. Cross-listed with ELEC 4474. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ELEC 5476 - Optimal Control Systems

Liapunov stability and quadratic optimal control problems. The minimum principle and the Pontryagin maximum principle. Variational calculus and Hamilton-Jacoby-Bellman equation. The separation principle of LQG control. Combined optimal state estimation and control. Differential and difference Riccati equations. Tracking and disturbance rejection. Computer-aided design applications. Prereq: ELEC 4136 or 4276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5486 - Modeling and System Identification

Linear time-invariant and time-varying models. Nonlinear state space models. Non-parametric methods. Parameter estimation methods. Convergence and consistency. Computational methods in estimation. Recursive estimation methods. Experiment design and choice of identification criterion. Model structure selection and model validation. Prereq: ELEC 3817 or MATH 3800, and ELEC 4136 or 4276. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5496 - Robust Control

Background mathematics: function spaces and operators, and factorization theory. Stability theory: stability and stabilizability parameterization, closed-loop transfer matrices. Model-Matching Theory: solution existence, SISO Design, the Nehari problem. Performance bounds.

Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5501 - Microprocessor-Based Design

Covers advanced treatment of embedded system design using microprocessors. Analog input circuitry is interfaced to a microprocessor, and a PC board layout is created to develop a complete system design. Software/Operating System is implemented for realtime I/O. Prereq: Graduate standing or permission of instructor. Cross-listed with ELEC 4501. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5511 - Hardware-Software Interface

Computer engineering methods in hardware and software design applied to problems drawn from the mini- and micro-computer systems field. Hardware and software techniques for the design of combined hardware or software are developed. Interface and real-time programming techniques are considered. Graduate level requires additional projects and homework. Prereq: Graduate standing or permission of instructor. Cross-listed with ELEC 4511. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5521 - Design and Test of Digital Systems

Application of hardware description languages to the design, synthesis, analysis, and testing of digital and computer systems; modeling and simulation constructs; modern hardware description languages, including VHDL, logic and behavioral synthesis; rapid-prototyping; FPGA and standard-cel ASIC design; design for testability; and electronic design automation. Prereq: ELEC 3651 or graduate standing. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5522 - VLSI Systems

Examines the design of very large-scale integrated (VLSI) systems from the logic to physical levels, including MOS transistor design, CMOS fabrication and design rules, device and wafer processing, inverter and complex gate design, mask level layout, VLSI system components and architectures, algorithms for VLSI computer-aided design, and testability. Prereq: ELEC 3215 and 3651 or graduate standing. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5551 - Pattern Recognition

Pattern recognition techniques from image processing and artificial intelligence are explored. Topics include neural networks, morphological processing, wavelets, fractals, and basic image understanding. Prereq: ELEC 3316 and 3651. Max hours: 3 Credits. **Semester Hours: 3 to 3**

ELEC 5555 - VLSI Circuit Simulation

Computer methods for large integrated circuits. Theory and practice of VLSI circuit simulation. Nodal formulations of networks. Computer generation of sensitivities. Modeling active devices. DC solution of nonlinear networks. Prereq: Graduate standing or permission of instructor. Cross-listed with ELEC 4555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5617 - Random Processes for Engineers

Probability, sequences of random variables, specification of stochastic processes, stationarity, correlation functions and spectral densities, linear mean-square estimation, central limit theorems, law of large numbers, non-stationary random processes, stochastic differential equations and Karhunen-Loeve expansion, Kalman filtering. Prereq: ELEC 3316 and ELEC 3817 and permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5627 - Stochastic Point Processes

Presents modeling physical phenomena characterized by highly localized events distributed randomly in a continuum. Applications include optical communications, queuing theory, decision theory, nuclear medicine and electron microscopy. Topics include Poisson counting processes and its generalizations; stochastic differential equations used in filtering; martingales and Brownian motion. Prereq: ELEC 3817 or ELEC 5617. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5637 - Digital Signal Processing

Discrete-time signals and systems in the time and frequency domain. Digital filter structures, design of FIR filters by windowing, optimum approximations of FIR filters. Design of digital IIR filters from continuous time domain. Computer-aided design of digital filters. The discrete Fourier transform and DSP algorithm implementation. Analysis of finite word length effects. Application of digital signal processing. Prereq: ELEC 3316 and 3817. Cross-listed with ELEC 4637. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5638 - Digital Image Processing

Basics of two-dimensional (2-D) systems theory, including 2-D Fourier transform, Z-transform, and difference equations. Design of 2-D filters for image processing applications. Image transforms, including the 2-D FFT, cosine, Hadamard and KL. Image enhancement and restoration techniques. Method of image coding and compression. Prereq: ELEC 3133, 3215, 3225, 3316, 3817 or graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5644 - Introduction to Biomedical Imaging

An important component of the recent expansion in biomedical engineering is the area of biomedical imaging. This ELEC 4644/5644 course is an introduction to biomedical imaging systems, not only covering the fundamentals of imaging physics but also the applications of

four primary biomedical imaging modalities: X-Ray Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Nuclear Medicine (i.e. PET, SPECT), and Ultrasound Imaging. Prereq: Graduate standing, or permission of instructor. Cross-listed with ELEC 4644. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5647 - Adaptive Signal Processing

Optimal filtering and identification of signal processing models. Martingales and analysis of recursive estimation algorithms. LMS and RLS adaptive filters. Stability, convergence and robustness of adaptive algorithms. Adaptive noise cancellation, time delay estimation and blind equalization. Adaptive differential pulse code modulation, adaptive prediction, adaptive Kalman Filters. Applications and implementation of adaptive algorithms. Prereq: ELEC 5637. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5648 - Blind Signal Processing

Introduction to gradient optimization methods. Introduction to adaptive filtering. Principal component analysis and whitening. Robust and adaptive PCA. Blind SOS parameter estimation and deconvolution. Fundamentals of independent component analysis. Blind equalization of SIMO and MIMO systems. ICA by maximization of nongaussianity. ICA by MLE and minimization of mutual information. Applications and practical considerations. Prereq: Graduate standing. Cross-listed with ELEC 6648. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5657 - Detection and Estimation Theory

Introduces detection and extraction methods used in signal processing, including decision theory; detection of known and random signals; optimum receiver design; estimation theory; Wiener filtering; Kalman-Bucy filtering; and applications to communication systems. Prereq: ELEC 5617. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5667 - Wavelet Theory and Applications

Topics include: fundamentals of signal decomposition; theory of filter banks; multi-resolution analysis and fast wavelet transforms; applications image and video image and video compression; and denoising and feature detection. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5678 - Quantum Electronics

The course teaches students to understand the basic concepts of quantum mechanics and to learn the mathematical tools needed and to be familiar with some of the technical knowledge that applies quantum mechanics to various advanced problems in engineering. Prereq: PHYS 2331 and MATH 3195. Cross-listed with ELEC 4678. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5687 - Optical Communication Systems

System aspects of optical communication system design. Basic principles of sources, channels, detectors, counting statistics, amplifiers, and coding with regard to the performance limitations they place on the communication system. Prereq: ELEC 3133. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5688 - Introduction to Nondestructive Testing

A basic, broad understanding of the principles of nondestructive testing and evaluation is provided. The main objective of this course is to attract students to NDT fields and eventually help address the increasing needs of NDT engineers and technicians. Interaction and collaboration with local NDT industries will also be emphasized. As an introductory course, a broad interdisciplinary knowledge of NDT will be covered in the following sub-areas: Visual, Penetrant, Magnetic Particle, Eddy Current, Microwave, Ultrasonic, and Radiography. Prereq: Graduate standing, or permission of instructor. Cross-listed with ELEC 4688. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5697 - Optical and Spatial Information Processing

Processing of two- and three-dimensional spatial information. The scalar diffraction theory necessary to describe the information-bearing wave-front. Wave-front recording, modulations, and reconstruction. Holography, Fourier transform properties of lenses, two-dimensional convolution and correlation, pattern recognition, and optical information processing. Prereq: ELEC 3316. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5710 - Advanced Electric Drive Systems

Covers advanced theory and implementation techniques for rotating electric machinery drives. Topics include field oriented control theory, detailed dynamic modeling of induction machine/drive system, advanced control algorithms and controller design. Prereq: ELEC 4164/5164 or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5714 - Energy Systems Analysis

Transmission line constants, including details of GMD methods, skin effect. Analysis of balanced and unbalanced line using distributed parameters, energy flow from circle diagram approach, traveling-wave phenomena, corona, power cables and fundamentals of DC transmission. Prereq: ELEC 4184. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5720 - Practical Electric Drive Systems

Covers practical control theory and implementation techniques for electric machine drives for rotating electric machinery using high-performance hardware and software. Topics include

machine theory review, power converter, control theory, controller design and actual implementation of an induction machine drive using up-to-date microcontroller hardware and software. Prereq: ELEC 2520, ELEC 4164/5164 or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5723 - High Performance Computer Architecture

High Performance Computer Architecture covers the design of advanced computing systems. In particular, the course includes the design of modern microprocessors, characteristics of the memory hierarchy, and issues involved in multithreading and multicore architectures. Prereq: ELEC 3651 Digital Hardware Design. Cross-listed with ELEC 4723. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5725 - Advanced Electric Machinery

Covers theoretical principles and techniques of electric machine analysis focusing on rotating machinery. Topics include various machine definitions, properties and analysis, software tools, and examples. Prereq: ELEC 3164 or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5727 - Computer Vision & Image Processing Acceleration

Real-time constraints on computer-vision and image processing applications have motivated numerous explorations of multicore architectures to provide more efficiency through hardware parallelism and acceleration. This course undertakes the study of image processing and computer vision algorithms in the context of parallel hardware. Cross-listed with ELEC 4727. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5755 - Renewable Energy Systems

This course focuses on the modeling, analysis and control of grid-connected wind and photovoltaic energy systems. Prereq: permission of instructor. Cross-listed with ELEC 4755. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ELEC 5764 - Power Distribution Systems

Use of per-unit methods to find transient voltage behavior of industrial power systems resulting from motor starting, spotwelders and similar stimuli. System and device responses due to series and shunt capacitors and problems of subharmonics and over-excitation on induction motors. Design of power distribution systems. Prereq: ELEC 4184. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5774 - Power Systems Dynamics and Protection

Topics to be covered include: power system dynamic fundamentals, various stability problems, such as angle, frequency and voltage stability; protection of power systems apparatus and protective relays coordination. Prereq: ELEC 4184/5184 or graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 5800 - Special Topics

Intermediate courses of variable title and variable credit, usually offered once by guest lecturers. See current departmental notices for details. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 5840 - Independent Study: ELEC

Offers the opportunity for independent, creative work. Prereq: Permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ELEC 5939 - Internship Master Student

Student will outline internship tasks every 2-3 weeks in a progress report. Reports will include the details of exposure to electrical/computer engineering concepts. Each concept will be described with respect to CU Denver Electrical Engineering degree program. Courses that were taken pre-internship that prepared student for successful understanding for the task requirements. In addition, preparations that would be help, will also be mentioned. Engineering training in design and software tools related to internship tasks will be clearly described. Final semester report will describe all experiences and include recommendations on how students might prepare to be successful for other common tasks. Requisite: Graduate students must have completed 6 credit hours with a cumulative GPA of 3.0. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ELEC 5980 - Statistical Quality Control

Introduces statistical methods of quality control. Statistical process control, process capability, statistical design of experiments and total quality management. Prereq: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 6000 - Statistical Signal Processing

The objective of this course is to present a systematic coverage of statistical signal processing methods which are fundamental for processing, identifying and classifying stochastically (randomly) generated data sequences. Emphasis will be given to methods which resist data outliers. Important applications include communications and biological systems. Prereq: ELEC 5617 or consent of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ELEC 6800 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 6950 - Master's Thesis

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

ELEC 6960 - Master's Report

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

ELEC 7800 - Special Topics

Courses of variable title and variable credit, usually offered once by guest lecturers. See current departmental notices for details. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7801 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7802 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7803 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7804 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7805 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7806 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7807 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7808 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7809 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ELEC 7840 - Independent Study: ELEC

Offers the opportunity for independent, creative work. Prereq: Permission of instructor.
Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ELEC 8990 - Doctoral Dissertation

Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

Engineering

ENGR 1000 - Introduction to Engineering

Introduces engineering profession, engineering design and practice; and the tools used by engineers to accomplish design. The specialties within engineering are described. Students are involved in application projects and use word processors, spreadsheets and engineering software. Note: ENGR 1000 cannot be substituted for ELEC 1201. Prereq: High school trigonometry. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

ENGR 1111 - Psychological and Social Implications of Technology

This course will explore the impact of technology and its advances on human beings from an emotional, psychological, and social perspective. Discussions will include ethical, moral, and multicultural implications of technological advances from a global perspective and will require students to critically analyze issues that arise from such advances. Max hours: 3 Credits.
Semester Hours: 3 to 3

ENGR 1130 - Chemistry for Engineers

An introductory lecture and recitation course designed to meet the general chemistry requirement for engineering students. Topics include atoms, molecules, moles, stoichiometry, chemical bonding, atomic & molecular structures, thermodynamics and kinetics. The course will highlight the application of chemistry to engineering disciplines. Note: Suggested background of one year of high school chemistry or CHEM 1000 and MATH 1110 (or high school equivalent) strongly recommended. Max hours: 5 Credits. **Semester Hours:** 5 to 5

ENGR 1208 - Special Topics

Restriction: Restricted to Engineering and pre-engineering students only. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

ENGR 1218 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1228 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1238 - Special Topics

Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1248 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1258 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1268 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1278 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1288 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 1298 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2208 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2218 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2228 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2238 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2248 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2258 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2268 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2278 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2288 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 2298 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3208 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3218 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3228 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3238 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3248 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3258 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3268 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3278 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3288 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3298 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 3400 - Technology and Culture

Explores the cultural and political foundations of technology and the impact of technology upon the individual and society. Contributions to technological advances and the impact of technology on women and diverse ethnic groups are examined in the context of specific engineering designs and case studies. Prereq: One course in social sciences, one course in humanities, one course in science. (Satisfies the multicultural diversity requirement of the UCDHSC core curriculum). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGR 3600 - International Dimensions of Technology and Culture

This course provides students with an understanding of how science, technology and international issues interrelate in a world that has become more interconnected and interdependent. The course will focus on the technical, organizational and cultural aspects of

information and other technologies with an emphasis on their impact on third world countries. Prereq: One course in social sciences, one course in humanities, one course in science. (Satisfies the international perspectives requirement of the UCDHSC core curriculum). Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGR 3995 - Global Technology, Business & Culture

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGR 4150 - Seminar: Special Topics in Engineering

A flexible seminar format dealing with topics of special interest in engineering. Topics vary from semester to semester. Prereq: Senior standing. Cross-listed with ENGR 5150 and 7150. Max hours: 1 Credit. **Semester Hours:** 0 to 1

ENGR 4208 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4218 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4228 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4238 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4248 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4258 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4268 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4278 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4288 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4298 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 4800 - Science Engineering and Culture for Undergraduates

Course for undergraduate international and limited English proficient (LEP) students to improve success in science and engineering degree programs through senior research paper writing , advanced STEM English skills and cross cultural training. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

ENGR 4840 - Independent Study

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 5150 - Seminar: Special Topics in Engineering

A flexible seminar format dealing with topics of special interest in engineering on a graduate level. Topics vary from semester to semester. Prereq: Graduate standing. Cross-listed with ENGR 4150 and 7150. Max hours: 1 Credit. **Semester Hours:** 0 to 1

ENGR 5208 - Special Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGR 5301 - Systems Engineering: Principles and Practice

Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGR 5302 - Systems Engineering: Planning and Management

Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGR 5303 - Special Topics: Systems Engineering

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ENGR 5800 - Long Range Infrastructure Planning and Design: Colorado 2050

The goal of this course is to equip students to address the problems of long term future resource limitation and its influence on urban infrastructure in Colorado. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ENGR 7150 - Seminar: Special Topics in Engineering

A flexible seminar format dealing with topics of special interest in engineering on an advanced graduate level. Topics vary from semester to semester. Prereq: Graduate standing. Cross-listed with ENGR 4150 and 5150. Repeatable. Max Hours: 1 Credit. **Semester Hours:** 0.5 to 0.5

English

ENGL 1000 - Special Topics

This topics course at the 1000 level is designed to offer flexibility for the English department for lower division offerings. Students may enroll up to 3 times to total no more than 9 credits but the topics must differ for each course. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 3

ENGL 1010 - Writing Workshop

Focuses on the abilities and skills needed to write effective expository prose. Emphasizes frequent writing, both in and out of class, with special attention to writing short essays well. Writers learn to write confidently at the sentence and paragraph levels, and to develop their grammatical and mechanical skills. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 1020 - Core Composition I

Provides opportunities to write for different purposes and audiences, with an emphasis on learning how to respond to various rhetorical situations; improving critical thinking, reading, and writing abilities; understanding various writing processes; and gaining a deeper knowledge of language conventions. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-C01. **Semester Hours:** 3 to 3

ENGL 1021 - Core Composition Workshop

Prepares students for college-level reading and writing. Students receive one-on-one and small-group instruction on analytical and argumentative writing. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ENGL 1050 - Vocabulary for Professionals

Studies English words derived from Latin and Greek by analyzing their component parts (prefixes, stems, and suffixes). Cross-listed with LATN 1050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ENGL 1200 - Introduction to Fiction

Introduces class members to the works of famous authors as well as to major themes, elements, and techniques of fiction in both short stories and novels. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 1400 - Literary Studies

Helps students develop a sense of literary techniques and issues so they can bring an improved critical sensibility to their reading and writing. Note: Designed for students who are seriously interested in literature. Note: this course assumes that students have completed or are currently taking ENGL 1020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 1601 - Storytelling: Literature, Film, and Television

Asks students to explore how stories determine who we are. Everything people do fits into a narrative pattern, evident everywhere from TV news to memory to daily schedules. We tell ourselves stories about ourselves and others--how do these stories shape who we are as cultural beings? Note: this course assumes that students have completed or are currently taking ENGL 1020. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH2. **Semester Hours:** 3 to 3

ENGL 2030 - Core Composition II

Focuses on academic and other types of research-based writing and builds on the work completed in ENGL 1020. Focuses on critical thinking, reading and writing as well as working with primary and secondary source material to produce a variety of research-based essays. Emphasis on using both print-based and electronic-based information. Prereq: ENGL 1020. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-C02. **Semester Hours:** 3 to 3

ENGL 2060 - Introduction to Writing & Digital Studies

Introduces students to the topics of study in the English Writing major. Topics include writing studies (literacy, genre, research, and multimodality), rhetoric (history and theory), and the teaching of writing (pedagogy and practice). Prereq: ENGL 1020. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2070 - Grammar, Rhetoric and Style

Teaches the basics of English grammar in order to develop a rhetorical and stylistic confidence in reading and writing, using an approach that is more descriptive than prescriptive. Teaches students how to evaluate the grammatical choices of established writers and how to develop flexibility in the grammatical choices they make in their own writing. Note: this course assumes that students have completed ENGL 1020. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2156 - Introduction to Creative Writing

Reading, discussing, writing short fiction and poetry in a workshop setting. Note: this course assumes that students have completed ENGL 1020. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2250 - Introduction to Film

Introduces students to the critical study of cinema as an art form and a cultural phenomenon. Topics include cinematography, editing, mise-en-scene and sound; the connections between cinema and related art forms; film genres; the social dimensions of film production and reception; and films by such key filmmakers as Alfred Hitchcock, Maya Deren and Spike Lee. Term offered: fall, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2300 - Topics in Literature and Film

Courses supplement the regular program of the department, offering such topics as: literary perceptions of motherhood, Asian-American literature, literary classics of science, and contemporary women writers. Note: Can be taken more than once if topics vary. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 2390 - Writing the Short Script

Examines narrative screenwriting elements--premise, theme, conflict, protagonist/antagonist, setting/situation, dialogue, plot structure, imagery--required to create a strong narrative short film. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2415 - Introduction to Movie Writing

Examines structural and dramatic elements required to write a feature-length screenplay. Students conceptualize, plan, write and then re-write to complete the first ten pages of their own feature-length screenplay. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2450 - Introduction to Literature

Provides the terms and skills for analyses of a variety of narratives. Develops critical thinking, reading, and writing necessary for succeeding in the discipline. Note: this course assumes that students have completed ENGL 1020. Note: required introductory course for English majors and English education. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2510 - Greek and Roman Mythology

Surveys influential literature from Greece and Rome. Among the Greek works are Homer's epics, Sophocles's tragedies, Plato's and Aristotle's philosophical writings. Among the Roman works are the writings of Vergil, Ovid, the elegists and historians. A brief look at Augustine's writings concludes the course. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2520 - The Bible as Literature

Introduces students to biblical literature. Selections from the various genres of writing in Hebrew (history, wisdom, prophecy, literature) are read and discussed, as well as representative sections from the New Testament, including the gospels and the writings of Paul. Cross-listed with RLST 2700. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 2600 - Literary Classics

Traces the traditions of British and American literature from medieval times to the present, by examining a variety of texts, studying the impact of different time periods, and cultural movements on the evolving literary tradition. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH2. **Semester Hours:** 3 to 3

ENGL 2840 - Independent Study: ENGL

Term offered: fall, spring. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ENGL 3001 - Critical Writing

Introduces literary theory to provide extensive practice in writing about literature. Note: Required of English majors and minors with a literature option and education English majors. Prereq: ENGL 2450 with a C- or higher. Restriction: Restricted to English majors only (all ENGL subplans). Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3020 - Poetry Workshop

Practical workshop for developing poetic craft, focusing on writing process and specialized topics. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3050 - Fiction Workshop

Beginning workshop for defining and developing narrative craft, focusing on writing process and specialized topics. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3070 - Film History I

Examines the history of cinema from its 19th-century origins until the early sounds era. Explores important developments and influences in American and international cinema, including the origins of Hollywood narrative, avant-garde cinema, German Expressionism, and Soviet Cinema. Prereq: Sophomore standing. Cross-listed with HIST 3070. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3075 - Film Genres

An intensive study of films of one or more significant genres, such as comedy, film noir, science fiction. Prereq: Sophomore standing. Note: May be taken more than once when genres vary. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 3080 - Global Cinema

Studies topics in international cinema, with particular attention to native production in Latin America, Africa, the Middle East, and Asia. Prereq: Sophomore standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3084 - Multimedia Composition

Offers students opportunities to examine and compose texts where language is integrated with other media, such as video, still images, music, etc. Includes basic instruction in digital multimedia composition and design tools. ENGL 2070 recommended. Prereq: Junior standing or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3085 - Film Directors

An intensive study of the films of one or more major directors, such as Chaplin, Keaton, Hitchcock, Welles, Coen Brothers. Prereq: Sophomore standing. Note: May be taken more than once when directors vary. Term offered: fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 3106 - Writing for Print Media

Interested in writing for newspapers, magazines, or new media? Get real-world and practical experience with this introduction to working in modern journalism. Students will work closely with the CU Denver student newspaper "The Sentry", have the chance to get their writing published, and get involved with student media. It's the best way to start writing professionally: with hands-on training. No previous experience necessary--just a passion for journalism and a desire to see your work in print! Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3154 - Technical Writing

Introduces the study and writing of technical documents. Emphasizes the processes, style, structure, and forms of technical writing. Attention is paid to audience analysis, organization, clarity and precision. ENGL 2070 recommended. Prereq: Sophomore standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3160 - Language Theory

Provides a basic introduction to linguistics and language theory, including phonetics, grammar, semantics, pragmatics, sociolinguistics, cognitive processing, and language acquisition. Includes practical applications of the theories and methodologies presented. ENGL 2070 recommended. Prereq: Sophomore standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3170 - Business Writing

Focuses on the strategies and techniques of business writing, with emphasis on reader, message and form. ENGL 2070 recommended. Prereq: Sophomore standing. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3180 - Writing in the Social Sciences

Teaches students to analyze and produce types of writing common to the sub-disciplines of the social sciences. Emphasizes the dialogic nature of academic writing, and thus foregrounds the importance of understanding, evaluating, and responding to existing scholarship. Prereq: ENGL 2030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3190 - Writing Center Theory & Practice

An introduction to writing centers and to theories of composition, education, and writing pedagogy with a focus on collaborative learning practices and the dynamics of the consulting relationship. Students will have opportunities to research, observe, and engage in the teaching

practices of the Writing Center at CU Denver. Prereq: ENGL 2030 with a B or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3200 - From Literature to Film

Explores the relationship between literature and cinema; the process of adapting and transforming a novel into a feature-length film; and the historical, cultural, and commercial influences that shaped the creation of each novel and film studied. Prereq: Sophomore standing. Term offered: fall, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3300 - Topics in Film

Courses supplement the department's regular course offerings. Recent topics have included women and film, movies as history and film comedy. Prereq: Sophomore standing. Note: Open to both majors and non-majors. Can be taken more than once when topics vary. Max hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 3330 - Topics in Literature

Courses supplement the department's regular course offerings. Recent topics have included Tolkien and international short stories. Prereq: Sophomore standing. Note: Open to both majors and non-majors. Can be taken more than once when topics vary. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 3405 - Topics in Writing

Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 3415 - Screenwriting Workshop

Continues and expands ENGL 2415. By the end of ENGL 3415, students have completed the first two acts of their screenplay. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3416 - Magazine Writing

An intensive, practical course in writing non-fiction with an emphasis on journalistic approaches for daily, weekly, and monthly publications. Prereq or Co-req: ENGL 2030. Term offered: spring, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3417 - Writing for the Mass Media

Students will examine public relations writing techniques and journalistic style, public relations theory and ethics, and practical client work. Note: this course assumes that students have completed ENGL 1020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3450 - Contemporary Women Writers

Examines how women write about a specific theme, such as home, work, family, the "Other," as well as how women's writing may differ from men's. Theme and genre vary. Prereq: Sophomore standing. Cross-listed with WGST 3450. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3480 - Modern Drama

How does drama change from the pioneering realism of Ibsen and Chekhov to the Absurdism of Ionesco and Pinter and beyond? The course covers plays in English and translation from the late nineteenth to the twenty-first century, with attention to performance as well as literary texts. Prereq: Sophomore standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3520 - Religious Narratives

Investigates the language and structure of religious discourse in Western literature. Welcomes interdisciplinary and comparative perspectives with a focus on cultural constructions of the sacred. Prereq: Sophomore standing. Cross-listed with RLST 3720. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3661 - Shakespeare

Introduces some of Shakespeare's major plays and poems, which usually includes Richard II, Romeo and Juliet, Measure for Measure, Othello, King Lear, Anthony and Cleopatra and The Tempest. Prereq: Sophomore standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3700 - American Literature to the Civil War

Surveys American literature from the colonial era to the Civil War. Note: this course assumes that students have completed ENGL 1020. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3750 - American Literature after the Civil War

Surveys American literature from the Civil War to the contemporary era. Note: this course assumes that students have completed ENGL 1020. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3795 - Race and Ethnicity in American Literature

Focuses alternately on one of several ethnic American literary traditions (e.g. African American, Chicano) and their historical, geographical, social and economic communities. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3798 - International Perspectives in Literature and Film

Fosters an understanding of peoples outside of the U.S. through the study and appreciation of non-western literature. Investigates how historical, cultural, and ideological forces constitute race, ethnicity, nationalism, and alienation in a single country or across a region. Topic and country/region varies by semester. Note: May be repeated for credit when title and content are different. All texts in English translation. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 3840 - Independent Study: ENGL

Prereq: Sophomore standing. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ENGL 3939 - Internship

Employment situations designed and supervised by members of the faculty; concepts and skills developed in the classroom are used in business and public service contexts. Prereq: Junior standing or higher. Before enrolling, students should contact the Career Center. Note: Up to six hours may be counted toward the major. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ENGL 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 6

ENGL 4000 - Studies of Major Authors

An intensive study of works of one major British or American author. Examples: Dickens, Woolf or James. Prereq: Sophomore standing. Cross-listed with ENGL 5000. Term offered: fall, spring. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

ENGL 4025 - Advanced Poetry Workshop

Advanced poetic craft, including exercises in mode, genre and advanced revision. Prereq: ENGL 3020. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4055 - Advanced Fiction Workshop

Advanced workshop for developing and deepening narrative craft, focusing on writing process and specialized topics. Prereq: ENGL 3050, English major and minor only; all others must obtain permission of instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4080 - History of English Language

Examines how English has changed since A.D. 800 through examples of writing from different periods, with attention to the way various groups have enriched our vocabulary and altered our syntax. Note: this course assumes that students have completed ENGL 2070 or one year of college level coursework in a foreign language. Cross-listed with ENGL 5080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4088 - Literary Editing: Copper Nickel

Literary editing in theory and practice, using UCD's nationally recognized journal "Copper Nickel." Topics may include evaluating fiction, poetry and nonfiction; design and aesthetics; line editing; the business of literary journals. Prereq: ENGL 3020 or 3050. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4160 - Poetics

"Mechanics" of poetry in English, including meter, rhythm, rhyme, line, and other systems of measurement and logic. Emphasis is on historical development of poetic art in English. Note: this course assumes that students have completed ENGL 2450. Cross-listed with ENGL 5160. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4166 - History of American Poetry

Examines major American poets and poetic trends from the colonial period to the present, with attention to cultural contexts and to development of distinctively American practices. Prereq: Sophomore standing. Cross-listed with ENGL 5166. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4175 - Writing in the Sciences

Provides rhetorical analyses of scientific discourse and student practice in writing research reports and proposals. Prereq: Sophomore or higher standing and ENGL 2030 with a C- or higher. Cross-listed with ENGL 5175. Students will not receive credit for this class if they have

already received credit for ENGL 3175. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

ENGL 4177 - Technical Editing

Provides instruction in the conventions of editing in the genre of technical communication. Students develop skills they can use to edit a variety of technical documents. Prereq: ENGL 2030 with a C- or better. Cross-listed with ENGL 5177. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4180 - Argumentation and Logic

Explores the history of logic and its role in argumentation, studies various types of logical structures, and analyzes current uses of argumentation, with attention to writing arguments on current public issues. ENGL 3084 recommended. Prereq: Students must have junior standing/60 units of credit completed. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4190 - Advanced Topics in Writing & Digital Studies

Focuses on particular issues in rhetoric and writing as they pertain to reading and writing, including language and gender, language and culture, and language of political action. ENGL 3084 recommended. Prereq: Must have completed 60 semester hours. Cross-listed with ENGL 5190. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 4200 - Survey of the English Novel to 1900

Rise and development of the English novel from its beginnings in the 18th century through the end of the 19th century, including such writers as Defoe, Fielding, Austen, Shelley, the Brontes, Thackeray, and Dickens. Prereq: Sophomore standing. Cross-listed with ENGL 5200. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4210 - History of the English Novel II

Overview of the English novel from mid-19th century to World War II, emphasizing the important developments which the form underwent in the hands of notable novelists, including Charles Dickens, the Brontes, George Eliot, Henry James, Joseph Conrad, D.H. Lawrence and Virginia Woolf. Prereq: Sophomore standing. Cross-listed with ENGL 5210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4220 - African-American Literature

Surveys African-American literature with special emphasis on post-Civil War writing. Prereq: Sophomore standing. Cross-listed with ENGL 5220, ETST 4220. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4230 - The American Novel

Surveys major developments in the American novel from the 18th century to the 21st century. Prereq: Sophomore standing. Cross-listed with ENGL 5230. Term offered: spring, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4235 - Faulkner

Studies the works of Faulkner's high period with special attention to southern themes and Faulkner's experimentation with narrative form. Prereq: Sophomore standing. Cross-listed with ENGL 5235. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4236 - The American Short Story

Traces the development of the short story in the United States, from its beginnings in colonial tales to its contemporary renaissance as a dominant literary form. Prereq: Sophomore standing. Cross-listed with ENGL 5236. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4240 - Topics in Contemporary American Literature

Seminar focusing on a segment of contemporary American literature. Prereq: Sophomore standing. Cross-listed with ENGL 5240. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4250 - Twentieth Century Fiction

Deals with novels originating in a variety of countries in an effort to see the similarities and differences that varying nationalities bring to the genre. Prereq: Sophomore standing. Cross-listed with ENGL 5250. Term offered: spring. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4280 - Proposal and Grant Writing

Focuses on research, design, composition, and editing original proposals. Includes idea development, identification of funding sources, and the creation of persuasive documents. ENGL 3084 recommended. Prereq: Students must have junior standing/60 units of credit completed. Cross-listed with ENGL 5280. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4290 - Rhetoric and the Body

Investigates the relationship between rhetoric and the body, with attention to theoretical and practical implications. Welcomes interdisciplinary perspectives, and often considers rhetorical topics from historical, medical, disability studies, economic, and/or gendered perspectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4300 - History of British Drama

Intended as a survey of British drama from the miracle plays of the medieval period, through the Renaissance and Restoration, to the "kitchen sink" realists of the 1960s. Prereq: Sophomore standing. Cross-listed with ENGL 5300. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Cross-listed with ENGL 5306, HIST 4306, 5306, WGST 4306, 5306. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Cross-listed with ENGL 5308, PHIL 4308, PHIL 5308, WGST 4308, WGST 5308. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4320 - History of Poetry in English

Studies the major schools and eras of English prosody, including the poetry of Great Britain and the United States, from the medieval period to the present. Prereq: Sophomore standing. Cross-listed with ENGL 5320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4350 - History of American Drama

Studies American drama from its foundations in the 18th century through movements including realism, expressionism, symbolism, agit-prop, black nationalism, feminism, and performance art. Drama read as both text and performance, as sometimes supporting the status quo and as sometimes subverting it. Prereq: Sophomore standing. Cross-listed with ENGL 5350. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4400 - Old English I

Instruction in the Old English language. Note: this course assumes that students have completed ENGL 2070 or one year of college level coursework in a foreign language. Prereq: Sophomore standing. One year of college foreign language or ENGL 2070 recommended. Cross-listed with ENGL 5400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4410 - Old English II: Beowulf

Continuing training in the reading of Old English and intensive reading of Beowulf. Cross-listed with ENGL 5410. Note: this course assumes that students have completed ENGL 4400 or 5400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4420 - Film Theory and Criticism

(1) Familiarizes students with some of the central concepts and debates in film theory and criticism, both classic and contemporary, (2) enables students to develop advanced analytic and interpretive skills, and (3) guides students toward discovering and articulating original critical and theoretical perspectives. Note: this course assumes that students have completed ENGL 2250, ENGL 3070, ENGL 3080. Cross-listed with ENGL 5420. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4460 - Contemporary World Literature

Surveys literature written by world writers since World War II. Prereq: Sophomore standing. Note: Texts read in English. Cross-listed with ENGL 5460. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4500 - Medieval Literature

Introduces representative writers from the Norman Conquest to about 1550. Emphasis on a variety of genres, including religious poetry, Arthurian romance, dream vision and drama. Prereq: Sophomore standing. Cross-listed with ENGL 5500. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4510 - Whores and Saints: Medieval Women

Studies how women are presented in texts, as well as works by women. Investigates the roles open to women and societal attitudes toward women, who were considered seductresses, saints, scholars and warriors in the middle ages. Note: this course assumes that students have completed at least 9 hours of literature coursework. Cross-listed with ENGL 5510, RLST 4730/5730, WGST 4510/5510. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4520 - English Renaissance

Introduces some of the important writers in this major period of English literature (1500-1660). Special attention to the works of Sidney, Milton, Spenser, Shakespeare, Donne, Herbert and Johnson. Prereq: Sophomore standing. Cross-listed with ENGL 5520. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4530 - Milton

Extensive reading in John Milton's poetry (Lycidas, Paradise Lost, Paradise Regained, Samson Agonistes) as well as his political, social and theological writings. Prereq: Sophomore standing. Cross-listed with ENGL 5530. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4540 - Restoration and the 18th Century

Introduces some of the important writers of the "Age of Reason." Emphasis on such figures as Bunyan, Burke, Dryden, Johnson, Pope and Swift. Prereq: Sophomore standing. Cross-listed with ENGL 5540. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4560 - English Romanticism

Studies major works of the chief English writers of the first part of the 19th century, with emphasis on such representative figures as Wollstonecraft, Godwin, Blake, Wordsworth, Coleridge, Hazlitt, Byron, Keats and Shelley. Prereq: Sophomore standing. Cross-listed with ENGL 5560. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4580 - The Victorian Age

Examines the main currents of Victorian thought in prose and poetry from about 1830 to the end of the century, including such writers as Browning, Carlyle, Mill, Newman, Ruskin, Swinburne and Tennyson. Prereq: Sophomore standing. Cross-listed with ENGL 5580. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4600 - Modernism

Modernist literature from the beginning of the 20th century through World War II, including such writers as Eliot, Joyce, Forester, Ford, Yeats, Woolf and Barnes. Examines the social-political influences as well as the aesthetic and stylistic elements which define modernist writing. Prereq: Sophomore standing. Cross-listed with ENGL 5600. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4601 - Principles and Practices of Second Language Acquisition

Overview of basic principles and practices in the learning and teaching of English as a second language. ENGL 3160 recommended. Prereq: Students must have junior standing/60 units of

credit completed. Cross-listed with ENGL 5601. Term offered: fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

ENGL 4610 - Narrative: Form and Theory

A critical and theoretical exploration of the elements of narrative -e.g., plot, character, dialogue, discourse-in literature and film. This course is especially useful for fiction-writing students in the Creative Writing Track. Prereq: ENGL 2450. Cross-list ENGL 5610. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4651 - Second Language Writing

Topics include: similarities between first & second language writing, the processes of composition & revision, teacher response to student writing, student processing of feedback, writing assessment, and the reading/writing connection. ENGL 3160 recommended. Prereq: Students must have junior standing/60 units of credit completed. Cross-listed with ENGL 5651. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4701 - Multimedia in the Community

Produce dossier-quality multimedia shorts by researching and writing digital compositions for selected community organizations. Topics for research range across numerous social issues and involve all disciplines. Prereq: ENGL 2030, 3154, and 3170 or permission of instructor. Cross-listed with ENGL 5701. **Semester Hours:** 3 to 3

ENGL 4720 - Honors in English

Designed for students taking departmental honors in English. Prereq: Students must have written permission from the honors advisor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4730 - Chaucer

Extensive reading in Chaucer's works in Middle English, including his lyrics, dream visions, Troilus and Criseyde, and the Canterbury Tales. Examines sources, historical and ideological factors influencing the texts. Prereq: Sophomore standing. Cross-listed with ENGL 5730. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4735 - Philosophy and Literature

Considers the philosophical dimensions of literature. Prereq: Sophomore standing. Cross-listed with ENGL 5735, PHIL 4730, 5730. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4740 - Honors in Writing

Designed for students taking departmental honors in English writing. Prereq: Student must have written permission from honors director and faculty advisor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4745 - Humanistic Writing About Medicine and Biology

Investigates medical and biological writing over the last two centuries with an emphasis on reception, ethical issues, and the differences between professional and popular writing. Prereq: Sophomore standing. Cross-listed with ENGL 5745. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4755 - Illness & Disability Narrative

Narratives of mental, chronic or terminal illness, and disability have become common over the past decades. There are a number of ways in which these stories are told by those reflecting on their experiences: individuals choosing to tell such stories must consider how their stories will be received and what they are revealing about themselves in dealing with their conditions. Many issues arise when looking at the production and reception of these narratives, including acceptance and assimilation, stigmatization, access and quality of treatment, discrimination, accommodation, pity and stereotyping responses. These narratives are consumed, usurped, and reacted to by clinicians, communities and society at large with their own agendas, expectations, fears and judgments of the stories and of the individuals telling their stories. This course is about the issues and concerns of producing an illness or disability narrative and the consumption/reception of those narratives by health professionals, communities, and society at large. Pre-req ENGL 1020 and 2030 with a C or higher. In addition, English majors are required to have taken ENGL 3001, 3084, or 4701, and HEHM minors using this as their capstone are required to have taken HEHM 3100 with a C or higher. Cross listed with ENGL 5755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4770 - Topics in English: Film and Literature

May look at specific genres, aesthetic approaches to literature, ideological or socio-political agendas, or other special topics in literature and/or film. Prereq: Sophomore standing. Cross-listed with ENGL 5770. Term offered: spring, fall. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

ENGL 4800 - Special Topics in Creative Writing

Writing-intensive courses combining reading, directed writing, peer- and instructor-led workshops in a topic to be determined by instructor. Topics may include projects in a specialized genre, such as science fiction or noir writing, or in a field of professional endeavor related to creative writing, such as the editing and production of a literary journal. Note: this course assumes that students have completed ENGL 2154. Term offered: fall. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ENGL 4810 - Literary Editing Practicum

Practicum for students interested in editing in a literary field, e.g., literary magazines, book manuscripts, anthology projects. Each semester the parameter of the practicum will be set by the instructor. Prereq: English majors and minors. All other students must have instructor's permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4820 - Senior Poetry Workshop

Capstone workshop for students within the Creative Writing major track or Creative Writing minor. Emphasis on a single, sustained project developed by the student. Prereq: ENGL 4025. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4830 - Advanced Rhetorical Analysis

Immerses students in advanced methods for conducting rhetorical analysis and for reading critically. Students are expected to learn multiple frameworks for performing analysis on rhetorical artifacts. Prereq: Students must have senior standing/90 units of credit completed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4840 - Independent Study: ENGL

Term offered: fall, spring. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ENGL 4850 - Senior Fiction Workshop

Capstone workshop designed to deepen the understanding of narrative, and consciously apply the strategies of narrative craft to modern markets. Course will focus on the writing and publishing processes, culminating in a classroom narrative defense and submission to professional outlets. Prereq: ENGL 4055. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ENGL 4920 - Directed Readings

Explores an area of English literature not covered in regular course work. Note: May be taken as a precursor to honors essay, in which case student should consult with the honors advisor. Prereq: Senior standing. Max hours: 6 Credits. **Semester Hours:** 3 to 6

ENGL 4990 - Senior Writing Project in Creative Writing or Film Studies

Individual writing project consisting of a creative manuscript or critical study. Manuscript must be 30 pages of high quality text. Note: Available only to students in the creative writing and film tracks. Prereq: Senior standing. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits.

Semester Hours: 3 to 3

ENGL 4991 - Senior Seminar in Writing

Students focus on rhetorical studies through extensive reading, writing, discussion, and reflection upon their own literacy practices. Students produce individual and collaborative writing projects for a final portfolio. Prereq: ENGL 3084, senior standing and EWRT majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 4995 - Senior Writing Project

Individual writing project in any genre and any discipline upon approval of faculty advisor. Manuscript must be 30 pages of high quality text. Prereq: Senior standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5000 - Studies of Major Authors

An intensive study of works of one major British or American author. Examples: Dickens, Woolf or James. Prereq: Graduate standing. Cross-listed with ENGL 4000. Term offered: fall, spring. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

ENGL 5093 - Teaching of Writing

Deals with the analysis of rhetorical theory with an emphasis on practical applications in the classroom, with attention to alternative pedagogies in teaching. Prereq: Graduate standing. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5100 - Introduction to Graduate Studies

Introduces students to scholarly methods & key debates in English Studies. Familiarizes students with department's specializations in film, linguistics, literature & rhetoric. Offers new MA students training in the primary forms of scholarly writing within the discipline (journal article, conference abstract, synopsis, book review). Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5110 - Denver Writing Project

An intensive extended workshop in the development of one's personal and professional writing and in the teaching of writing. Open to those who are members of the Denver Writing Project. Prereq: Graduate standing. Term offered: summer. Max hours: 9 Credits. **Semester Hours:** 3 to 9

ENGL 5120 - Denver Writing Project Advanced Institute

Advanced institutes provide intensive examination of an issue related to the teaching of writing. The specific issues are of two kinds--repeatable ones such as "Alumni Institute" and "Writing Retreat" and variable, such as "Action Research" and "Writing Across the Curriculum." Prereq: Graduate standing. Term offered: summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 1

ENGL 5135 - English Language Study

Introduces students to varieties of English in use today, while tracing range of "new Englishes" back to origins of language. Students will develop an understanding of English as a global language, why it spread throughout the world and how, paying specific attention to print history of English and relationship to other print languages. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5140 - Special Topics with NWP

This online University of Colorado Denver English Department and Denver Writing Project course will focus on teaching argument writing to grades 3 - 12+ with the National Writing Project's College, Career, and Community Writers Program. Coursework will provide participants the opportunity to engage in the study of researched-based pedagogy for the teaching of evidence-based argument writing while nurturing themselves as writers. Term offered: irregular. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5145 - Theory

Designed to enrich students' understanding of a variety of modes of theoretical discourse that have influenced modern critical practice in English studies. While the course explores the evolution of criticism, it gives primary emphasis to recent developments. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5155 - Genres of Writing

Explores work of major contributors to genre and narrative theory. Offers students exposure to emergent genres in new media, while situating these new genre in relation to historical precedents. Gives students an introduction to the evolution of central genres in literary studies, such as novel, poem, political speech and western film. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5160 - Poetics

"Mechanics" of poetry in English, including meter, rhythm, rhyme, line, and other systems of measurement and logic. Emphasis is on historical development of poetic art in English. Note: this course assumes that students have completed ENGL 1400. Prereq: Graduate standing. Cross-listed with ENGL 4160. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5165 - Literacy and Technology

Studies the material forms in which English language has circulated-e.g., the history of the oral and manuscript tradition; the history of the book; and the impact of digital technologies on print culture. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5166 - History of American Poetry

Examines major American poets and poetic trends from the colonial period to the present, with attention to cultural contexts and to development of distinctively American practices. Cross-listed with ENGL 4166. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5171 - Language Theory

Introduces linguistic theory to the beginning graduate student. Builds upon the material included in the undergraduate class, by adding materials pertaining to the teaching of writing and graduate language studies. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5175 - Writing in the Sciences

Provides rhetorical analyses of scientific discourse and student practice in writing research reports and proposals. Restriction: Restricted to students at the graduate level (including non-degree and Anschutz Medical Campus programs). Cross-listed with ENGL 4175. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5177 - Technical Editing

Provides instruction in the conventions of editing in the genre of technical communication. Students develop skills they can use to edit a variety of technical documents. Restriction: Restricted to Graduate and Graduate Non-Degree students. Cross-listed with ENGL 4177. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5190 - Advanced Topics in Writing & Digital Studies

Focuses on particular issues in rhetoric and writing as they pertain to reading and writing, including language and gender, language and culture, and language of political action. Cross-listed with ENGL 4190. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENGL 5200 - Survey of the English Novel to 1900

Rise and development of the English novel from its beginnings in the 18th century through the end of the 19th century, including such writers as Defoe, Fielding, Austen, Shelley, the Brontës, Thackeray, and Dickens. Cross-listed with ENGL 4200. Prereq: Graduate standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5230 - The American Novel

Surveys major developments in the American novel from the 18th century to the 21st century. Cross-listed with ENGL 4230. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5236 - The American Short Story

Traces the development of the short story in the United States, from its beginnings in colonial tales to its contemporary renaissance as a dominant literary form. Cross-listed with ENGL 4236. Prereq: Graduate standing. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5250 - Twentieth Century Fiction

Deals with novels originating in a variety of countries in an effort to see the similarities and differences that varying nationalities bring to the genre. Cross-listed with ENGL 4250. Prereq: Graduate standing. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5280 - Proposal and Grant Writing

Focuses on research, design, composition, and editing original proposals. Includes idea development, identification of funding sources, and the creation of persuasive documents. Prereq: Graduate standing. Cross-listed with ENGL 4280. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5300 - History of British Drama

Intended as a survey of British drama from the miracle plays of the medieval period, through the Renaissance and Restoration, to the "kitchen sink" realists of the 1960s. Cross-listed with ENGL 4300. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Cross-listed with ENGL 4306, HIST 4306, 5306, WGST 4306, 5306. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Prereq: Graduate standing. Cross-listed with ENGL 4308, PHIL 4308, PHIL 5308, WGST 4308, WGST 5308. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5420 - Film Theory and Criticism

(1) Familiarizes students with some of the central concepts and debates in film theory and criticism, both classic and contemporary, (2) enables students to develop advanced analytic and interpretive skills, and (3) guides students toward discovering and articulating original critical and theoretical perspectives. Note: this course assumes that students have completed ENGL 2250, 3070, and 3080 or equivalent. Prereq: Graduate standing. Cross-listed with ENGL 4420. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5460 - Contemporary World Literature

Surveys literature written by world writers since World War II. Note: Texts read in English. Cross-listed with ENGL 4460. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5500 - Medieval Literature

Introduces representative writers from the Norman Conquest to about 1550. Emphasis on a variety of genres, including religious poetry, Arthurian romance, dream vision and drama. Cross-listed with ENGL 4500. Prereq: Graduate standing. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5520 - English Renaissance

Introduces some of the important writers in this major period of English literature (1500-1660). Special attention to the works of Sidney, Milton, Spenser, Shakespeare, Donne, Herbert and Johnson. Cross-listed with ENGL 4520. Prereq: Graduate standing. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5530 - Milton

Extensive reading in John Milton's poetry (Lycidas, Paradise Lost, Paradise Regained, Samson Agonistes) as well as his political, social and theological writings. Cross-listed with ENGL 4530. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5560 - English Romanticism

Studies major works of the chief English writers of the first part of the 19th century, with emphasis on such representative figures as Wollstonecraft, Godwin, Blake, Wordsworth, Coleridge, Hazlitt, Byron, Keats and Shelley. Cross-listed with ENGL 4560. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5600 - Modernism

Modernist literature from the beginning of the 20th century through World War II, including such writers as Eliot, Joyce, Forester, Ford, Yeats, Woolf and Barnes. Examines the social-political influences as well as the aesthetic and stylistic elements which define modernist writing. Cross-listed with ENGL 4600. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5601 - Principles and Practices of Second Language Acquisition

Overview of basic principles and practices in the learning and teaching of English as a second language. Cross-listed with ENGL 4601. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5651 - Second Language Writing

Topics include the similarities between first and second language writing, the processes of composition and revision, teacher response to student writing, student processing of feedback, writing assessment, and the reading or writing connection. Cross-listed with ENGL 4651. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5730 - Chaucer

Extensive reading in Chaucer's works in Middle English, including his lyrics, dream visions, Troilus and Criseyde, and the Canterbury Tales. Examines sources, historical and ideological factors influencing the texts. Prereq: Graduate standing. Cross-listed with ENGL 4730. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5755 - Illness & Disability Narrative

Narratives of mental, chronic or terminal illness, and disability have become common over the past decades. There are a number of ways in which these stories are told by those reflecting on their experiences: individuals choosing to tell such stories must consider how their stories will be received and what they are revealing about themselves in dealing with their conditions. Many issues arise when looking at the production and reception of these narratives, including acceptance and assimilation, stigmatization, access and quality of treatment, discrimination, accommodation, pity and stereotyping responses. These narratives are consumed, usurped, and reacted to by clinicians, communities and society at large with their own agendas, expectations, fears and judgments of the stories and of the individuals telling their stories. This course is about the issues and concerns of producing an illness or disability narrative and the consumption/reception of those narratives by health professionals, communities, and society at large. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Cross listed with ENGL 4755. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ENGL 5770 - Topics in English: Film and Literature

May look at specific genres, aesthetic approaches to literature, ideological or socio-political agendas, or other special topics in literature and/or film. Prereq: Graduate standing. Cross-listed with ENGL 4770. Term offered: spring, fall. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

ENGL 5840 - Independent Study: ENGL

Prereq: Graduate standing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ENGL 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Prereq: Graduate standing. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ENGL 5913 - Practicum in Language and Rhetoric

Supervised work in applied language or rhetoric and the teaching of writing. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ENGL 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ENGL 6840 - Independent Study

Prereq: Graduate standing. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits.

Semester Hours: 1 to 3

ENGL 6920 - Directed Readings

Offers graduate student's instruction on an individual basis. Serves as preparation for the MA (literature) comprehensive examination. Prereq: Graduate standing. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ENGL 6950 - Master's Thesis

Prereq: Graduate standing. Term offered: fall, spring. Repeatable. Max hours: 6 Credits.

Semester Hours: 1 to 6

ENGL 6960 - Master's Project

Prereq: Graduate standing. Term offered: fall, spring. Repeatable. Max hours: 6 Credits.

Semester Hours: 1 to 6

ENGL 6970 - Portfolio Exam

In the portfolio exam, students prepare the culminating document of students' MA work, a portfolio combining reflection on work done at CU Denver with a forward look at students' career goals. Prereq: Graduate standing. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

Entrepreneurship

ENTP 3200 - Essentials in Entrepreneurship

This introductory course informs students of concepts, skills and practical information relevant to startup companies. The materials are designed to help students anticipate HR, financial, and marketing problems through proper planning. The primary objective of the course is to teach students the real-world aspects of entrepreneurship in order to improve the odds of success.

Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3201 - Lean Startup Fundamentals

This course covers everything an entrepreneur needs to know about finance when running a startup or small business. Topics include: financial and legal aspects, financial reporting and cash flow analysis, budgeting, working capital management, asset decisions, obtaining capital,

business valuation, franchising, lease versus buy decisions and more. This course counts as a prerequisite to ENTP 3299. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3210 - Visionary Leadership for New Ventures

This course provides students with an overview of key leadership principles for creating strategy and managing teams in a startup environment. It introduces leadership concepts critical to gaining true organizational commitment and focuses on case studies relevant to common business issues. By exploring what entrepreneurial leaders actually do and how visionary leadership is required to develop an organization, students will learn how to execute these concepts through measurable goals and objectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3230 - Small Business Accounting and Finance

Includes financial and legal aspects, financial reporting and cash flow analysis, financial planning, budgeting, working capital management, asset decisions, obtaining capital, business valuation, franchising, lease versus buy decisions, and financial aspects of international trade and different methods of obtaining capital. This course counts as a pre-req to ENTP 3780 and ENTP 3299. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3240 - Developing Dynamic Concepts

This course is designed to prepare entrepreneurial-minded students to critically and objectively evaluate the feasibility of their ideas. Entrepreneurs are motivated by plethora of "the next big idea" and are often fatally optimistic about their ideas. The course work will demonstrate how to objectively test and validate the feasibility of an entrepreneurial idea through data-driven analytical and strategic planning. Additionally, this course will provide pragmatic applications of the course content by incorporating real-life case studies presented by practicing entrepreneurs as guest lecturers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3260 - High Impact Sales for Entrepreneurs

Selling one's own concept to prospective customers and investors is very different from selling products in a corporate environment. In this course, students will learn how to get their message heard, get their ideal clients to want to work with them, and use their authentic brand to sell their small-business concept successfully. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3270 - New Venture Operations

Introduces an operations model for developing internal and external operation plans for new ventures. Project management knowledge and skills are used to build operation plans. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3299 - Business Model Development & Planning

At the heart of every great business is a well-thought out business plan. This course teaches entrepreneurially-minded students how to create one, and students will tackle this project with a team or as an individual. Local entrepreneurs and investors will serve as guest speakers and share their experiences. Mentors and advisors associated with the Jake Jabs Center, as well as special Center-organized experiential events, will provide students with practical feedback. Prereq or Coreq: ENTP 3230 may be taken at the same time as 3299 for a coreq. If 3230 is completed as a prerequisite, a grade of C- or higher is required. Max hours: 3 Credits.

Semester Hours: 3 to 3

ENTP 3420 - Ethics: Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 3800 - Special Topics in Entrepreneurship

A variety of topics in entrepreneurship are offered. Consult the current 'schedule Planner' for semester offerings. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENTP 4028 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with ENTP 6028, INTB 4028, and INTB 6028. Max hours: 3 Credits.

Semester Hours: 3 to 3

ENTP 4840 - Entrepreneurship Independent Study

Max hours: 3 Credits. **Semester Hours:** 1 to 3

ENTP 4950 - Special Topics

A variety of topics in entrepreneurship are offered. Consult the current "Schedule Planner" for semester offerings. Prereq: Topics vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 0 to 3

ENTP 5939 - Internship/Cooperative Education.

Supervised experiences involving the application of concepts and skills in an employment situation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6020 - Business Model Development & Planning

Jointly taught by a successful Colorado entrepreneur and an experienced professor, this course familiarizes students with the key steps for preparing a business plan for a new (or existing) business venture. This course provides real-world feedback and advice and integrates coursework with THE CLIMB | Jake Jobs Business Plan Competition events to further enhance the quality of one's business concept. Several past students have won prizes at THE CLIMB and launched successful businesses from concepts developed in the course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6022 - Digital Strategy for Entrepreneurs

This course focuses on how digital innovations are disrupting traditional business practices. Students will participate in a team project where they identify an industry prepared for disruption, and then develop a relevant digital strategy. Students can also expect industry leaders from some of Colorado's greatest digital and tech companies as guest speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6028 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with ENTP 4028, INTB 4028, and INTB 6028. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6030 - Entrepreneurship in Emerging Industries

How entrepreneurs in emerging industries raise capital, find talent, attract customers, manage regulatory uncertainty, and respond to opposition. Focus on blockchain tech, renewable energy, fracking, and sharing economy, we will discuss the challenges and opportunities facing entrepreneurs pioneering new/controversial products and practices. We will also examine how these lessons generalize to innovation in other industries. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6420 - Ethics: Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized,

namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6620 - New Venture Operations and Project Management

Many viable businesses have failed due to cash flow problems, poor management, and poor execution. This course presents students with an operations model for developing internal and external plans when starting new ventures. Utilizing both academic fundamentals and practical knowledge imparted by an experienced instructor, this course provides the project management knowledge and skills needed to build strong operation plans. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6644 - Impactful Social Innovation

Innovations in social organizations are unique and warrant equally unique startup strategies for success. This course takes students through various stages of the social enterprise development process, from building competitive business models to attracting investors to operationalizing the business concept successfully while simultaneously doing social good. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6800 - Special Topics in Entrepreneurship

A variety of topics in entrepreneurship are offered. Consult the current 'schedule Planner' for semester offerings. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

ENTP 6801 - Building Biotechnology

This course teaches students the fundamentals of life science technology in entrepreneurship. Serving as an introduction to bioinnovation and entrepreneurship, topics covered include tech transfers, accounting and finance basics, opportunity assessments, legal and regulatory environments, clinical trials, project management best practices, ethics and societal issues, and team building. Cross-listed with IDPT 6301. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6802 - Regulatory Environment of Life Science Innovation

This course is designed to familiarize graduate-level engineering, business, law and life science students with the fundamentals of life science technology commercialization including drugs, devices, diagnostics, and healthcare IT and platform applications. Cross-listed with IDPT 7302. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6807 - Personal Branding

This course is designed to show students how to create successful personal brand strategies for professional and personal development in both entrepreneurial and intrapreneurial

environments. The course work will demonstrate the imperative link between marketing and personal branding through case studies, projects, guest speakers and reading materials. Students will also leave the course knowing how to develop and implement a personal branding plan. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6822 - Legal and Ethical Issues of Entrepreneurship

This course addresses the legal issues most frequently encountered by entrepreneurs and others involved in startups and small, closely held or family businesses. The focus is on how to avoid legal problems and how best to cope when they arise. Topics include choice of business form, legal aspects of raising capital, taxation, intellectual property law, employment law, product liability, e-commerce and the problems of managing lawyers and litigation. Note: Cannot receive credit for both BUSN 6540 and this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6824 - Entrepreneurial Financial Management

This course provides a foundation for the financial management of an entrepreneurial business. Topics covered include differentiation from traditional corporate financial management assumptions, financial aspects of setting up a business, and how to create, evaluate, forecast, and analyze future financial statements. Students will examine theoretical and practical valuation techniques, considerations for buying versus starting a business and franchising. The course also discusses different choices for financing a new business, venture capital, angel financing, crowd funding, private equity and security laws, harvesting alternatives, and financial distress turnaround considerations. Cannot receive credit for both FNCE 6460 and this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6826 - International Entrepreneurship

This course focuses on the intersection of international business and entrepreneurship. Topics addressed include international entrepreneurship theory and practice (opportunity identification, processes and route to market). This course also highlights new topics in international entrepreneurship such as digital globalization and new technologies driving international entrepreneurship (blockchain and the global supply chain). Leading practitioners and entrepreneurs will be facilitating these modules. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6834 - Lean Marketing

This course teaches students how to create successful marketing strategies in entrepreneurial environments where resources are often limited and negative outcomes can be unforgiving. The course work will demonstrate the imperative link between the fundamental marketing principles and entrepreneurial lean marketing guiding principles through real-life case studies, project, videos, podcasts and reading materials. Student will leave this course understanding

how to develop an effective and pragmatic marketing plan for an entrepreneurial venture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6840 - Independent Study: ENTP

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENTP 6842 - New Concept Development

This course provides insights and tools that will help students assess the viability of new business concepts (a.k.a. those in the very early stages of development). Unlike the "business plan" course where students create an actual plan, this course will help students determine if a new business concept is truly worthy of a business plan. The main objective of the course focuses on understanding problems and solutions from the potential market's perspective. The value of the problem-solution approach is that it quickly gets to the reason why people buy things: to solve perceived problems. Along the way students will employ various experiential and theoretical learning aids to investigate a series of relevant topics such as product markets, new business concepts and entrepreneurial risk-taking. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENTP 6848 - Leadership in New Ventures

This course provides students with an overview of key leadership principles for creating strategy and managing teams in a startup environment. It introduces leadership concepts critical to gaining true organizational commitment and focuses on case studies relevant to common business issues. By exploring what entrepreneurial leaders actually do and how visionary leadership is required to develop an organization, students will learn how to execute these concepts through measurable goals and objectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Environmental Sciences

ENVS 1044 - Introduction to Environmental Sciences

This survey course develops a basic understanding of ecological relationships and environmental systems. Issues such as the effects of human activities on earth's environment, extinction or diversity, greenhouse effect, hazardous or toxic wastes and human population growth are discussed. Students must also take the accompanying laboratory ENVS 1045. No co-credit with ENVS 1042. Prereq or co-req: ENVS 1045. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 1045 - Introduction to Environmental Sciences Laboratory

Introduces the basic scientific approach through investigations, observations, and experiments in environmental science. Students must also take the accompanying lecture ENVS 1044. No co-credit with ENVS 1042. Prereq or co-req: ENVS 1044. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ENVS 1342 - Environment, Society and Sustainability

Overview of perspectives on environmental issues within the context of sustainable development and taking a systems approach. The focus is on social science approaches to explore the human footprint on the earth, environmentalism, scientific uncertainty, policy creation and social change. Note: This course is a prerequisite for GEOG 4680 Urban Sustainability: Perspectives and Practice. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS2. **Semester Hours:** 3 to 3

ENVS 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: sophomore standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ENVS 3082 - Energy and the Environment

For students of various backgrounds who wish to increase their understanding of the environmental and technical issues of supplying the energy demands of our society. Alternative energy sources and conservation are explored as solutions to promote a sustainable society. Note: One college-level science course and MATH 1110 or equivalent are strongly recommended as preparation for optimal student success. Cross-listed with PHYS 3082. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 3232 - Weather and Climate

Introduces the processes and systems that govern both day-to-day weather and longer-term climate variations. Covers instrumentation and weather forecasting techniques. Prereq: GEOG 1202 or ENVS 1042 or (ENVS 1044 and ENVS 1045) Cross-listed with GEOG 3232. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 3500 - Topics in Environmental Sciences

Note: Topics may vary from one offering to the next. Repeatable. **Semester Hours:** 1 to 6

ENVS 4210 - Mining and the Environment

Mineral resources such as metals have played an important role in human civilization. However, the extraction, processing, and use of metals have left a legacy of damage to the environment and human health. These impacts and their mitigation are examined. Note: this course assumes that students have completed one course in college science or mathematics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4300 - Children's Geographies

This seminar is an interdisciplinary investigation of children, childhood and environment in the context of sustainability and equity. Theoretical and methodological perspectives are applied to understand children's interactions with/in different spaces. Cross-listed with GEOG 4300, GEOG 5300 and ENVS 5300. Restriction: Restricted to students with junior standing or higher or with instructor permission. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4500 - Topics In Environmental Sciences

Note: Topics may vary from one offering to the next. Note: necessary prior coursework varies according to the topic. Students should consult with the instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ENVS 4650 - Environmental Education

This course links the theory and practice of environmental education to inform curricular development and pedagogical knowledge. Cross-listed with ENVS 5650 and SCED 5650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4720 - Climate Change: Causes, Impacts and Solutions

Examines science behind past, present & future climate change & environmental, social & political implications & solutions. Explores recent scientific research, syntheses & mainstream literature advancing knowledge about causes & consequences of natural & anthropogenic climate change. Prereq: GEOG 3232. Cross-listed with GEOG 4720/ GEOG 5720/ ENVS 5720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4740 - Soil Science and Geography

Reviews chemical and physical properties of soils, soil development, and geographic distributions of soil types in the context of the role that soils play in natural and human-altered ecosystems. Cross-listed with GEOG 4740, GEOG 5740, ENVS 5740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4840 - Independent Study: ENVS

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ENVS 4850 - Understanding and Communicating Field Methods

Interdisciplinary course that presents a balanced overview of common field methods and how to communicate them effectively to a general audience. Includes hands-on experience with various field methods (e.g., transects, survey design, historical assessment, GIS, etc.) and communication strategies. Note: this course assumes that students have completed an introductory geography or environmental science course. Prereq: Junior standing or higher. Cross-listed with ENVS 5850 and GEOG 4850/5850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ENVS 4900 - Colloquium

Engages students and faculty in discussion of current and pertinent world topics, including specific readings, (guest) presentations, and creation of working research papers, among other items. Students and faculty may work in research groups to accomplish specific goals. Prereq: Junior standing or higher. Cross-listed with ENVS 5900, GEOG 4900 and 5900. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

ENVS 4992 - Advanced Regional Field Study

Directed, hands-on study of concepts involved in understanding geographic regions. Utilizes field observations, field techniques/methods, & data observation, collection, analysis, & interpretation related to the specific region being studied. May include physical as well as cultural phenomena. Note: Instructor permission required. Cross-listed with ENVS 5992, GEOG 4992, GEOG 5992. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

ENVS 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 9

ENVS 5010 - Landscape Biogeochemistry

A holistic approach to studying the role chemical elements play in synthesis/decomposition cycles, and the resultant environment from interaction of the lithosphere with the hydrosphere, atmosphere, biosphere, and pedosphere during geological, and ecological timeframes, together with anthropogenic activities. Note: this course assumes that students

have completed an introductory college-level physical geography or environmental science course. Prereq: Graduate standing. Cross-listed with GEOG 4010/GEOL 4010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5020 - Earth Environments and Human Impacts

Basic concepts describing earth's biomes and physical environment are presented in a systems context. Global warming assessment, from both political and scientific perspectives, is then presented. Model visualization of these concepts to consider human impacts on Earth's biomes is discussed. Earth system viewpoint, having links of Earth's biomes to oceans and atmosphere, completes the course discussion. Cross-listed with GEOG 4020, GEOL 4020. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5030 - Environmental Geology

Applies geological information to interactions between people and the physical environment. Increasing awareness of its importance in our society means that this is an expanding field as companies are required to address the environmental consequences of their actions. Note: students should be enrolled in the MSES program to take this course. All other students should consult with the instructor and obtain their permission prior to registering for this course. Prereq: Graduate standing. Cross-listed with GEOL 4030 and 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5280 - Environmental Hydrology

Examination of hydrologic processes in relation to climate, soils, vegetation, land-use practices, and human interactions. Natural scientific perspectives emphasized; field and laboratory included. Note: this course assumes that students have completed GEOG 1202 and one of: 1) GEOG 3232; 2) GEOG 4240/GEOL 4240/GEOG/5240; 3) GEOG 4010/GEOL 4010/ENVS 5000. Prereq: Graduate standing. Max hours: 4 Credits. **Semester Hours:** 4 to 4

ENVS 5300 - Children's Geographies

This seminar is an interdisciplinary investigation of children, childhood and environment in the context of sustainability and equity. Theoretical and methodological perspectives are applied to understand children's interactions with/in different spaces. Cross-listed with GEOG 4300, ENVS 4300 and ENVS 4300. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5305 - Water Quality and Resources

Introduces water resources aimed at students with little or no background in the field. This is a broad course covering topics ranging from the physical aspects of water to water politics and international law. While the course is largely a lecture format, discussion of current issues is a

significant part of the class. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with GEOG 4305. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5340 - Equity & Culture in Science Education: Local/Global

This course examines literature in science education related to issues of culture and equity. Topics will be framed by an understanding of equity in diverse classrooms and how it informs research, curriculum and instruction. Cross-listed with SCED 5340. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5403 - Unsaturated Zone Hydrology

Focuses on water and contaminant transport through the unsaturated zone, infiltration and drainage, and heat and gas transport. Students learn to design, perform field installation, and collect data in order to model and predict contaminant movement on/off site. Note: this course assumes that students have prior coursework in chemistry, physics, or calculus. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5410 - Aquatic Chemistry

Course objectives are to: (1) identify and understand chemical and physical principles and processes that control the composition of natural water, (2) prepare students to critically evaluate scientific literature and experimental design related to water quality and environmental remediation, and (3) examine the validity of environmental water data. Note: this course assumes that students have completed general chemistry and/or CHEM 4700. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5450 - Urban Food and Agriculture: Perspectives and Research

Provides an overview of research & practices in urban farming. Critically reviews emergent models of local food production/distribution. Compares new practices to traditional agribusiness. Assesses the prospects for solving sustainability problems within the modern agro-food system. Note: this course assumes that students have completed GEOG 3401. Prereq: Graduate standing. Cross-list GEOG 4450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5460 - Sustainable Urban Agriculture Field Study I

Provides a field-based overview of urban farm planning & management. Topics: range/land conservation, native/invasive species, water distribution, animal husbandry, government interaction, local markets, community relations, conservation easements and issues pertaining to urban farming. Note: this course assumes that students have completed ENVS 5450. Prereq: Graduate standing. Cross-list GEOG 4460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5470 - Sustainable Urban Agriculture Field Study II

Provides a field-based overview of current practices in local agricultural production. Emphasis will be placed on sustainable practices and their most efficient situation, Special consideration will be given to plausible solutions for food insecure communities both local and global. Note: this course assumes that students have completed ENVS 5450 and 5460. Prereq: Graduate standing. Cross-listed with GEOG 4470. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5480 - Urban Vegetable CSA: Planning, Production&Distribution

This course outlines the planning, production, and distribution in an active urban vegetable CSA (community supported agriculture) model. It is offered as a part of the GES Sustainable Urban Agriculture Certificate. Cross-listed with GEOG 4480. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5500 - Topics in Environmental Sciences

Topics may vary from one offering to the next. Prereq: Graduate standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ENVS 5620 - Health Risk Communication

Acquaints students with contemporary theory, research, and practice in health risk communication. Cross-listed with COMM 5620/4620 and PBHL 4620. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5650 - Environmental Education

This course links the theory and practice of environmental education to inform curricular development and pedagogical knowledge. Prereq: Graduate standing. Cross-listed with ENVS 4650 and SCED 5650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5700 - Synthesis for Interdisciplinary Science

Synthesis is an approach in interdisciplinary research and education that links ideas, data and methods. This course develops synthesis skills through the lens of systems theory. It includes exercises for synthetic thinking, examination of integrative tools, and a service-learning project. Cross-listed with GEOG 4700. Breadth and depth training in environmental sciences. Interest in interdisciplinary collaboration. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5720 - Climate Change: Causes, Impacts and Solutions

Examines science behind past, present & future climate change & environmental, social & political implications & solutions. Explores recent scientific research, syntheses & mainstream literature advancing knowledge about causes & consequences of natural & anthropogenic

climate change. Cross-list GEOG 4720/ GEOG 5720/ ENVS 4720. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5730 - Air Quality Modeling and Analysis

Emphasizes the use of air dispersion modeling tools. Topics include: sources and effects of air pollution, use of the WWW, and analysis of modeling results. Note: For graduate students in environmental sciences or engineering, and for those working in the environmental field. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5731 - Mountain Biogeography

This course utilizes the close proximity of the Rocky Mountains to examine altitudinal influences on species distributions. Topics include species patterns and distributions, disturbance, climate impacts, forest management and sustainability. Note: Please add this course note: A three-day field trip within Colorado will occur the first weekend of the Fall semester, and is highly encouraged. Restriction: Restricted to Graduate and Graduate Non-Degree students. Cross-listed with GEOG 5731. Max hours: 4 Credits. **Semester Hours:** 4 to 4

ENVS 5740 - Soil Science and Geography

Reviews chemical and physical properties of soils, soil development, and geographic distributions of soil types in the context of the role that soils play in natural and human-altered ecosystems. Prereq: graduate standing or permission of instructor. Cross-listed with GEOG 4740, GEOG 5740, ENVS 4740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5840 - Independent Study: ENVS

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ENVS 5850 - Understanding and Communicating Field Methods

Interdisciplinary course that presents a balanced overview of common field methods and how to communicate them effectively to a general audience. Includes hands-on experience with various field methods (e.g., transects, survey design, historical assessment, GIS, etc.) and communication strategies. Note: this course assumes that students have completed an introductory geography or environmental science course. Prereq: Graduate standing. Cross-listed with ENVS 4850 and GEOG 4850/5850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ENVS 5900 - Colloquium

Engages students and faculty in discussion of current and pertinent world topics, including specific readings, (guest) presentations, and creation of working research papers, among other items. Students and faculty may work in research groups to accomplish specific goals. Prereq: Graduate standing. Cross-listed with ENVS 4900, GEOG 4900 and 5900. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

ENVS 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ENVS 5992 - Advanced Regional Field Study

Directed, hands-on study of concepts involved in understanding geographic regions. Utilizes field observations, field techniques/methods, & data observation, collection, analysis, & interpretation related to the specific region being studied. May include physical as well as cultural phenomena. Cross-listed with ENVS 4992, GEOG 4992, GEOG 5992. Note: Instructor permission required. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

ENVS 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Prereq: Graduate standing. Cross-listed with ENVS 4995, GEOG 4995, and GEOG 5995. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 9

ENVS 6000 - Environmental Sciences Seminar

Student and faculty presentations of UCDHSC research projects and other current environmental sciences topics. All environmental sciences students are encouraged to attend, but credit is given only to students who present seminars. Two semesters of this course are required to receive a M.S. in Environmental Science degree: these students must register for this seminar and give presentations the first semester they are in the M.S.E.S. program and the semester in which they defend their master's project. Prereq: Graduate standing. Term offered: fall. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

ENVS 6002 - Research Topics in Environmental Sciences

Introduces research and professional development in the environmental sciences, focusing on current issues and trends in the field, methods of developing research and project proposals,

and defense of a proposal written during the semester. Students are introduced to the environmental sciences faculty and their research programs. Prereq: Graduate standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ENVS 6004 - Research Methods in Environmental Science

This core MS Environmental Science course will explore a range of methods commonly encountered in environmental science fields and how to develop a research project and proposal. Prereq: ENVS 6002. Restriction; Restricted to graduate-level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6100 - Research Topics in Environmental Management

This is one of 4 core MS Environmental Science courses that will review and apply the principles and methods involved in designing and implementing effective environmental management. Prereq: Must be graduate level and have completed ENVS 6002. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6200 - Risk Assessment

The process of determining the likelihood and extent of harm that may result from an activity or event. Topics covered are: hazard identification, dose-response evaluation, exposure assessment, and risk characterization. The subjects of risk management, risk perception, and risk communication are also discussed. Cross-listed with CVEN 5494, HBSC 7340. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6210 - Human Health and Environmental Pollution

Examines the roles of technology and society in the etiology and control/prevention of adverse health outcomes associated with releases of toxic substances. Examples come from experience and the literature on occupational cancer and reproductive hazards, occupational and environmental regulation of hazardous wastes, air, and water pollution. Cross-listed with HBSC 7210. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6220 - Toxicology

Introduces the field of toxicology. Emphasizes the mechanisms by which chemicals produce toxic effects and the methods for assessing toxicity. Note: Designed for students in the environmental sciences and occupational health fields. Note: this course assumes that students have completed one year of college chemistry and one year of college biology. Prereq: Graduate standing. Cross-listed with HBSC 7360. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6230 - Environmental Epidemiology

Provides a basic understanding of the methods used to study the effects on human health of exposures to physical, chemical, or biological factors in the external environment. The course explains the use of epidemiologic methods through a problem solving approach to investigating environmental health case studies. Note: this course assumes that students have completed a basic statistics course. Prereq: Graduate standing. Cross-listed with HBSC 7310. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6800 - Community-Based Research Practicum

For students to apply the concepts and skills presented throughout the masters program in a community setting. Students will participate in a real-world, studio-based project that meets the needs of a government, non-governmental, or private sector organization and will produce a scoped product. Prereq: ENVS 6002 with a grade of C or higher. Cross-listed with GEOG 6800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ENVS 6840 - Independent Study: ENVS

Prereq: Graduate standing. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ENVS 6950 - Master's Thesis

Prereq: Graduate standing. Repeatable. Max hours: 11 Credits. **Semester Hours:** 1 to 6

ENVS 6960 - Master's Report

Prereq: Graduate standing. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 6

Ethnic Studies

ETST 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2000 - Introduction to Ethnic Studies

Multi-disciplinary survey of contemporary and historical research analyses of the diverse social, economic, political, and cultural facets of African American, American Indian, Asian American, and Latino communities and cultures. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3. **Semester Hours:** 3 to 3

ETST 2010 - Introduction to Chicana/o Studies

This course introduces students to the broad range of the interdisciplinary field of Chicana/o Studies by examining the Chicana/o experience including history, identity, politics, immigration, labor, literature, and popular culture. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2024 - Race and Ethnic Relations

Surveys race and ethnicity, facts and myths about great populations, and the social and cultural sources of bias and discrimination. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2105 - African American Contemporary Social Issues

Exposes students to those areas of intellectual, social, cultural, economic, political, and educational concerns relevant to the African American experience. Principally an introductory survey of primary issues currently affecting the African American population. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2115 - Genocide in the 21st Century: Darfur and Beyond

Introduces students not only to the first genocide of the twenty-first century, in which over 400,000 ethnic Sudanese have been forcibly wiped out and millions displaced, but also studies the root cause of genocide and some of the past genocides. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2145 - The Gullah in Novel and Film

Explores the history and culture of a distinct group of African Americans known as Gullah/Geechee, whose ancestors were brought to the U.S. as part of a specialized and often illegal slave trade that existed in coastal South Carolina and Georgia. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2155 - African American History

Surveys the history of African Americans. Study interpretations, and analysis of major problems, issues, and trends affecting the African American population from pre-slavery to the present. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-HI1. **Semester Hours:** 3 to 3

ETST 2165 - Cultural Diversity Awareness in the Workplace

An analytical assessment aimed at understanding the impact and effectiveness of cultural diversity awareness. Participants focus on understanding their own cultural biases, recognizing the impact of cultural values, and gain an appreciation for the value of diversity in work organizations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2294 - Race and the Media

Virtually all Americans are susceptible to the blatant and subtle socializing and conditioning effects of the modern media (film, television, the internet). Explains the variety of cultural values transmitted through the media, with particular emphasis on racial issues. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2400 - Issues in Chicano/a Education

Historical overview of segregation, landmark court cases and immigration policy in the education of Chicano/as in Colorado and nationally from 1920 to the present. The intersection of these issues in the education of undocumented students is also examined. Cross-listed with TCED 2400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2496 - American Indian Literature

Introduces American Indian literature and other expressive forms, with emphasis on their aesthetic, linguistic, psychological, and historical properties, as well as the contemporary social and cultural influences upon native authors and their material. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2606 - The American Indian Experience

Surveys the relationships between Indian and non-Indian peoples, particularly in the context of the unique interaction between tribes and the federal government. Cross-listed with RLST 2680. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 2840 - Independent Study: ETST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ETST 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ETST 3002 - Ethnicity, Health and Social Justice

Surveys core issues contributing to racial or ethnic minority differences in health status. Historical and contemporary U.S. health and social policy, including the areas of environmental

health, sexual and reproductive health, children and immigrants, are examined. Cross-listed with PBHL 3002. Term offered: fall. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ETST 3010 - Conference Participation

Max hours: 1 Credit. **Semester Hours:** 1 to 1

ETST 3036 - American Indian Cultural Images

Analysis of images and perceptions of American Indians in American culture, as seen in politics, education, film, photography, advertising, art, literature and the media. Note: Students may not earn credit for this course if they have earned credit for ETST 2036. Term offered: fall, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3108 - Chicano/a and Latino/a History

An historical analysis of person's descendant from Mexico and Latin America. Areas of focus include ethnohistorical backgrounds, current interrelations, and social movements in both rural and urban groups. Other topics include: cultural patterns, identity maintenance, social reforms and problems of national incorporation. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3110 - Indigenous Studies

Examines how communities in diverse world regions preserve tradition, share knowledge, and respond to influences both within and outside of their immediate environments. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3129 - Contemporary Latin American Literature

The best of contemporary Latin American novels. Examines how U.S. policies in Latin America affect literary creation. Note: Taught in English. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3211 - Hip Hop Music & Culture

Covers the historical trajectory of hip hop music and culture from inception, aims to restructure stereotypes and offer a deeper perspective into how hip hop defines the identities of individuals as well as the consciousness of the masses within society. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3216 - Federal Law and American Indians

Examines the legal and political history of the U.S. in relation to American Indian Nations. Focuses on specific laws and Supreme Court cases in federal Indian law, with analysis of U.S. policy. There will be some comparison with Indian policies of other countries. Cross-listed with PSCI 3214. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3224 - U.S. Middle East Culture and Religion

Explores the history and development of the various major religions, cultures, and ethnic groups in the Middle East, their evolution and interaction in the U.S., and the historical impact and influence of the region, which continues to this day. Study of the region is timely and relevant due to U.S. involvement in various conflicts and peace efforts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3230 - African American Family

Exploration of the African American family social institution. Emphasis on historical roots and African influence is still enmeshed in the functioning of the family in modern society. Factors responsible for the ability of the family to meet the challenging society. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3254 - Race and Ethnicity in the Inner City

This dynamic course combines aspects of urban studies and sociology. Contemporary cultural factors of the minority ghetto experience are investigated as elements in urban crisis. Emphasis is placed on possible solutions through government agencies and community organization. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3272 - Global Media

Introduction to leading issues in the study of transnational media. The course will focus on the global media environment in the early 21st century, diverse countries, a variety of media, and social issues. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3274 - Power, Poverty, Culture

Studies the process that has rendered certain groups poor for generations. Studies African Americans, Whites, Chicanos/as and Latinos/as, and other ethnic groups that have lived in this society in a state of poverty. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3297 - Social History of Asian Americans

Introductory-level course surveys the social history of Asian American groups from the mid-19th century to the present. Examines immigration patterns, the development of communities,

social and economic problems, and anti-Asian movements and activities. Cross-listed with SOCY 3297 and HIST 3297. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3300 - Shamanic Traditions

Explores shamanic religious traditions across the world. This form of religion, involving spiritism, animism, trance states, and "mind power," is the oldest and most widespread religion in world history. Cross-listed with RLST 3300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3307 - Selected Topics: Asian Americans

Examines specific topics on Asian Americans to be selected by the instructor and the students. Detailed study of subjects relating to the Asian American experience and communities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3350 - Colonial Latin America

Surveys the creation of colonial empires by Spain and Portugal, 1492-1808. Topics include Native American responses to European incursions, women in colonial society, and slavery in Latin America. Cross-listed with HIST 3350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3357 - Asian American Literature

Readings in this course examine the experiences of men and women in different generations; how each group attempts to maintain traditional values in a foreign land, to assimilate, and to forge a new identity. Includes short stories, poetry, essays, and novels by leading Asian American writers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3365 - Aztlan in the United States: Chicano History from 1821

Explores the impact of U.S. rule on the Southwest, paying particular attention to legal, economic, and social changes that created new political and cultural identities in the Southwest. Cross-listed with HIST 3365. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3394 - Literature of Social Protest from an Ethnic Perspective

The literature of social protest of various ethnic groups is examined from a literary perspective and with reference to political and social theories. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3396 - History of the American Indian

Indigenous nations in North America comprise hundreds of diverse cultures. This course examines U.S. Indian policy and how indigenous nations responded; how they creatively

adapted, and resisted cultural change; and how they continue to persist culturally, socially, and politically. Cross-listed with HIST 3396. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3408 - Social Psychology of Latinos/as

Exposes students to research on Latinos/as in the areas of intelligence and achievement, language and learning ability, attitudes, perception and motivation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3567 - Asian American Women

Examines processes of change in values, roles, and relations of Asian American women, using contemporary and historical readings that address problems such as generational differences, assimilation, and changing roles. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3574 - Topics in Ethnic Studies

Topics vary from term to term, based upon interest and availability of instructors in specialized areas. Term offered: spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ETST 3616 - Selected Topics: American Indians

Detailed study of subjects related to American Indian experience and communities. Note: Specific topics to be selected by the instructor and students. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

ETST 3697 - Contemporary Asian American Experience

Examines the contemporary Asian American experience, including the adaptation of new immigrants or refugees, economic and educational problems, ethnic identity, intermarriage, anti-Asian discrimination and other civil rights issues, and recent political activism. Cross-listed with SOCY 3697. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3704 - Culture, Racism and Alienation

The effects of racism on the personality of participants in racist cultures. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3838 - History of the Mexican American in Colorado

Mexican Americans in Colorado from the 1800's to the present. Topics include founding of Colorado towns, labor strikes, farm worker issues, land and water rights, the Chicano Movement and political power. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 3840 - Independent Study: ETST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

ETST 3842 - Independent Study: ETST

Max hours: 12 Credits. **Semester Hours:** 1 to 3

ETST 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ETST 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

ETST 4000 - Research Methods in Ethnic Studies

Emphasizes the acquisition of a variety of data or information collection and analytic skills, especially those applicable to historical and social inquiry in ethnic studies. Cross-listed with ETST 5000. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4010 - Problematizing Whiteness: Educating for Racial Justice

Critical Whiteness Studies provides a deeper analysis of race that accounts for both sides of the race coin: the plight of people of color AND how Whites are complicit. This class looks deeper into how race operates within White contexts and how that impacts people of color so we bridge how Whites AND people of color can work together towards a racially equitable society. Cross listed with EDFN 4001 and EDFN 5001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4020 - Race, Culture and Immigration

In this course, we will consider the social and legal construction of race and immigration. We will also explore how immigrants have been racialized both historically and in the current moment. In addition, we will consider the role of culture in shaping the immigrant experience

and immigrant outcomes. Restriction: Junior standing or higher or instructor permission. Cross-listed with SOCY 4020, SOCY 5020 and ETST 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4030 - Race, Religion and Belonging in the United States

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images?as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Cross-listed with ETST 5030, RLST 4030, RLST 5030, HIST 4209 and HIST 5029. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4144 - Indigenous Political Systems

Surveys political theory and practice in indigenous societies in the Americas. Examines the impact of indigenous political thought on Euro-American politics, especially the U.S. Constitution, and explores the contemporary impact of indigenous people on current politics. Cross-listed with PSCI 4144. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4146 - Indigenous Politics

Surveys the status of the world's native peoples and nations, and the role of law and politics in the future of indigenous peoples in the global arena. Examines questions of human rights, economic development, and international law and politics. Cross-listed with PSCI 4146, 5145. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4156 - The Arab-Israeli Peace Process

Critical analysis of Arab and Israeli perspectives on the on-going peace negotiations in the Middle East. Historical background and religious-cultural aspects of current problems. Prereq: Upper division standing. Cross-listed with PSCI 4156. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4220 - African-American Literature

Surveys African-American literature with special emphasis on post-Civil War writing. Cross-listed with ENGL 4220 and 5220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4411 - Modern Mexico

Designed to familiarize students with the critical issues of Mexican political, economic and social history. Traces the emergence of independence and the difficult consolidation of an independent nation state. Cross-listed with HIST 4411, 5411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4515 - The African American in Politics

Examines African American politics in the U.S.; the role of African American interest groups, structure and function of African American political organizations, goals and political styles of African American politicians, trends, and the future of African American politics in the United States. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4555 - International Women's Resistance

Examines local and international struggles of women to build peace and justice by resisting systems of inequality such as colonialism, racism, patriarchy, globalization, and religious intolerance. Cross-listed with PSCI 4555/5555 and WGST 4555/5555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4558 - Chicano and Latino Politics

Analysis of the social, cultural, and economic factors that affect political behavior of Latinos. Special attention is paid to the Mexican American cultural heritage and to relations between Mexican Americans and Anglo Americans. Cross-listed with PSCI 4554. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4574 - Special Topics

Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4616 - Selected Topics: Chicanos/as and Latinos/as

Examines various contemporary issues in ethnic studies regarding Chicanos/as and Latinos/as. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4710 - Special Topics in Ethnic Studies

Students explore advanced topics in Ethnic Studies. Max hours: 3 Credits. **Semester Hours:** 1 to 3

ETST 4726 - North American Indian Art

Surveys major tribal styles of the North American continent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4730 - Peoples and Cultures of Sub-Saharan Africa

Covers various types of societies and civilizations that have existed in sub-Saharan Africa. Explores foragers, pastoralists, agricultural societies, chiefdoms, kingdoms, and empires, as these emerged and interacted with each other. Details their ideas and social orders, including the following topics: race, ethnicity, kinship, politics, economics, religion, magic, witchcraft, sorcery, marriage, age, gender, stratification, art, literature and oral traditions. Also addresses the impact of colonialism, the rise of nations, changes in the post-colonial period, warfare, and the impact of globalism on Africa today. Prereq: Upper division standing. Cross-listed with ANTH 4730 and 5730. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4768 - Chicano/Chicana Narrative and Social History

Provides a general, chronological, and thematic introduction to short stories and novels written by U.S. citizens of Mexican descent. Begins with early 20th century narratives by women, continues with the corrido and Post-World War II male writers, and ends with more recent publications by contemporary women writers. Social, historical, and political backgrounds are also emphasized, along with an analysis of the literary techniques and motifs. Cross-listed with ENGL 4768. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4827 - Women and the Law

Examines the role of the courts in the development of public policy toward women; how the legal system affects the economic power, family roles, safety and political participation of women. Cross-listed with PSCI 4827 and WGST 4827. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4840 - Independent Study: ETST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

ETST 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ETST 4960 - Capstone in Ethnic Studies

Provides a broad overview of social research methods pertinent to the study of race, ethnicity, gender, and culture. Explores theories concerning "ethnicity and race" as both social construct and constituent feature of people's identities and lived experiences. Ethnic Studies is an interdisciplinary major where students make connections across diverse fields of inquiry; this course provides a structure for integrating an interdisciplinary examination of the intellectual, cultural, and social dimensions of racial and ethnic groups. Cross-listed with ETST 5960. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

ETST 5000 - Research Methods in Ethnic Studies

Emphasizes the acquisition of a variety of data or information collection and analytic skills, especially those applicable to historical and social inquiry in ethnic studies. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ETST 4000. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 5020 - Race, Culture and Immigration

In this course, we will consider the social and legal construction of race and immigration. We will also explore how immigrants have been racialized both historically and in the current moment. In addition, we will consider the role of culture in shaping the immigrant experience and immigrant outcomes. Restriction: Graduate standing or instructor permission. Cross-listed with SOCY 4020, ETST 4020 and SOCY 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 5021 - Black and Latino Children in Families and Schools

With a focus on application of scholarship to practice, this interdisciplinary course will introduce graduate students to scholarly literature from family sciences, sociology, education and related fields to understand Black and Latino children within family, school and community systems. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with HDFR 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 5030 - Race, Religion and Belonging in the United States

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been

used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images?as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Restriction: Graduate standing or instructor permission required to register. Cross-listed with ETST 4030, RLST 4030, RLST 5030, HIST 4209 and HIST 5029. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ETST 5939 - Graduate Internship in Ethnic Studies

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Note: Students must have graduate standing and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ETST 5960 - Capstone in Ethnic Studies

Provides a broad overview of social research methods pertinent to the study of race, ethnicity, gender, and culture. Explores theories concerning "ethnicity and race" as both social construct and constituent feature of people's identities and lived experiences. Ethnic Studies is an interdisciplinary major where students make connections across diverse fields of inquiry; this course provides a structure for integrating an interdisciplinary examination of the intellectual, cultural, and social dimensions of racial and ethnic groups. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ETST 4960. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ETST 6950 - Independent Study: Ethnic Studies

Independent study in ethnic studies. **Semester Hours:** 1 to 18

Film and Television

FITV 1001 - Fundamentals of Film and Television

Provides fundamentals in academic theories surrounding visual culture. Topics include representation, spectatorship, mass media and popular culture, new media, and scientific images. Student participation is through discussion, creative projects, reading, and written response. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1005 - Introduction to Theatre & Arts in the Community

Discussion, workshops, and lectures designed to discover, analyze, and evaluate all aspects of the theatre experience: writing, acting, directing, staging, history, theory and its relationship to film & video. Attending plays and field trips to several Denver-area theaters, and demonstrations. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1 **Semester Hours:** 3 to 3

FITV 1035 - Introduction to Filmmaking

Students will be introduced to the concepts and practices of filmmaking. Through a series of hands-on exercises students will gain experience production management, cinematography, editing and client/director relationships. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1040 - Lighting, Grip, and Sound Introductory Workshop

The purpose of this course is to acquire basic competence with all film/video production equipment. The course acts as an introductory look at maintaining professionalism, efficiency, and safety in film/video sets for cast and crew. Restriction: Restricted to TFTV-BFA majors within the College of Arts & Media with the subplan FIT. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1050 - Production I Basics of Film and Television

Learn the fundamentals of video production including idea creation, videography, composing a professional image, cinematic lighting, sound track recording and construction, non-linear software. Individual and collaborative productions for film, video, and TV will be created. Prereq: FITV 1040. Restriction: Restricted to TFTV-BFA majors & FTPM minors (production) within the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1110 - Production Design: Theatre, Film and Video

This design research class explores the creative skills, technical knowledge and scholarly engagement employed by production designers. The students will understand how design elements enhance a production and create a production design for a video, film or play. Prereq: FITV 1040. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1115 - Horror in Western Culture and Cinema

This course is designed to analyze the history, practice and production of the horror film. By examining the horror genre students analyze how cinema is both a reflection of the time it was produced as well as it impacts on art and society. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1120 - Contemporary World Cinema

This course will examine representative examples of films from around the world to understand the current interest and concerns of world cinema, as well as discern what concerns various countries around the world, and how those concerns are expressed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1200 - The Culture of Television

The course will combine viewing of television programs with reading, writing and discussing television as students begin to understand intellectually, and learn to take an analytical view of this remarkable phenomenon. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1550 - Scriptwriting 1 - Fiction

Critical exploration of dramatic writing for stage and screen. Understand how imagery, character, story, narrative structure, literary conventions, and more, impact compelling writing. Utilize effective writing and critiquing strategies focused on drafting and writing an original film/TV script. Restriction: Restricted to TFTV-BFA majors within the College of Arts & Media with the subplan FIT. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1551 - Scriptwriting for Non-Majors

Critical exploration of dramatic writing for stage and screen. Understand how imagery, character, story, narrative structure, literary conventions, and more, impact compelling writing. Utilize effective writing and critiquing strategies focused on drafting and writing an original film/TV script. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 1600 - Writing Short Film:Non Fiction

Students study basic writing elements such as idea generation, character building, and scene setting while writing short non-fiction screenplays or teleplays for production. Prereq: TFTV-BFA: FITV 1550. Prereq: FTWM minor: no pre-req. Restriction: Restricted to TFTV-BFA majors & FTWM minors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2040 - Introduction to Digital Effects

Learn the fundamentals of digital effects, animation, compression, and color correction as you incorporate graphic elements into your productions. Demonstrate the skills to utilize software applications used to create 2D, 3D animation, and motion graphics, green screen technology. Prereq: TFTV-BFA: FITV 1001. Prereq: FTPM minor: FITV 1050 or FITV 1035. Restriction: Restricted to TFTV-BFA majors & FTPM minors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2050 - Production II Film and Television Techniques

Through a series of assigned film and TV projects students will be introduced to various genres of filmmaking, while building upon the skills of preproduction, production, and post-production. Prereq: BFA: FITV 1050. Prereq: FTPM minor: FITV 1050 or FITV 1035. Restriction: Restricted to TFTV-BFA majors & FTPM minors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2055 - Documentary Production

Students produce non-fiction film/TV productions in collaboration with non-profit organizations while exploring and experiencing industry practices. Prereq: FITV 1050 + FITV 2090. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2090 - Producing for Film and Television

Students will learn the various aspects of planning, scheduling, budgeting, and managing both television and film productions. Students will develop skills for conceptualizing projects from script to screen. Prereq: FITV 1550. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2220 - Acting for Film and Television

Provides the study, skill development and workshop experience for the actor in various media – including film, television, commercial, and voice-over work. Students do physical exercises, vocal training, develop vocabulary, and scene exercises. Prereq: BFA : FITV 1050 + FITV 1550. Prereq: FTPM minor: FITV 1050 or FITV 1035. Restriction: Restricted to TFTV-BFA majors and FTPM minors in the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2650 - Sound for Film and TV

Building upon basic understandings of audio for film and television techniques, students will get intermediate instruction and experience with field audio recording and audio post-production practices. Students will work with digital audio editing software to gain knowledge and skills in sweetening, mixing, and sound design. Prereq: FITV 1040. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 2670 - Cinematography

Students create film and TV projects that exhibit effective use of light, composition, depth of field, focal length. Student directors will learn how to collaborate with cinematographers and understand the science of photography, lenses, and lighting. Prereq: FITV 2040 + FITV 1050. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3040 - Live TV Multi-camera Directing

Working in a multi-camera television studio environment, students in this course will experience each aspect of creating multiple live-to-tape television programs. Students will work in teams to create a television pilot as well as individual projects. Prereq: BFA: FITV 3050 + FITV 3500. Prereq: FTPM minor: FITV 1050 or FITV 1035. Restriction: Restricted to TFTV-BFA majors & FTPM minors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3050 - Junior Project Production

Students will refine their knowledge of single-camera film and TV techniques in this hands-on, collaborative course. Students will conceptualize, develop, and shoot a short film or television project throughout the semester. Emphasis on storytelling, production design, production management, and cinematography. Prereq: FITV 2050 + FITV 1200 + FITV 2670 + FITV 2650. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3060 - Junior Project Post Production

Students will apply post-production skills learned in previous courses to edit projects produced in Prod 3/Jr Project. This course will emphasize the completion of a professional broadcast-quality production with full audio and visual sweetening. Students will attain advanced editing skills through a longer format project. Prereq: FITV 3050 + FITV 3500. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3090 - Producing Episodic Television

Students explore and develop skills in the collective practices necessary for the full production of an episodic television series. Students will actively participate in various aspects of episodic television production including preproduction, production, and post-production. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3200 - Film History 1

The development of cinema in the early 1880s brought with it a wealth of techniques still used today, from the close-up to crosscutting and montage. In this course students will view, analyze, research, and critique the beauty and sophistication of silent film from its beginnings through the late 1930s. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3220 - Advanced Acting Workshop for Film and Television

Students will further explore techniques and practices in the performing for film and television projects. This is an intense workshop designed to better prepare students to perform for a variety of on-camera projects. Prereq: FITV 2220. Restriction: Restricted to TFTV-BFA majors within the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3264 - Advanced Digital Effects

Students will study software and create projects with advanced visual effects. With industry standard techniques in animation, applying compositing, image acquisition and motion graphics. Students will create a variety of projects by the end of the semester. Prereq: FITV 2040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3300 - Film History 2

Take a journey through the many genres of film, from the introduction of sound to the present. Students will trace the development of various Hollywood genres and examine films that represent major developments in American cinema. In this course students will view, analyze, research, and critique films from 1938 to the present. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3350 - Editing Aesthetics

A historical, theoretical, and practical hands-on approach to deconstructing and utilizing editing aesthetics. Students will consider the theory behind editing strategies that elicit an emotional or response from viewers, and put those theories to practice through demonstrative production exercises as well as analytical writing. Prereq: FITV 2050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3500 - Writing for Episodic Television

Explores the constructive and critical process of writing prime-time dramatic television and alternative broadcast platforms. Each student is guided through a series of viewings, readings, and writing exercises culminating with the written completion of television episodes for an original series. Prereq: TFTV-BFA FITV 1200 + FITV 2050. Prereq: FTWM minor: FITV 1551 Restriction: Restricted to TFTV-BFA majors and FTWM minors in the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3510 - Feature Screenwriting

Emphasis is on creating character, conflict and structure through the use of theme, motifs, subplots, and story tone. Students complete the first act and a 25-page feature film treatment or the first draft of a feature-length script. Prereq: TFTV-BFA and FTWM minor: FITV 3500. Prereq: Non-TFTV-BFA Majors and Non-FTWM minors must have taken any two of ENGL 3415, ENGL 3417, ENGL 2390 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3550 - World Theatre

Discussion, workshops and lectures designed to discover, analyze and evaluate the world theatre experience from countries outside of the United States. The course will explore theatre and its precedents in Asia, Africa, Eastern Europe and Latin America. Max hours: 3 Credits. **Semester Hours:** 3 to 3

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FITV 3570 - Directing for Film and Television

Through a series of assigned video projects, students will practice the art of directing several film and television projects. Applying communication skills and directing techniques to the process. Prereq: TFTV-BFA: FITV 2220 + FITV 2050. Restriction: Restricted to TFTV-BFA majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3600 - Denver Film Festival

Students in this course will know how to contextualize films in terms of content and form. Through film viewing, written assignments, and critical analysis students learn to describe, classify and appreciate narrative, craft and artistic intent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 3611 - Drama of Diversity

Investigates the creation and reinforcement of gender, ethnic, and racial stereotypes in theatre, film, and television in the United States. The course explores how popular images are created by writers, directors, and performers, and become "reality" for the audiences for which they are intended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

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FITV 3770 - Advanced Production Design for Film and Television

Students with further explore design elements found in film and television, and utilize class projects in conjunction with other student film projects. Prereq: THTR 1110 or FITV 1110. Restriction: Restricted to TFTV-BFA majors within the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4000 - Senior Thesis Production

The first course of a two-part capstone experience in which students collaborate, plan, cast, budget, and produce a professional quality film/TV project or script. Projects/scripts will be completed in FITV 4010. Prereq: FITV 3060 + FITV 3040 or FITV 3090 + FITV 3200. Restriction: Restricted to TFTV-BFA majors within in the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4010 - Senior Thesis Post-Production

Second course of a two-part capstone experience in which students collaborate on post-production to complete the film/TV/script project. Emphasis will be on editing, color-correcting, audio sweetening, graphics, finishing a fine-cut of their project; students will seek distribution and exhibition. Prereq: FITV 4000. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4020 - CAM Film Productions

Under the supervision of a faculty member, this class works together as a group to create broadcast quality television projects. Projects will be designed for a PBS television market and may be aired as such. Pre-requisite: FITV 2050. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FITV 4050 - Advanced Cinematography

In this production workshop, students will analyze films and storyboards, and shoot projects created for specific action and special effects outcomes. In addition, students will examine a variety of techniques used to create action scenes in preparation for the edit. Prereq: FITV

2670. Restriction: Restricted to TFTV-BFA majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4200 - Advanced Directing for Film and Television

Students will further explore more advanced directing techniques to be utilized in film and television projects. Prereq: FITV 2570 or FITV 3570. Restriction: Restricted to TFTV-BFA majors within the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4400 - Acting for Film and TV Practicum

The practice, study and critique of acting and directing for varying film/TV projects. The class will incorporate, preparatory work, on-camera performance, directing, and an in-depth critique of the resulting work. Pre-req: TFTV-BFA: FITV 3220. Restriction: TFTV-BFA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4440 - Color Correction and Mastering for Film and Television

This course is designed to teach students the process of color grading and film finishing techniques. This includes use of industry standard color correction software and methods of providing deliverables for film and television distribution and exhibition. Prereq: FITV 2040. Restriction: Restricted to TFTV-BFA majors and FTPM minors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FITV 4600 - Special Topics

Specialized topics in film and video. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

FITV 4840 - Independent Study: FILM

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

Finance

FNCE 2939 - Internship

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

FNCE 3000 - Principles of Finance

This course provides an introduction to financial markets and institutions, financial statement analysis, interest rates and the time value of money, principles of security valuation, concepts of risk and return, and capital budgeting. Note: This course is required in the Business Core. A

grade of 'C' or better must be earned. Prereq: MATH 1070 or MATH 1060 or MATH 1110 or MATH 1080 or MATH 1130 or MATH 1401, AND ACCT 2200, AND DSCI/BANA 2010 or ECON 3811 all with a grade of C- or higher, AND ECON 2012 AND ECON 2022. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 3500 - Management of Business Capital

Students learn the basic principles governing the management of capital in the business firm. Topics include management of working capital, cost of capital, capital budgeting, firm valuation, and theory and management of capital structure, grade of 'C' must be earned to take subsequent courses for which this course is a pre-req.. Prereq: FNCE 3000 with a grade of 'C' or better. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 3600 - Financial Markets and Institutions

Focuses on the supply and demand for loanable funds, the process of money creation, the structure of interest rates, and the role of banks and the Federal Reserve in the financial system. Special attention is devoted to the impact of monetary and fiscal policies on interest rates, the flow of funds and economic activity; and the operation of financial markets and institutions. A grade of 'C' or better must be earned in this course to receive credit for the area of emphasis and to take subsequent courses for which it is a prerequisite. Prereq: FNCE 3000 with a grade of C or higher Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 3700 - Investment and Portfolio Management

In this course students learn about the different types of investment vehicles, including methods to estimate their value and analyze their risk. They will also be introduced to portfolio management, including the identification of objectives and constraints and the analysis and use of investment information. Topics include the functioning of security markets, asset allocation, security valuation, and portfolio analysis. A grade of 'C' or better must be earned to receive credit for the course, and to take subsequent courses for which it is a prerequisite. Note: FNCE 3700 and FNCE 3600 may be taken concurrently. Prereq: FNCE 3000 with a grade of C or higher. Coreq: FNCE 3500. As a corequisite, FNCE 3500 can be taken concurrently or prior. If completed prior, must earn a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 3840 - Independent Study: FNCE

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

FNCE 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FNCE 4370 - International Financial Management

Financial management in the international environment. Topics include international capital movements; international operations as they affect the financial functions; foreign and international institutions; and the foreign exchange process. Also considers foreign exchange theory and risk management, financial requirements, problems, sources, and policies of firms doing business internationally. Cross-listed with INTB 4370. Prereq: FNCE 3000 with a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4382 - Survey of Financial and Commodity Derivatives

This course introduces forward contracts, used in price risk management for millennia. We cover the properties of forward/futures contracts, structure of the markets and strategic implications for speculation and hedging. We price forwards from spot price, and introduce convenience yield. Options used for insurance purpose (think of your car insurance as a put option) is a more expensive way to manage risk; we cover option strategies and basic pricing. The course concludes with swaps, credit derivatives and structured products. Asset classes covered are equity, fixed income, currency, agriculture, energy (oil/gas and electricity) and metal/mining. Prereq: FNCE 3500 and FNCE 3700 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4424 - Corporate Restructuring

Examines the processes and decisions by which mergers, takeovers and other corporate restructuring occur, the transactions occur. Analyzes merger and acquisition decisions as part of strategic decision making, and how firms are valued in mergers. Discusses the market for corporate control and the public policy implications of mergers and corporate governance. Prereq: FNCE 3500. Restriction: Restricted to undergraduate Business majors with a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4470 - Behavioral Finance

Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers were generally rational and the prices of securities

were generally "efficient." In recent years, however, anecdotal evidence as well as theoretical and empirical research has shown this paradigm to be insufficient to describe various features of actual financial markets. In this course we examine how the insights of behavioral finance complements the traditional paradigm and sheds light on the behavior of asset prices, corporate finance, and various Wall Street institutions and practices. Prereq: FNCE 3500 with a C or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4480 - Introduction to Financial Modeling

Develops and implements financial models for purposes of financial planning and decision making. This course seeks to increase students' knowledge and skill in the development of basic Excel-based financial planning models, including cash budgets, financial statements, and capital budgeting analysis. The course also introduces Monte Carlo simulation using Palisade Corporation's @RISK software. Knowledge of computer and spreadsheet software needed. Restriction: Restricted to undergraduate Business majors at a junior standing or higher Prereq: FNCE 3000, FNCE 3500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4500 - Corporate Financial Decisions

This is a required capstone course for the financial management emphasis. It uses the case method to develop the analytical and decision making skills of students. Students are required to apply theories and concepts learned in previous finance and accounting classes to real world scenarios. Topical coverage includes financial analysis, planning, control, working capital management, long-term investment and financing decisions and corporate valuation. A grade of 'C' or better must be earned to receive credit towards graduation. Prereq: MATH 1070 or MATH 1110 or MATH 1080 or MATH 1130 or MATH 1401 AND DSCI/BANA 2010 AND ACCT 2200 all with a C- or higher; ECON 2012 AND ECON 2022 with a D- or higher; FNCE 3000 AND FNCE 3500 AND FNCE 3700 all with a C or higher. Restriction: Restricted to undergraduate students at a senior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4709 - Life and Health Insurance

The course is designed to provide the student with the basic understanding of life and health insurance concepts. The course will focus on a needs analysis for individual life insurance needs in preserving an estate or creating an estate. We also focus on the needs of the family and the preservation of the income stream for meeting short and long term needs and how we accomplish this via life insurance. We also will look at life insurance in terms of business planning using such concepts as key person life insurance, funding buy sell agreements, and related needs. On the health side, we will use a needs analysis approach to provide health coverage for the individual and family. We also explore the employee benefits arena and how businesses will focus on providing group medical coverage and related benefits in an ever changing health care environment with health care reform being phased in. We also will explore the internal workings of life and health insurance companies by review. Restriction:

Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4750 - Business Intelligence and Financial Modeling

In this course, the student learns to analyze and solve financial problems with spreadsheet models, apply Oracle Financial and Business Intelligence software that is widely used in corporate financial operations and model risk and uncertainty with Monte Carlo software. Prereq: ISMG 2050 with a grade of C- or higher, FNCE 3000 and (ISMG 3000 or ACCT 4054) all with a grade of 'C' or higher. Cross-listed with ISMG 4750. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4802 - Foundations of Commodities

This course introduces students to the physical aspects of commodities and connects them to the financial markets in which commodities are traded. Fundamental concepts and terminology necessary for understanding commodity production, transportation, economics, financial analysis and marketing are described. Supply chains for several specific commodities are reviewed in detail, as examples of the production and market structure knowledge needed to be successful professional participants in commodity trading capacities. The course also serves a foundation for more focused education in the specific commodity sectors, as well as the applied use of marketing and financial trading concepts learned in other courses. Cross-listed with FNCE 6802 and CMDT 4802/6802. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 4840 - Independent Study: FNCE

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

FNCE 4950 - Special Topics

Research methods and results, special topics and professional development in finance. Prerequisites vary according to topic and instructor requirements. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

FNCE 5939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. Prereq: 21 semester hours and 3.5 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FNCE 6290 - Quantitative Methods for Finance

This course provides a statistical foundation for subsequent courses in the Master of Science in Finance program. Major topics include descriptive statistics, probability theory, statistical estimation and inference and regression analysis. The emphasis is on finance applications, such as risk measurement, for portfolio diversification and the "market model". In addition, students develop competence in the use of statistical software packages. This course provides preparation for the statistical portions of the Certified Financial Analyst professional examinations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6300 - Macroeconomics and Financial Markets

Covers the U.S. financial system in the global economy. Specific topics include financial institutions, money creation and monetary policy; the Federal Reserve System and its operation; the international financial system; interest rate determination, yield curves, and their relation to fiscal policy; the role of households and business in financial markets; stock markets; and money markets and instruments. (Required for the M.S. in Finance degree.) Coreq: BUSN 6620. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6310 - Financial Decisions and Policies

Emphasizes investment and financing decisions, and the analysis of the financial condition of the firm. Specific topics include capital budgeting, cost of capital, financing mix and strategy, firm valuation and management of working capital. Instruction is by the case method. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6330 - Investment Management Analysis

In this course students will learn investment theories and how to apply them to portfolio management. Topics covered include asset allocation, security markets, the analysis and use of investment information, risk analysis and security valuation. This course is required for the M.S. in Finance degree. Prereq: BUSN 6640 and BUSN 6620 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6340 - Business Firm Valuation

In this class, students will learn two valuation techniques, fundamental valuation and relative valuation, to value a business. These techniques are useful in such situations as valuing firms for mergers and acquisitions and valuing stocks for investment purposes. Some of the topics included are valuation of start-up firms, valuation of privately held firms, and valuation of firms

with negative earnings. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6350 - Financial Innovations

Innovations include zero coupon bonds, inflation indexed bonds, structured notes, asset-backed securities, collateralized mortgage obligations, and interest rate swaps. The student learns about the markets and pricing of these securities, and how they affect interest rate risk. The course prepares the student for careers in corporate treasury management, structured financing, swaps trading, and mortgage backed securities design. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6360 - Management of Financial Institutions

Overview of financial institutions and their risk management/financial performance management issues such as: management of operational, credit, liquidity, interest-rate, capital, off-balance sheet, and environmental risks; Uniform Bank Performance Report (UBPR) risk/performance analysis, hedging techniques and regulations/performance/risk. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6365 - Banking Principles and Practices

Covers money and capital markets, commercial lending, asset and liability management, loan portfolio management and bank management. This class is only available to Colorado Graduate School of Banking students. Similar material is covered in FNCE 6300 and FNCE 6360. Therefore Business School students must enroll in those courses. Banking students cannot receive credit for FNCE 6300 or FNCE 6360. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 9

FNCE 6370 - International Financial Management

Addresses financial management in an international context that considers international capital movements and foreign exchange problems, and international operations as they affect financial functions. It reviews foreign and international institutions and the foreign exchange process and considers financial requirements, problems, sources and policies of firms doing business internationally. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Cross-listed with INTB 6372. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6372 - Time-Series Forecasting

Students learn forecasting methodologies such as ARIMA, regression, smoothing, and time-series decomposition applicable to marketing, finance, accounting, human resources management, and supply chain and production management decision-making. This course focuses on practical applications of forecasting techniques, choosing and comparing appropriate methods and applying the results to workplace situations. If you do not meet the prerequisites you may contact the instructor for permission to register. Prereq: BANA 6610 or BUSN 6530 or FNCE 6290 or (BUSN 6530 taken at CU Denver or consent of instructor - no CBK waivers of BUSN 6530 will be considered. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6380 - Futures and Options

This covers both speculation and hedging using futures and options. The student learns about futures pricing, how futures are related to the underlying commodities and how to design hedges. Stock index futures and interest rates futures get particular attention. The course covers the theory and application of option pricing, focusing on the binomial and Black-Scholes models. Popular options trading strategies are discussed. This course is useful for those who wish to trade or become portfolio managers, as well as those who plan on corporate treasury management. Prereq: BUSN 6640 with a C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6382 - Survey of Financial Derivatives

This course introduces forward contracts, used in price risk management for millennia. We cover the properties of forward/futures contracts, structure of the markets and strategic implications for speculation and hedging. We price forwards from spot price, and introduce convenience yield. Options used for insurance purpose (think of your car insurance as a put option) is a more expensive way to manage risk; we cover option strategies and basic pricing. The course concludes with swaps, credit derivatives and structured products. Asset classes covered are equity, fixed income, currency, agriculture, energy (oil/gas and electricity) and metal/mining. Prereq: BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6410 - Real Options and Decisions Under Uncertainty

This is an applied course in making investment decisions under uncertainty and flexibility. Traditional NPV analysis using tools such as Discounted Cash Flow (DCF) model assumes that once an investment decision has been made, managers have no control over the outcome and they remain passive throughout the life of the project. Most corporate projects, however, have a great deal of flexibility in terms of their execution. This course will help students develop skills to identify and analyze real options so that they may approach real world corporate investment

decisions in a strategic manner. This course may be used to fulfill the requirement for an options course in the MS (Finance) program. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6411 - International Corporate Governance

Discusses the structure and goals of the modern corporation, the primary governance mechanisms used to help companies achieve these goals, and how and why these roles, goals, and mechanisms vary across nations. The topics to be covered in the course include how share ownership, particularly by institutional shareholders, managerial compensation and board of director activities are being used to improve corporate governance systems. The class compares the Codes of Best Governance Practices from several countries as well as recent innovations in individual company governance rating systems. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Note: Students cannot receive credit for both FNCE 6411 and INTB 6411. Cross-listed with INTB 6411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6420 - Mergers and Acquisitions

Examines the processes and decisions by which mergers, takeovers and other corporate restructuring occur, the transactions occur. Analyzes merger and acquisition decisions as part of strategic decision making, and how firms are valued in mergers. Discusses the market for corporate control and the public policy implications of mergers and corporate governance. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6450 - Short-Term Financial Management

This course is a survey of methods for managing short term assets and liabilities. Specific topics include the analysis of the firm's liquidity and cash flow, banking relationships; collection and disbursement systems; management of short term investment and financing; management of receivables, payables and inventory; and short term forecasting. This course is affiliated with the Association of Financial Professionals, allowing students earning at least a 'B' to sit for the Certified Treasury Professional (CTP-A) exam. Prereq: BUSN 6640 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6460 - Emerging Market Finance

This course aims to explore key emerging market finance issues from the perspectives of corporations, investors and markets. Emerging economies are deemed to be the engine of growth opportunities in the world economy. However, compared with developed markets, they typically have some unique features in their economic systems and financial markets, and thus

different risk and return characteristics, leading to special considerations of capital budgeting, financing and investing in these economies. This course is to help develop a better understanding of financial markets, corporate finance and investments in emerging economies, with case studies on some major emerging markets (e.g., China, India). Prereq: BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with INTB 6460. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6470 - Behavioral Finance

Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers were generally rational and the prices of securities were generally "efficient." In recent years, however, anecdotal evidence as well as theoretical and empirical research has shown this paradigm to be insufficient to describe various features of actual financial markets. In this course we examine how the insights of behavioral finance complements the traditional paradigm and sheds light on the behavior of asset prices, corporate finance, and various Wall Street institutions and practices. Prereq: BUSN 6640. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6480 - Financial Modeling

Develops and implements financial models for purposes of financial planning and decision making. This course is intended to allow the student to increase her or his knowledge and skill in the development of various types of computer-based financial planning models. The students are exposed to the uses of a variety of computer software packages that can be used for modeling financial planning problems. Prereq: BUSN 6640, knowledge of computer and spreadsheet software. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FNCE 6800 - Special Topics

Experimental course offered irregularly for the purpose of presenting new subject matter in finance. Prerequisites vary depending upon topics covered. (Consult the 'Schedule Planner' for semester offerings.) Prereq: BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours: 3 to 3**

FNCE 6802 - Foundations of Commodities

This course introduces students to the physical aspects of commodities and connects them to the financial markets in which commodities are traded. Fundamental concepts and terminology necessary for understanding commodity production, transportation, economics, financial analysis and marketing are described. Supply chains for several specific commodities are reviewed in detail, as examples of the production and market structure knowledge needed to be successful professional participants in commodity trading capacities. The course also serves

a foundation for more focused education in the specific commodity sectors, as well as the applied use of marketing and financial trading concepts learned in other courses. Cross-listed with FNCE 4802 and CMDT 4802/6802. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 6840 - Independent Study: FNCE

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

FNCE 6995 - Travel Study

Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNCE 8990 - Dissertation Development

Supports development of a dissertation in conjunction with a student's advisor. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

Fine Arts

FINE 1000 - Fostering Creativity

Through discussions, readings, writings and creative investigations, students will delve into theoretical and experiential approaches to creativity and consider how different kinds of creativity and passions can be identified, cultivated and leveraged in their current and future academic and professional lives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1001 - Introduction to Art

The course introduces visual analysis and critical examination of art from prehistory to modern times. Through reading, vocabulary development, group discussions, tests, and research projects, students will learn how to appreciate art and critically evaluate form, content, and context. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1. **Semester Hours:** 3 to 3

FINE 1002 - International Perspectives through Animation

This course is a look at world political, economic, social, and technological challenges through the lens of animation and visual storytelling. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1003 - Creative Coding

Through discussions, readings, writings, and creative investigations, students will identify and evaluate the digital tools and software present in everyday life while they explore and learn the basics of computer code and the power of code as a creative tool. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 1100 - Drawing I

This course explores the act of drawing as a process of visual thought as an initial step to artistic expression. Students will develop an understanding of the basic principles of drawing as a way of learning to see. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1111 - First-Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max Hours: 3 Credits.

Semester Hours: 1 to 3

FINE 1120 - Photographic Fundamentals

Students learn fundamentals of digital photography through creative assignments that promote a broad understanding of the photographic medium. Topics include digital camera operation, sizing and resolution, principles of design, and interpreting photographic meaning. This course is designed for non-art majors. Restriction: Open to all students except FINE-BFA & BA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1140 - Topics in Photography

Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 1150 - Introduction to Darkroom Photography

Students learn traditional, film-based photographic practice. Topics such as camera functions, film processing, black and white darkroom printing, and alternative darkroom techniques are explored through demonstrations, critiques, readings, and discussions of historical and contemporary photography. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1400 - Two Dimensional Design

Focuses on the concepts and visual elements of all forms of two-dimensional art. Students gain an understanding of basic design principles as they analyze and visually articulate formal concerns in viewing contemporary and historical artworks as applied to studio problems. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1450 - Visual Culture: Ways of Seeing

A core course for majors and non-majors Visual Culture: Ways of Seeing explores how the meaning of imagery is encoded in cultural settings and transforms globally through changing technology and is integrated into daily life. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1. **Semester Hours:** 3 to 3

FINE 1500 - Three-Dimensional Design

Students explore the elements of art and the principles of design applied to three-dimensional design while developing an understanding of material properties, techniques, processes and tools. Creative practice is accompanied by written, theoretical and verbal critical thinking skills. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1810 - PREDAC: 3D Foundations

A lecture/lab course that explores the foundations of creating digital 3D content. Primary focus is an introduction to current 3D software. Class lectures, demonstrations and hands-on application will expose the student to the expectations for commercial high-end 3D animation production. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1812 - 3D Computer Graphics: Producing Animation

An online course that explores the theory, practices and fundamentals of the producing 3D animation. Students will explore the foundations of the animation process Note: Offered through Extended Studies. Must provide sufficiently powered computer. See www.cu3d.org Computer Graphics Certificate for details. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1820 - PREDAC: Animation Foundations

A lecture/lab course that explores the foundations of animation. Primary focus is an introduction to foundational animation techniques and methods. Class lectures, demonstrations and hands-on application will expose the student the expectations for high-end animation production. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 1822 - 3D Computer Graphics: Introduction to Digital 3D

An online course that explores the foundations of creating digital 3D content. Primary focus is an introduction to current 3D software. Note: Offered through Extended Studies. Must provide sufficiently powered computer. See www.cu3d.org Computer Graphics Certificate for details. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2020 - Drawing II

Students explore complex problems in the representation of space and learn observational drawing methods. Perceptual and constructed perspective is utilized to visualize three-dimensional form. Contemporary and historical artworks are studied with emphasis on the design of effective compositions. Prereq: FINE 1100. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2030 - Life Drawing

This course introduces the student to the human figure, addressing anatomy, movement and proportion. Discussion of historic and contemporary critical methods supplement studio practice. Exploring a variety of drawing media, students expand their drawing skills and relate the principles of composition and design to figure drawing. Prereq: FINE 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2105 - PRE-DIGD – Human-Centered Design, Innovation and Prototyping

Introduces collaborative interdisciplinary design and innovation from a human perspective. Using the wide array of Inworks prototyping facilities, teams of students will design and implement human-oriented projects of increasing scale and complexity, in the process acquiring essential innovation and problem-solving skills. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2140 - Topics in Photography

Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 2155 - Introduction to Digital Photography

Students learn digital image manipulation, input and output strategies, and digital camera functions through assignments that emphasize conceptual development. Presentations, readings, projects and class discussions help students gain an understanding of the role of digital imaging in contemporary photography. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2200 - Painting I

This course is an introduction to the language of painting. Students will learn to develop composition in layers, working from value to color and from direct observation to abstraction while exploring the range of visual possibilities that painting offers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2405 - Introduction to Digital Design

A project-based exploration of the design potentials of vector, raster and motion based digital media. Through project critiques, discussion and demonstration students will create projects

that examine technology as an art medium and a design strategy. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 2406 - Introduction to Digital Art & Imaging

A project-based exploration of vector, raster, and motion-based digital media. Through project critiques, discussion and demonstration students will create projects explore the creative and expressive potential of digital media. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2415 - Typography Studio

A studio course that teaches principles of typography and organization that is the foundation of design and artistic practice. Through drawing, editing, and moving typographic forms, students will create projects that examine how typography is used to create meaning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2420 - The Language of Design : What Makes Design Work

Through lectures, readings and discussions students explore essential contemporary design movements and designers and their effects on design, visual culture and communication. In addition, students learn and practice critical thinking skills and have the opportunity to learn and practice design processes and problem solving techniques. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 2425 - Essential Type-Design Applications

A studio devoted to learning the essential design-software needed to complete basic graphic design projects. Through lectures and creative projects students will learn how to create, manipulate, and prepare various types of art files for print or digital publishing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2428 - Introduction to Scientific Media Design

Through lectures, writings, readings, and discussions students will be introduced to Scientific Media Design as a profession as well as the history and emerging directions in the field. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2500 - Bronze Casting

Students learn lost wax casting with ceramic shell investment and bonded sand. Modeling, foundry work, centrifugal casting and welding for cast metal are introduced, as is steel fabrication and mixed media. Individual vocabularies are explored and design skills acquired. Prereq: FINE-BFA APC: FINE 1500. Repeatable. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2510 - Wood and Metal Sculpture

Wood, metal fabrication and introduction of the found object are premise for the exploration of individual visual vocabularies. Investigation and design are applied towards developing conceptual ideas while students advance skills in the metal and wood studios. Prereq: FINE-BFA APC: FINE 1500. Repeatable. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2600 - Art History Survey I

A lecture course studying Western and non-Western art from prehistory to medieval times, including major artists and periods. Through visual analysis, vocabulary acquisition, exams, and writing assignments, students demonstrate knowledge of historical developments and an ability to analyze the arts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2610 - Art History Survey II

A lecture course studying Western and non-Western art from the Renaissance to today, including major artists and periods. Through visual analysis, vocabulary acquisition, exams, and writing assignments, students demonstrate knowledge of historical developments and an ability to analyze the arts. Prerequisite applicable only for FINE-BA majors: FINE 2600. No prerequisite for all others. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2812 - 3D Computer Graphics: 3D Surface Modeling

An online course focused on mastery of creating surface models for digital 3D content. Students will develop skills/knowledge about the processes and techniques for building complex 3D objects. Note: Offered through Extended Studies. Must provide sufficiently powered computer. See www.cu3d.org Computer Graphics Certificate for details. Prereq: FINE 1810 or 1812 and 1820 or 1822. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2822 - DAC: Digital Cinematography

A lecture/lab course focuses on mastery of digital cinematography and visual storytelling. This course translates key production techniques: composition, camera craft, depth of field, camera blocking, and more, into the 3D world. This unique approach bridges the gap between traditional live-action cinematography and cutting-edge 3D animation, giving the students skills/knowledge about cinematic theory, practices and methods, as applied to digital 3D content creation. Prereq: FINE 1810, FINE 1820, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2832 - 3D Computer Graphics: 3D Lighting and Rendering

An online course focused on mastery of lighting the digital 3D environment. Students will develop skills/knowledge about the processes and techniques for creating realistic 3D lighting.

Note: Offered through Extended Studies. Must provide sufficiently powered computer. See www.cu3d.org Computer Graphics Certificate for details. Prereq: FINE 2812 and 2822. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2852 - 3D Computer Graphics: 3D Character Creation

An online course focused on mastery of skills for creating digital 3D characters. Students will develop skills/knowledge to create digital characters. Note: Offered through Extended Studies. Must provide sufficiently powered computer. See www.cu3d.org Computer Graphics Certificate for details. Prereq: FINE 2812 and 2822. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 2995 - Travel Study

Created for students doing travel study in a foreign country. Students register through the Office of International Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

FINE 3010 - Illustration I: Image Making

In a demonstration of expressive media, students develop their own point-of-view and style. Students work in a variety of media while learning historic and contemporary trends in illustration. Prereq: FINE 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3014 - The Graphic Novel Workshop

This course introduces students to the visual language of the graphic novel through the creation of sequential imagery and page development. Students will delve into the pictorial methods found in both historical and contemporary comic books, Manga and alternative cartooning. Prereq: FINE 1100; Prereq: FINE-BFA ILS: FINE 2030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3030 - The Media of Drawing

This course introduces students to the notion of drawing from life through an exploration of drawing methods/materials in the creation of artist's books- including learning various binding techniques and studying movement and juxtaposition as we draw in and from these books. Prereq: FINE 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3040 - Color Theory: Studio and Screen-Based Practice

This hybrid course delves into how color is essential to traditional studio-based and digital media artists through focusing on visual color and light perception, color mixing with pigment and digital applications, and the interaction of color. Prereq: FINE 1100, 1400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3050 - Figure Painting

This course is an exploration of representing the human form in pictorial space. Students will gain a knowledge of figural color, proportion, scale and space; and will understand the conceptual and visual weight carried by expressive gesture and figural form. Prereq: FINE 2030 and FINE 2200. Prereq FINE-BFA PND: FINE 1100, FINE 1400, FINE 1500, FINE 2155, FINE 2600, FINE 2610. Prereq PNDW-MIN: FINE 2200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3115 - Mixed Media and Photography

Students create artwork using techniques that combine photography and mixed media. Topics include expanding the photograph to a 3-dimensional form, working with light-sensitive materials, and manipulating the print surface. Students develop creative concepts that are enhanced by cross-disciplinary methods. Prereq: FINE 2155. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3130 - Photography, Optics and Perspectives in Italy

In this study abroad seminar course, students develop an understanding of their work within the context of the history of art and photography, particularly the artistic and scientific breakthroughs of the Renaissance, by exposing them to strategies and theories exemplified by the remarkably diverse and historically significant artwork that is available in collections in Florence, Italy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3135 - Historic Photographic Processes in Italy

Investigates the relationship between critical concepts and alternative photographic processes in the unique cultural and artistic setting of Florence, Italy. Students create images using historic photographic methods such as salted paper, P.O.P., albumen, photo-polymer gravure and bromoil. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3156 - Photography Studio and Lighting

Students learn lighting techniques that inform the conceptual and aesthetic qualities of their photographs. Topics covered include studio practice; location photography; commercial business practices; shooting and lighting techniques; and professional presentation. Prereq FINE-BFA PHO: FINE 1100, FINE 1150, FINE 1400, FINE 2155, FINE 2600. Prereq: FINE 2155. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3160 - Color and the Constructed Image

Students explore traditional color photography, concept development and expressive uses of the medium. Topics include chromogenic printing, color theory, and 4x5 technique in assignments that focus on constructed imagery. Students learn about the creative impact of

color on photographic representation. Prereq FINE-BFA PHO: FINE 1100, FINE 1150, FINE 1400, FINE 2155, FINE 2600. Prereq: FINE 1150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3161 - The Silver Fine Print

Students learn advanced black and white darkroom techniques while translating ideas into photographic form. Techniques include the zone system, split filter printing, toning, montage printing, and film/paper choices. Students gain insight into photographic artists, techniques, and movements. Prereq: FINE-BFA PHO FINE 1100, FINE 1150, FINE 1400, FINE 2155, FINE 2600. Prereq: FINE 1150. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3162 - The Digital Fine Print

Students learn the fine art of digital printing as it relates to photographic practice and theory. Assignments focus on conceptual development, advanced image manipulation, workflow, color management, and digital ink jet printing. Students gain insight into the role of digital imaging in contemporary culture. Prereq: FINE-BFA PHO: FINE 1100, FINE 1150, FINE 1400, FINE 2155, FINE 2600. Prereq: FINE 2155. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3171 - Concepts and Processes in Photography

Students develop skills in alternative photographic techniques. Processes covered include camera-less and pinhole photography, reticulation, non-silver printing, liquid emulsions, digital/traditional cross-manipulation. Students gain insights into the relationship between ideas and experimental ways of creating images. Spring only. Prereq: FINE-BFA PHO: FINE 3161. Prereq: FINE 1150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3172 - Photography and Community

Students learn strategies for creating visual narratives through photographic projects that involve the Denver community. Projects incorporate service learning, documentary photography, text and image, digital manipulation, digital printing, scanning, and handmade artist books. Spring only. Prereq: FINE-BFA PHO: FINE 3161, FINE 3162. Prereq: FINE 2155. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3200 - Intermediate Painting and Drawing

In this course students develop a body of work that expands on previous course work, to make the transition from assignment-based work to an independent body of work, and to prepare for advanced level study in painting and drawing. Prereq: FINE 2200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3240 - Abstract Painting and Drawing

This course explores the methods of abstraction as applied to painting and drawing. Through developing a body of paintings and drawings, students will gain an understanding of complex formal structures in the development of their work. Prereq: FINE 1100, FINE 2200. Prereq FINE-BFA PND: FINE 1100, FINE 1400, FINE 1500, FINE 2155, FINE 2200, FINE 2600, FINE 2610. Prereq PNDW-MIN: FINE 2200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3300 - Painting, Drawing and the Printed Image

This course explores the role of technology in the history of painting/drawing alongside studio practice. Students produce works that explore personal symbolism through the combination of graphically printed and hand-produce marks while utilizing technology as a tool in painting/drawing. Prereq: FINE 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3340 - Topics in Studio Art

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 3342 - Topics in Studio Art

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 3343 - Topics in Studio Art

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 3400 - Designing for Web and Mobile Apps

In a design laboratory, students learn how to design for the web and mobile devices. Through lectures, writings, readings, discussion and critiques, students will learn about HTML, CSS, CMS, web hosting, analytics and the principles of UX/UI. Restriction: Restricted to sophomore standing or above. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3405 - Introduction to Digital Video

A studio course for non-design-majors that focuses on the basics of storytelling using digital video. Through class projects, screenings, discussions and readings, students explore the concepts of montage and strategies to develop compelling video for artistic and commercial purposes. Prereq: FINE-BFA APC: FINE 2155. Note: class may not be taken by Digital Design or Transmedia majors for credit toward degree. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3410 - Illustration II: Digital Media

Students consider the diverse perspectives of clients, viewers, and context while developing concept art and imaginative illustrations. Digital workflows, visual research, and an iterative

process are emphasized. Prereq: FINE 3010. Restriction: FINE-BFA ILS or FINE-BFA APC. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3414 - Motion Design I

A course devoted to understanding time based imagery that focuses on utilizing video and motion graphics as a creative communication tool. Students create projects that explore topics using video, animation, time and motion using a non-linear digital editing software. Restriction: Restricted to FINE-BFA DIG or DIGD-MIN or FINE-BFA 3D ANI or the SCOM certificate. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3415 - Design Studio I

In a design laboratory students learn to turn ideas into visual solutions through the application of design principles. Through lectures, writings, readings, discussion and critiques of projects assigned students will build visual literacy in relation to digital design. Restriction: Restricted to FINE-BFA DIG or DIGD-MIN. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3417 - Design Research

This seminar class examines methods and processes used by designers to better understand the content they are asked to communicate while addressing increasingly complex social, technological and economic problems. Class topics will include: user interface and experience design, demographics, storyboarding, branding, and concept mapping. Restriction: Restricted to FINE-BFA DIG or DIGD-MIN. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3420 - Printing Preparation and Process

Through print shop visits, creating, manipulating, and preparing various types of art files for print or digital publishing, students will explore the history, various processes, and file preparation that are essential to producing final designed products. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3424 - Interactive Media

A foundational interactive design workshop exploring how to convey message and deliver information. Through critiques of projects, discussion and research, students will learn principles of user interface design, aesthetics and structure including their potential cultural impact. Restriction: Restricted to FINE-BFA DIG or DIGD-MIN. Prereq: FINE 3414, 3415, 3417; DIGD-MIN and FINE 3414, 3415. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3434 - 3D Motion Design

A course devoted to 3D as a medium for creating works of art. Through demonstration, discussion, readings and project based explorations, students will learn to navigate and create in the 3D digital environment. Restrictions: Restricted to FINE-BFA DIG or DIGD MIN. Prereq: FINE 3444, 3464. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3444 - Interactive Media II

An intermediate interactive design workshop devoted to using interactive design to solve communication and information problems at scale. Through investigations, readings and discussions students will create projects that explore user experience design, accessibility, and advanced research techniques. Restriction: Restricted to FINE-BFA DIG. Prereq: FINE 3424, 3454. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3450 - Digital Painting

Digital Painting is a studio designed for student exploration of artistic expression using digital tools for traditional painting and illustration techniques. Prereq: FINE 2200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3454 - Motion Design II

An intense course devoted to using time and motion as a medium for communicating ideas and information. Through creative investigations, readings and discussions students explore linkages between non-linear editing, animation and 3-dimensional animation as used in motion graphics. Restriction: Restricted to FINE-BFA DIG. Prereq: FINE 3414, 3415, 3417. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3464 - Design Studio II

In a studio environment students will develop advanced projects using animation, interactivity and motion graphics to create innovative solutions to design problems. Students will learn to apply design theory to practice through discussion, critiques and assigned projects. Restriction: Restricted to FINE-BFA DIG. Prereq: FINE 3424, 3454. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3474 - Narrative and Experience

A workshop-laboratory that focuses on narrative structure and its ability to create, control and manipulate viewer and user-experience. Through creative explorations, students will examine issues of identity, reception and audience and develop approaches to creating user-centered works of art/design. Restriction: Restricted to FINE-BFA DIG. Prereq: FINE 3444, 3464. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3500 - Installation Art

Students learn to modify the way a particular space is experienced through material intervention in everyday public or private spaces. Material use incorporates found, fabricated and new media. Prereq FINE-BFA APC: FINE 1100, FINE 1400, FINE 1500, FINE 2155, FINE 2600, FINE 2610, FINE 2500, FINE 2510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3505 - Environmental Art

Students create site-specific work to exist in a certain place or describe a specific location. This involves temporary outdoor landscaping combined with sited sculptural elements and gallery exhibition. The formal, political, historical, public, ecological, geographical and social context of the urban/rural environment will be explored. Prereq: FINE-BFA APC: FINE 1500. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 3510 - Mold Design & Casting

Mold design and construction using rubber, alginate and plaster is introduced for casting in metal, resin, glass, synthetics, concrete, plastic, paper and biodegradable materials. Drawing is included. Exploration of life size and small-scale castings. Prereq FINE-BFA APC: FINE 1500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3515 - Public Art

Students connect with professional/visiting artists installing public art works in Denver. Public relations, installation techniques, curatorial and administration skills are developed. Students learn to establish, maintain and promote public art collections. Prereq FINE-BFA APC: FINE 1500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3520 - Sculpture: Contemporary Artists and Concepts

Provides the art student (sculpture majors and non-majors) with a focused opportunity to look at contemporary sculpture, installation and performance art, and to examine the philosophical issues, processes, and methods, motivating practicing artists today. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 3525 - Prototyping Sculpture

This course will focus on contemporary professional practices and will cover topics such as project planning, an introduction to computer-aided design, fabrication, and digital outsourcing for the production of sculptural works. Prereq: FINE: 1500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3530 - Electronic Art

Video, sound and projection in contemporary sculpture. Introduction to sensors and motors and data visualization. A bridge between the digital laboratory and the sculpture studio in the context of object making, gallery and networked media. Prereq FINE-BFA APC: FINE 1500, FINE 3405. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3550 - Iron Casting

Students learn traditional and innovative mold making techniques for casting iron. Casting techniques include working with found objects, lost wax, ceramic shell and sand molds. Furnace design and equipment fabrication are researched. Public performance is integral to the class. Prereq FINE-BFA APC: FINE 1500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3555 - Concepts in Sculpture

This course addresses varying topics and trends in sculpture. Students produce work focused on issues in the professional field and develop their voice as an artist through thematic exploration. Course content rotates each semester to cover the dynamics of the field. Prereq: FINE-BFA APC: FINE 1500. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

FINE 3556 - Concepts in Painting and Drawing

This course addresses topics and trends in painting and drawing. Students produce work focused on issues in the professional field and develop their creative voice through thematic exploration. Course content rotates each semester to cover the dynamics of the field. Prereq: FINE 2200. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

FINE 3557 - Concepts in Illustration

This course addresses varying topics and trends in illustration. Students produce work exploring contemporary issues in the professional realm and develop their distinctive illustrative voice through multiple media. Course content rotates each semester to cover the dynamics of the field. Prereq: FINE 2010. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 3630 - History of Photography

Students examine the history of photography from its origins to the present. Emphasis is placed on photography as an artistic medium. Topics covered include important movements, photographers, and technical innovations, as well as photographer's broader role in visual culture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3631 - Photography: Theory and Criticism

Students investigate the historical texts of photographic criticism. Readings relate to photography as a fine art form, concentrating on 1970 to the present. Through discussions,

readings and critical writing, students examine and appreciate the significance of photographic theory. Spring only. Prereq: FINE-BFA PHO: FINE 3630. Restriction: All other students must be at sophomore-, junior-, or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3635 - Photography Now

Students investigate trends in fine art photography from 1990 through the present. By examining current topics, styles, and techniques students gain insights into contemporary photographic practice and its relationship to the history and future of the medium. Prereq: FINE-BFA PHO: FINE 3630. Restriction: All other students must be at sophomore-, junior-, or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3640 - Topics in Art History I: Art Before Modernism

Variable: Art History lecture course pertaining to art before Modernism. Prereq FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 3644 - Topics in Art History II: Modern and Contemporary

Variable: Art History lecture course pertaining to art since Modernism. Prereq FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 3775 - Asian Art, 1850 to Now

A lecture-based course about developments in art and architecture of China, Japan, and Korea after 1850. Prereq FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3814 - Digital 3D Methods: Motion Graphics for Animators

An online course is an introduction to Motion Graphics, devoted to understanding time based imagery that focuses on utilizing video, typography and 3D content as a creative communication tool. Students will create projects that explore video, animation, time and motion. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3815 - Storyboarding for Cinema and Game Previsualization

A lecture/lab course covering the foundations of the cinematic storyboarding process/techniques used for previsualization in the film, entertainment design and game industries. Students will develop skills/ knowledge for creating storyboards study and

understand film theory, storytelling, film language and grammar, and filmic composition. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3845 - DAC: Preproduction for Story

A seminar course focused on the story development/preproduction phases for the DAC senior thesis short. The principle focus of the course will be story development, preproduction activities and organizing the production team and production pipeline for the thesis short. Prereq: DACD 2830, DACD 2850, Acceptance into DAC. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

FINE 3995 - Travel Study

Created for students doing travel study in a foreign country. Students register through the Office of International Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

FINE 4000 - The Business of Art

Through research, discussion and projects, students learn marketing, copyright and business practices necessary for a career as an illustrator or artist. Students will develop professional materials, identify potential markets and implement a plan to promote their work. Restriction: FINE-BFA or FINE-BA and junior or senior class standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4001 - Illustration III: Investigative Methods

Students will learn to use writing, research methods, and market analysis to develop original and unique approaches to illustration. Projects will explore how media choices and production processes impact potential markets and responses from the public. Prereq: FINE 3410. Restriction: Restricted to FINE-BFA ILS majors within the College of Arts & Media. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4002 - Illustration IV: Thesis Development

Students will examine historical and contemporary trends in illustration while developing a research topic and writing a thesis paper. Students will produce new work and illicit responses from faculty and outside industry mentors as they begin to prepare a professional illustration

portfolio. Prereq: FINE 4001. Restriction: Restricted to FINE-BFA ILS majors within the College of Arts and Media. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4003 - Illustration BFA Thesis

Students will present their thesis project proposal, create original illustrations for their BFA Thesis exhibition and develop a professional illustration portfolio. Students will be expected to document their process and implement a promotional plan in order to build an audience for their work. Prereq: FINE 4002. Restriction: FINE-BFA ILS. Repeatable. Max Hours: 3 Credits.

Semester Hours: 3 to 3

FINE 4020 - Anatomy for the Artist

An intensive study of the human figure, focusing on its structure, movement and proportions. Skeletal and muscular systems are explored in depth using the classic texts of artistic anatomy to enhance students' drawings from observation. Prereq: FINE 2030. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 4050 - Design in a Global Workplace

Through intensive participatory workshops, study tours, and lectures this class examines the advantages of interdisciplinary community-based collaboration. This class also examines the complexities of cross discipline collaborations including multiple professional agendas, political and business establishments and the needs of the community. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 6

FINE 4140 - Topics in Photography

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 4195 - Advanced Photography I

Students create an independent body of photographic work that integrates sophisticated concepts with technical mastery. Through critiques, presentations and discussions, students relate subject matter to historical and contemporary context. Students build expertise in the area of professional development in photography. Prereq: FINE-BFA PHO: FINE 3156, 3160, 3171, 3172, and 3630. Prereq: FINE 3161, 3162, 3171. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4196 - Advanced Photography II

Students create an independent body of photographic work that integrates sophisticated concepts with technical mastery. Through critiques, presentations and discussions, students relate subject matter to historical and contemporary context. Students build expertise in the

area of professional development in photography. Prerequisite: FINE 4195. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 4215 - Interdisciplinary Studio

This is the first level of advanced studies in art practices where students create a body of work that expresses a more complex individual vision. Students learn to develop their creative work with self-selected materials and processes in support of focused concepts. Prereq: FINE 3500. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4340 - Topics in Studio Art

Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 3

FINE 4350 - Topics in Digital Design

Specialized topics are offered in new design technologies, theories, processes and conceptual thinking. Course subjects are unique and changing semester to semester. Max hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 4400 - Design Studio III

Set up as a collaborative studio, students learn to identify problems in the cultural and urban environment and design solutions that address those problems. Through discovery and research students will learn how design can be a catalyst for change. Restriction: Restricted to FINE-BFA DIG or DIGD-MIN or FINE-BFA 3D ANI or SCOM. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4411 - Immersive Storytelling I

This theory/research-oriented course teaches students in media and technical fields how to tell stories interactively using 360-degree video and computer-generated scenes that subjects experience through leading virtual reality headsets. We will touch on creating content for larger format immersive experiences. Restriction: Sophomore standing or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4420 - Interactive Media III

An advanced interactive design workshop where students will use current industry tools to explore a range of topics such as emerging technologies, design interactive prototypes, and experiential design. Through prototyping, discussion, readings, and critiques, students will create unique projects that explore contemporary and futurist topics. Prereq: FINE 3444. Restriction: Restricted to FINE-BFA DIG. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4421 - Immersive Storytelling II

This research-oriented course advances student skills in the media and technical issues of telling stories interactively using 360-degree video and computer-generated scenes that subjects experience through leading virtual reality headsets. Creating content for larger format immersive experiences is discussed further. Prerequisite: FINE 4411. Max Hours: 3 Credits.

Semester Hours: 3 to 3

FINE 4425 - Motion III

An intense workshop-laboratory devoted to advanced motion design techniques. Through creative investigation, the study of motion theory and hierarchy, compositing, filming techniques, broadcast parameters, aesthetics, typography and technical issues students will develop the in-depth knowledge necessary to excel as design professionals. Prereq: FINE 3454. Restriction: Restricted to FINE-BFA DIG. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4434 - Virtual Landscapes

In a studio environment students will explore place in relation to contemporary digital art practice. Through readings, lectures and production of projects assigned, students will create work that addresses the natural, urban and virtual environment. Max hours: 3 Credits.

Semester Hours: 3 to 3

FINE 4435 - Nudge: Behavioral Design 1

A studio course where students learn to develop 'nudge' solutions through the use of behavioral methods and theories. A 'nudge' is an attempt to influence people's choices and behavior in a predictable way without limiting their options or significantly changing incentives. Through field trips and observation, students will gain knowledge and skills in the field of behavioral design, including dual cognitive processing, choice architecture, behavioral mapping, and cognitive biases. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4446 - Visualization & Infographics

In our data and information-rich society, visual representations of data can be useful for making sense of available information and fostering understanding. This course engages students in critique existing work and encourages a thoughtful design process toward creation of information graphics and simple data/information visualizations. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4447 - Presenting Science

Sophisticated graphical components can help a viewing audience understand complex scientific information more clearly. This project-based learning course engages students in creation of

thoughtful graphic explanations of science for the purpose of enhancing scientific presentations and audience comprehension. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4448 - BioMedical 3D Animation

3D Animation can be a powerful tool for telling stories rooted in science and medicine. This course provides opportunity to learn from existing animated works while honing skills in storyboarding, narrative and 3D animation with focus on biology, science, and health education. SMD students explore and research BFA thesis topics. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4450 - Social Engagement by Design

Through lectures, discussions and conducting onsite research in international settings, students will become familiar with professional practitioners' Perspectives and experiences in the field of socially engaged design while interrogating current practices, policies, and expectations that inform community engagement and by Design. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 6

FINE 4480 - Design Thesis Research

Through lectures, studio visits and research, students will engage the profession and examine the role of the artist as a designer. Projects will focus on resumes, interview techniques, portfolio and business practices to prepare students for entering the design profession. Restriction: Restricted to FINE-BFA DIG Prereq: FINE 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4495 - Design Thesis Project

Through critique, research, and writing students will critically explore a thesis topic and develop professional quality visual solutions. Students will create work that expresses their personal artistic vision in relation to significant contemporary and historical artists and practice. Restriction: Restricted to FINE-BFA DIG Prereq: FINE 4480. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4505 - Sculptural Drawing

Students apply traditional and mixed media drawing skills, photography and digital reproduction to depict the sculptural object in two and three-dimensional space. Students learn to construct small-scale models and develop sculpture proposals. Drawing as sculpture medium is explored. FINE BFA APC: FINE 1500, FINE 3405. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4515 - Advanced Art Practices

Students in this course develop a body of work that expresses complex individual vision across media. Students learn to develop their artistic practice with self-directed processes in support of focused concepts in multiple studio areas. Prereq: FINE 3500. Coreq: FINE 4950. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4522 - Interdisciplinary Art in Ireland

The interdisciplinary course introduces students to the methods and concepts of contemporary site-specific art as critical theory through lecture and critique and as practice in the rural/urban landscape and studio along Ireland's County Clare coastline in the Burren region. Max hours: 6 Credits. **Semester Hours:** 6 to 6

FINE 4523 - Topics in Art History I: Art Before Modernism

Variable: Art History lecture course pertaining to art before Modernism. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 4524 - Topics in Art History II: Modern and Contemporary Art

Variable: Art History lecture course pertaining to art since Modernism. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 4525 - Museum Studies

A seminar about museums and art galleries as institutions for the preservation and exhibition of cultural materials. Through writing assignments, discussions, site visits, and analysis, students will demonstrate knowledge and critical thinking on the display of art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4600 - History of Modern Design:Industrial Revolution-Present

A lecture course involving the history of design from the Industrial Revolution to the present. The course will address the graphic design, typography, architecture, "Decorative arts", and new media from each period/major design movement in that time frame. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4610 - Pre-Columbian Art

A lecture course on the art and architecture of Mesoamerica and the Andes before the Spanish conquest. Through visual analysis, vocabulary acquisition, discussion, exams, and writing

assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Cross-listed with FINE 5610. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4620 - American Art

A lecture course on the art of the United States from colonial times to World War II. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4630 - History of Latin American Art:1520-1820

A lecture course studying Latin American art of 1520-1820, including major artists and periods. Through visual analysis, vocabulary acquisition, exams, and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the arts. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Cross-listed with FINE 5630. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4670 - Greek and Roman Art

A lecture course on art and architecture from ancient Greece and Rome. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4680 - Art of the Middle Ages

A lecture course on western European art and architecture from the fourth to the fourteenth centuries. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4700 - Italian Renaissance Art

A lecture course about developments in Italian Renaissance art and architecture. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq:

FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4705 - Northern Renaissance Art

A lecture course about developments in Northern Renaissance art and architecture. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4710 - Baroque and Rococo Art

A lecture course on Italy, Spain, France, England, and the Netherlands during the seventeenth and eighteenth centuries. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4712 - Applied Digital Media

This lab course provides students with the opportunity to execute practical applications in the use of digital 3D media for commercial and/or non-profit venue. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

FINE 4730 - Arts of Japan

A lecture course on selected themes and periods in Japanese art. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4750 - Arts of China

A lecture course on selected themes and periods in the arts and architecture of China. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4770 - Art of India and Southeast Asia

A lecture course on selected themes and periods in the arts of India and Southeast Asia. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4790 - Methods in Art History

A seminar about the various research methodologies in the history of art. Through reading, discussion, research, writing assignments, and presentations, students will demonstrate knowledge of art historiography. Prereq: FINE-BA: FINE 2600 and FINE 2610; ENGL 2070 or ENGL 4180 or ENGL 4280. Prereq: FINE-BFA: FINE 2600 and FINE 2610. All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4825 - Architectural Visualization

A lecture/lab course covering the 3D visualization of architectural projects. Students will develop skills/ knowledge about the techniques for creating realistic 3D models, texturing, lighting, and presentation. Special emphasis will be placed creating realism in modeling, materials, lighting, and professional renderings. Prereq: FINE 1820. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4840 - Independent Study: FINE

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

FINE 4950 - Studio BFA Thesis

Studio: BFA Thesis involves the preparation, exhibition and critical faculty response to students' Creative work. Course work focuses on contemporary trends in the arts, the commerce of the arts and the professional practices necessary to an artist' Self-promotion. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4951 - Bachelor of Art Thesis

A seminar that emphasizes creative and original research through the composition of a substantial paper on a topic in art history. Through discussion, presentations, and individual readings, students will demonstrate skills in research, writing, and critical thinking. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 4970 - Modernist Art

A lecture course about developments in Modernist art and architecture from the late 18th century to 1960. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of the period's historical developments and an ability to analyze its art. Prereq: FINE 2600 and FINE 2610 for FINE-BA and FINE-BFA majors ONLY. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4980 - Gender in Contemporary Art

This lecture course will address ways in which gender issues have affected the creation and study of visual arts since the early 20th century, with an emphasis on art and culture since World War II. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4990 - Contemporary Art: 1960 to Present

A lecture course about developments in art and architecture since 1960. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Prereq: FINE 2600 and FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 4993 - Topics Seminar in Art History I: Art before Modernism

Variable: Art History seminar pertaining to art before Modernism. Prereq: FINE 2610 for FINE-BA and FINE-BFA majors ONLY. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 4994 - Topics Seminar in Art History II: Modern and Contemporary Art

Variable: Art History seminar pertaining to Modern and contemporary art. Prereq: FINE 2610 for FINE-BA or FINE-BFA majors only. Restriction: All other students must be at junior- or senior-level standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 4995 - Travel Study

Created for students doing travel study in a foreign country. Students register through the Office of International Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

FINE 5020 - Graduate Anatomy for Artists

An intensive figure drawing course that focuses on structure, movement and proportions. Skeletal and muscular systems are studied using the classic texts of artistic anatomy. A research paper is also required. Prereq: Graduate Level Standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5190 - Graduate Photography

Graduate students create an independent body of photographic work that integrates sophisticated concepts with technical mastery. Through critiques, presentations and discussions, students relate subject matter to historical and contemporary context. Students build expertise in professional development in photography. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5200 - Graduate Painting/Drawing I

An intensive painting and drawing course for students who have completed their bachelor's degree in fine arts to further develop their technical and expressive means to implement their ideas. Self-directed studio is paired with studies in theoretical and critical analysis. Note: Students missing the first 2 classes of this course may be administratively dropped. Students will not be allowed to add course if they have missed the first 2 classes. Restriction: Restricted to CU Denver Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5210 - Graduate Painting/Drawing II

This is the second level of graduate painting and drawing with a tutorial focus. Emphasis is placed on directed research and the development of significant body of original work reflecting student's expressive and theoretical concerns. Note: Students missing the first 2 classes of this course may be administratively dropped. Students will not be allowed to add course if they have missed the first 2 classes. Restriction: Restricted to CU Denver Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5340 - Topics in Studio Art

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 5446 - Visualization & Infographics

In our data and information-rich society, visual representations of data can be useful for making sense of available information and fostering understanding. This course engages students in critique existing work and encourages a thoughtful design process toward creation of information graphics and simple data/information visualizations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5447 - Presenting Science

Sophisticated graphical components can help a viewing audience understand complex scientific information more clearly. This project-based learning course engages students in creation of thoughtful graphic explanations of science for the purpose of enhancing scientific presentations and audience comprehension. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5448 - BioMedical 3D Animation

3D Animation can be a powerful tool for telling stories rooted in science and medicine. This course provides opportunity to learn from existing animated works while honing skills in storyboarding, narrative and 3D animation with focus on biology, science, and health education. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 5450 - Social Engagement by Design

Through lectures, discussions and conducting onsite research in international settings, students will become familiar with professional practitioners' Perspectives and experiences in the field of socially engaged design while interrogating current practices, policies, and expectations that inform community engagement and by Design. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 6

FINE 5522 - Interdisciplinary Art in Ireland

The interdisciplinary course introduces students to the methods and concepts of contemporary site-specific art as critical theory through lecture and critique and as practice in the rural/urban landscape and studio along Ireland's County Clare coastline in the Burren region. Max hours: 6 Credits. **Semester Hours:** 6 to 6

FINE 5523 - Topics in Art History I: Art Before Modernism

Variable: Art History lecture course pertaining to art before Modernism. Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FINE 5524 - Topics in Art History II: Modern and Contemporary

Variable: Art History lecture course pertaining to art since Modernism. Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 5525 - Museum Studies

A seminar about museums and art galleries as institutions for the preservation and exhibition of cultural materials. Through writing assignments, discussions, site visits, and analysis, students will demonstrate knowledge and critical thinking on the display of art. Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

FINE 5600 - History of Modern Design:Industrial Revolution-Present

A lecture course involving the history of design from the Industrial Revolution to the present. The course will address the graphic design, typography, architecture, "Decorative arts", and new media from each period/major design movement in that time frame. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5610 - Pre-Columbian Art

A lecture course on the art and architecture of Mesoamerica and the Andes before the Spanish conquest. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5620 - American Art

A lecture course on the art of the United States from colonial times to World War II. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5630 - History of Latin American Art:1520-1820

A lecture course studying Latin American art of 1520-1820, including major artists and periods. Through visual analysis, vocabulary acquisition, exams, and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the arts. Restriction: Restricted to Graduate Students. Cross-listed with FINE 4630. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5632 - History of Digital Media

Art historical survey and critical discourse of digital and electronic multimedia that covers the influences which have shaped this medium, its major contributors, the technological innovations and cultural impacts on society as an art form and commercial market form. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5644 - Topics in Art History

Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FINE 5670 - Greek and Roman Art

A lecture course on art and architecture from ancient Greece and Rome. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5680 - Art of the Middle Ages

A lecture course on western European art and architecture from the fourth to the fourteenth centuries. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5700 - Italian Renaissance Art

A lecture course about developments in Italian Renaissance art and architecture. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5705 - Northern Renaissance Art

A lecture course about developments in Northern Renaissance art and architecture. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5710 - Baroque and Rococo Art

A lecture course on Italy, Spain, France, England, and the Netherlands during the seventeenth and eighteenth centuries. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5730 - Arts of Japan

A lecture course on selected themes and periods in Japanese art. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5750 - Arts of China

A lecture course on selected themes and periods in the arts and architecture of China. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art.

Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5770 - Art of India and Southeast Asia

A lecture course on selected themes and periods in the arts of India and Southeast Asia. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5790 - Methods in Art History

A seminar about the various research methodologies in the history of art. Through reading, discussion, research, writing assignments, and presentations, students will demonstrate knowledge of art historiography. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5825 - 3D Architectural Visualization

A lecture/lab course covering the 3D visualization of architectural projects. Students will develop skills/ knowledge about the techniques for creating realistic 3D Architectural visualization. Special emphasis will be placed creating realism in modeling, materials, lighting, and professional renderings. Intro level 3D/CAD skills req. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5840 - Independent Study: FINE

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

FINE 5939 - Internship

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

FINE 5970 - Modernist Art

A lecture course about developments in Modernist art and architecture from the late 18th century to 1960. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of the period's historical developments and

an ability to analyze its art. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5980 - Gender in Contemporary Art

This lecture course will address ways in which gender issues have affected the creation and study of visual arts since the early 20th century, with an emphasis on art and culture since World War II. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5990 - Contemporary Art:1960-Present

A lecture course about developments in art and architecture since 1960. Through visual analysis, vocabulary acquisition, discussion, exams and writing assignments, students will demonstrate knowledge of historical developments and an ability to analyze the art. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 5993 - Topics Seminar in Art History I: Art before Modernism

Variable: Art History seminar pertaining to art before Modernism. Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 5994 - Topics Seminar in Art History II: Modern and Contemporary Art

Variable: Art History seminar pertaining to Modern and contemporary art. Restriction: Restricted to Graduate Students. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FINE 5995 - Travel Study

Created for students doing travel study in a foreign country. Students register through the Office of International Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

Foundations

FNDS 5000 - Teaching as a Profession

General foundations of education course for pre-service candidates. Provides a broad overview of the historical, sociological, philosophical, and legal foundations of education. Includes an examination of contemporary issues in schooling, school organizational patterns, and the professional rights and responsibilities of the teacher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FNDS 7420 - History and Philosophy of Education: Twentieth Century America

Designed around selected themes from 20th century American social, political and economic history. Students examine such issues as immigration, racism, war, and social reform to identify the larger societal forces, ideas, and values that have shaped contemporary American education. Overriding purpose of the course is the development of an enlarged frame of reference from which to exercise professional judgment. Cross-listed with FNDS 5420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

French

FREN 1000 - Introduction to Cultures of the French- Speaking World

Introduces students to the many cultures of the French-speaking world. Taught in English for accessibility to students from different colleges at the University. The countries studied are: France, its overseas departments (Guadeloupe and Martinique) and territories (Tahiti); Quebec; Senegal; and other African countries. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1. **Semester Hours:** 3 to 3

FREN 1001 - French Language I

Introductory course in French language skills, in which basic grammatical structures are introduced, together with elementary vocabulary and cultural items that allow the student to carry on simple conversations in French. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. No previous study of French is required. No co-credit with FREN 1010. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

FREN 1002 - French Language II

Second semester of elementary French language skills continuation of French Language I (FREN 1001). More complex grammatical structures are introduced together with appropriate vocabulary and cultural and literary readings that allow students to carry on more complex conversations. Note: This course assumes that students have passed FREN 1001 or 1010 or equivalent, or have taken one year of high school French, or possess equivalent proficiency. A grade of C- or higher in the previous French course is recommended for success in this course. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. This course is not intended for native speakers. No co-credit with FREN 1020. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

FREN 1010 - Beginning French I

Basic grammatical and syntactic structures are introduced, together with an elementary vocabulary and cultural items that allow the student to carry on simple conversations in French. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. No previous study of French is required. Max hours: 5 Credits. **Semester Hours:** 5 to 5

FREN 1020 - Beginning French II

(Continuation of FREN 1010.) More complex grammatical structures are introduced, and literary and cultural readings are added. Elementary vocabulary and cultural awareness are expanded to enable the student to carry on more complicated conversations. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed FREN 1001 or 1010 or equivalent, or have taken one year of high school French, or possess equivalent proficiency. A grade of C- or higher in the previous French course is recommended for success in this course. This course is not intended for native speakers. Max hours: 5 Credits. **Semester Hours:** 5 to 5

FREN 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max hours: 3 Credits.

Semester Hours: 1 to 3

FREN 2003 - French Language III

Third semester of French language skills- continuation of French Language II (FREN 1002). Further introduction to beginning & intermediate level grammatical structures with appropriate vocabulary and cultural & literary readings that allow students to understand oral & written French and to speak & write in French in everyday situations. Note: This course assumes that students have passed FREN 1002 or 1020 or equivalent, or have taken two years of high school French, or possess equivalent proficiency. A grade of C- or higher in the previous French course is recommended for success in this course. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. This course is not intended for native speakers. No co-credit with FREN 2110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 2004 - French Language 4: Introduction to Advanced Studies

This course is designed to review and further develop French language skills, to continue the study of Francophone cultures and to prepare students for advanced-level French studies. Note: This course assumes that students have passed FREN 2003 or 2110 or equivalent, or have taken three years of high school French, or possess equivalent proficiency. A grade of Cor higher in the previous French course is recommended for success in this course. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. This course is not intended for native speakers. No co-credit with FREN 2020. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 2110 - Intermediate French I: Grammar Review, Reading and Composition

Designed to further develop all the language skills, with particular emphasis on reading and writing, and to further continue students' introduction to French culture. Students review grammar and vocabulary, read and discuss *Le Petit Prince*, and express their reactions to the text both orally and in writing. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed FREN 1002 or 1020 or equivalent, or have taken two years of high school French, or possess equivalent proficiency. A grade of C- or higher in the previous French course is recommended for success in this course. This course is not intended for native speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 2120 - Intermediate French II: Grammar Review and Conversation

Designed to further develop all the language skills, with particular emphasis on speaking, and to continue students' introduction to French culture. Students review grammar and vocabulary, read and discuss short cultural texts and participate in oral activities intended to increase communication skills. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed FREN 2003 or 2110 or equivalent, or have taken three years of high school French, or possess equivalent proficiency. A grade of C- or higher in the previous French course is recommended for success in this course. This course is not intended for native speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Sophomore standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FREN 3010 - French Phonetics and Pronunciation

Helps students acquire speech habits through knowledge of phonetics. Topics include the function of the speech organs, accurate production and recognition of sound, and the use of phonetic symbols. Note: Students with native or near-native level proficiency in French must consult with the French advisor before enrolling in this course. These students may, in some cases, take this course. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral interview and/or placement exam scores. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: spring term of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3020 - Conversation through Film

Conversation course focusing on the exploration of the diversity of French and Francophone cultures through film. Oral practice methodologies will include small group discussions, short oral presentations and debates. Note: Students with native or near-native-level proficiency will not be allowed to take FREN 3020. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral interview and/or placement exam scores. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: spring term of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3050 - Advanced Grammar and Composition

Rigorous review of grammar (including past and future tenses, conditional mood and nominal phrase), along with development of writing skills through analysis and discussion of selections from French writers. Through questions and written exercises, students familiarize themselves with vocabulary, spelling, syntax and grammar. Note: May be taken before or after FREN 3060. Students with native or near-native level proficiency in French must consult with the French advisor before enrolling in this course. These students may, in some cases, take this course. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral interview and/or placement exam scores. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess

equivalent proficiency. Term offered: fall term of even years. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FREN 3060 - Advanced French Language Skills

Rigorous review of grammar (including subjunctive, interrogative, verbal phrase and passive voice), along with development of writing skills through analysis and discussion of selections from French writers. Through questions and written exercises, students familiarize themselves with vocabulary, spelling, and grammar. Note: May be taken before or after FREN 3050. Students with native or near-native level proficiency in French must consult with the French advisor before enrolling in this course. These students may, in some cases, take this course. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral interview and/or placement exam scores. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: fall term of odd years. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FREN 3112 - Survey of French Literature I

Introduces survey of the major literary trends and prominent writers of French literature from 842 A.D. to the end of the 18th century. Note: May be taken before or after FREN 3122. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: fall term of odd years. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FREN 3120 - French Cultural Identities: Myths and Realities

The self-assured demeanor of the average French man or woman both attracts and confounds. In fact, a French person's behavior -- or that of the French government -- can seem impossible to decode if not understood within an authentically French context. This course examines that context and explores how the French view everyday life. Includes analysis of classic French films. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours: 3 to 3**

FREN 3122 - Survey of French Literature II

Introduces survey of the major literary trends (romanticism, realism and existentialism) and writers of the 19th and 20th centuries. Students become acquainted with prominent writers of the period such as Beauvoir, Chateaubriand, Hugo, Balzac, Flaubert, Proust, Camus and Sartre. Note: May be taken before or after FREN 3112. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or

possess equivalent proficiency. Term offered: spring term of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3130 - Current Topics of the French-Speaking World

Combines discussion and writing on political, economic, and social conditions in contemporary France and the Francophone world. Articles from current French newspapers, news magazines, television broadcasts, and the World Wide Web are analyzed for a better understanding of modern French culture. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: fall term of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3140 - Contemporary Francophone Cultures

Through the reading of short stories and cultural texts, engages students in the exploration of cultures of the Francophone world. Addresses political, economic and geographic status of each region as well as societal identity, immigration, the individual and cultural identity. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Term offered: spring term of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3200 - The Francophone World in the Post-Colonial Era

Focuses on the many Francophone regions of the world, including (but not limited to) France, North and West Africa, Southeast Asia, and the Caribbean, and surveys a wide span of subject matter as it pertains to the post-colonial situations in these regions. Taught in English. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq: Sophomore standing or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 3840 - Independent Study: FREN

Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

FREN 3939 - Internship

Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FREN 3970 - Special Topics

Varying topics in French and Francophone language, literature and culture appropriate to the 3000 level, not otherwise covered by regular courses. Note: This course assumes that students have passed FREN 2004 or 2120 or equivalent, or have taken four years of high school French, or possess equivalent proficiency. Note: May be taken more than once, provided that the topic is different each time. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FREN 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 6

FREN 4010 - Advanced Composition: Stylistics

Focuses on improvement of writing skills and development of the student's ability to compose logically and convincingly. The writing styles to be studied include: narration, description, portrait, persuasive essay and report. Note: This course assumes that students have passed FREN 3050 or 3060 or an equivalent course, plus one other 3000 level course in French. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4050 - Advanced French for Business

Concentrates on the technical language necessary to meet the economic and commercial needs of the modern world. Prepares students for the practical certificate of business and economic French of the Paris Chamber of Commerce. Note: Students with native or near-native level proficiency in French must consult with the French advisor before enrolling in this course. These students may, in some cases, take this course. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral interview and/or placement exam scores. Note: This course assumes that students have passed FREN 3050 or 3060 or an equivalent course, plus one other 3000 level course in French. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4082 - Introduction to Translation

Introduces the methodology and practice of written translation from English to French/French to English. Students will learn techniques on how to avoid word by word translation, faulty sentence structure and anglicisms by focusing on grammar, syntax and vocabulary. Note: Students must demonstrate third-year competence and advanced writing skills in English. Students with native or near-native level proficiency in French must consult with the French advisor before enrolling in this course. These students may, in some cases, take this course. The instructor of the course and/or the French advisor reserve the right to determine the level of linguistic proficiency of the student and his or her admission to the class by means of an oral

interview and/or placement exam scores. Note: This course assumes that students have passed FREN 3050 or 3060 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 5082. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4200 - French Civilization Through the Nineteenth Century

Development of French culture and civilization from a historical perspective, beginning with the origins of France and continuing through the 19th century. Includes historical background, sciences and techniques, daily life, the arts, literature and philosophy, and religion. Note: May be taken before or after FREN 4210. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed two 3000 level courses in French. Term offered: spring term of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4210 - French Civilization - Twentieth and Twenty-First Centuries

(Continuation of FREN 4200) The development of French culture and civilization in a historical perspective from the beginning of the 20th century to the present. Includes historical background, sciences and techniques, daily life, the arts, literature and philosophy, and religion. Note: May be taken before or after FREN 4200. Note: This course assumes that students have passed two 3000 level courses in French. Term offered: fall term of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4310 - Seventeenth Century Literature

An in-depth study of the century considered to be the pinnacle of French theatre. Includes plays by Racine, Moliere and Corneille, as well as poetry by Lafontaine and Boileau. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4360 - Eighteenth Century Novel, Theater and Poetry

Studies several novels and plays characteristic of the 18th century as well as some of the more famous poems. Includes Diderot, Rousseau, Voltaire, Marivaux and Laclos. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4430 - Nineteenth Century French Novel

Development of the French novel during the 19th century. Includes such writers as Stendhal, Hugo, Balzac, George Sand, Flaubert, Maupassant and Zola. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 5430. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4480 - Twentieth Century French Novel

Represents novels of the 20th century, a period of great innovation in the French novel. Authors generally treated are Camus, Giono, Ernaux and Duras. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 5480. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

FREN 4490 - Twentieth Century French Theater

Surveys the major movements in French literature of the 20th century as represented in the theater arts. Such authors as Jarry, Artaud, Apollinaire, Giraudoux, Sartre, and Beckett are discussed. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

FREN 4510 - French Women Writers

Designed to explore writings by French and Francophone women from the Middle Ages to the present. Addresses the question of what it means to be a woman and want to write. The selections include a wide variety of genres: autobiographical writings, stories, poems, manifestos, letters, political and historical documents. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 5510 and WGST 4511/5511. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4520 - Voices of Haiti and the Caribbean

This course explores the literary production of contemporary Haitian and Caribbean writers within varied cultural and gender contexts. It focuses on historical, societal and post-quake issues confronting both men and women writers of the French Caribbean. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 5520. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4600 - History of the French Language

Studies phonological, morphological, and syntactic changes in the language of Gaul from Latin to modern French. Note: This course assumes that students have passed FREN 3010 and FREN 3050 or 3060 or equivalent courses. Cross-listed with FREN 5600. Max hours: 3 Credits.

Semester Hours: 3 to 3

FREN 4690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 4690 or SPAN 4690 or FREN 4690 or GRMN 4690 or CHIN 4690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 4840 - Independent Study: FREN

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

FREN 4841 - Independent Study: FREN

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

FREN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

FREN 4970 - Special Topics

Varying topics in French and Francophone language, literature and culture appropriate to the 4000 level, not otherwise covered by regular courses. Note: This course assumes that students have passed two 3000 level courses in French. Note: May be taken more than once, provided that the topic is different each time. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

FREN 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

FREN 5200 - French Civilization Through the Nineteenth Century

Development of French culture and civilization from a historical perspective, beginning with the origins of France and continuing through the 19th century. Includes historical background, sciences and techniques, daily life, the arts, literature and philosophy, and religion. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Term offered: spring term of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5210 - French Civilization - Twentieth and Twenty-First Centuries

(Continuation of FREN 5200) The development of French culture and civilization in a historical perspective from the beginning of the 20th century to the present. Includes historical background, sciences and techniques, daily life, the arts, literature and philosophy, and religion. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Term offered: fall term of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5430 - Nineteenth Century French Novel

Development of the French novel during the 19th century. Includes such writers as Stendhal, Hugo, Balzac, George Sand, Flaubert, Maupassant and Zola. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Cross-listed with FREN 4430. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5480 - Twentieth Century French Novel

Represents novels of the 20th century, a period of great innovation in the French novel. Authors generally treated are Camus, Giono, Ernaux and Duras. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Cross-listed with FREN 4480. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5510 - French Women Writers

Designed to explore writings by French and Francophone women from the Middle Ages to the present. Addresses the question of what it means to be a woman and want to write. The selections include a wide variety of genres: autobiographical writings, stories, poems, manifestos, letters, political and historical documents. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Cross-listed with FREN 4510 and WGST 4511/5511. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5520 - Voices of Haiti and the Caribbean

This course explores the literary production of contemporary Haitian and Caribbean writers within varied cultural and gender contexts. It focuses on historical, societal and post-quake issues confronting both men and women writers of the French Caribbean. Prereq: graduate standing. Note: This course is intended for students with an undergraduate degree in French or advanced-level proficiency. Cross-listed with FREN 4520. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for those wishing to be teaching assistants in the Department of Modern Languages, and for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, GRMN 4691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 5690 or SPAN 5690 or FREN 5690 or GRMN 5690 or CHIN 5690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FREN 5840 - Independent Study: FREN

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

FREN 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

FREN 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

Geography

GEOG 1102 - World Regions Global Context

Analyzes world regions and their global interconnectedness, including the dynamic and complex relationships between people and the world they inhabit. Demographic and cultural (political, economic, and historic) issues are examined as well as interactions between human societies and natural environments. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS2. **Semester Hours:** 3 to 3

GEOG 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 1202 - Introduction to Physical Geography

The science that studies the processes, forms, and spatial or geographic structures of natural systems operating at or near the earth's surface, including weather, climate, and landform processes. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 3 to 3

GEOG 1302 - Introduction to Human Geography

Systematic introduction to basic concepts and approaches in human geographic analysis. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 1332 - Topics in Science

A series of five-week modules on various topics in physical geography. Section 001. Violent Storms. Analysis of the causes, characteristics, and regional patterns of thunderstorms, tornadoes and hurricanes, emphasizing the hazards associated with each type of storm. Section 002. Elementary Surveying. Introduces the various techniques of running a traverse, location of points by intersection and resection, determination of distance by pacing, chaining, stadia and trigonometry and carrying of elevations. Section 003. Basic Navigation. Introduces the principles of navigation using the sun as the celestial body. Emphasis is on determining latitude and longitude at solar noon. Section 004. Earthquakes. The characteristics, causes, and results of earth movements along faults. Section 005. Waves and Beaches. Analysis of wind-generated waves in the open ocean and the changes that occur as waves enter shallow water, forming surf. The tides and seismic sea waves are discussed for comparison. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 1

GEOG 1602 - Urban Studies and Planning

Surveys the process of urbanization, emphasizing the development of American cities, using Denver as an example. Topics covered include: evolution of metropolitan form/land use patterns, cultural landscape formation, city planning and architectural design, and urban social and policy issues. Note: This course is a prerequisite for GEOG 4680 Urban Sustainability: Perspectives and Practice AND GEOG 4640 Urban Geography Denver and the US. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS2. **Semester Hours:** 3 to 3

GEOG 2080 - Introduction to Mapping and Map Analysis

Studies major elements in the preparation of thematic maps, including sources of data collection and manipulation of data, and cartographic techniques for display of data. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 2202 - Hazards to Disasters: Perception and Management

Surveys those physical phenomena that often cause substantial damage when they occur in areas of human settlement. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS2. **Semester Hours:** 3 to 3

GEOG 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: sophomore standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GEOG 3100 - Geography of Colorado

An analysis of the physical environment, history of settlement, and resource base of Colorado in relation to present economic patterns of the state. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3110 - Geography of North America

Systematic study of the physical, cultural, economic, and political relationships that shape the landscape of the United States, Canada, Greenland, and the U.S.-Mexico Borderlands. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3120 - Geography of Europe

An analysis of the physical environment, resource utilization, economic development and cooperation in Europe. A cultural and political geography which focuses on continuity and change in Eastern and Western Europe. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3130 - Central America and the Caribbean

Surveys the physical environment and cultural development of Central America and the Caribbean Islands. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3140 - Geography of South America

The physical environment, cultural development, and political instability within the area are analyzed. Influence of the landscape and climate, as well as Iberian cultural and land tenure patterns on historic settlement and modern growth are discussed. Problems associated with population, economics, politics, education, and geography are emphasized. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3150 - Middle East

Physical, cultural, and economic approach to the arid lands of the Middle East, including Arab land of the Sahara. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3160 - Geography of China

Geographic survey of the physical, cultural, and economic features characterizing the geography of China. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3232 - Weather and Climate

Introduces the processes and systems that govern both day-to-day weather and longer-term climate variations. Covers instrumentation and weather forecasting techniques. Prerequisite: GEOG 1202 or ENVS 1042 or (ENVS 1044 and ENVS 1045). Cross-listed with ENVS 3232. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3240 - Colorado Climates

Provides a broad overview of the various weather and climate patterns that are found within the state of Colorado. To accomplish this, the state of Colorado will be divided into regions which (hopefully) have a large degree of homogeneity in terms of weather and climate controls.

Note: Taught in a seminar style with students giving presentations and reports on their findings about a given region. Note: this course assumes that students have completed GEOG 1202 and/or GEOG 3232. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3401 - Geography of Food and Agriculture

An overview of food systems and agriculture as they impact an increasingly urbanized planet. We will survey historical food production and preservation, food justice and insecurity, land-use and preservation, as well as local and global systems of distribution and consumption. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3412 - Globalization and Regional Development

Addresses global political-restructuring and its implications for regional development in the U.S. Both historical and contemporary processes of globalization are examined. Topics include: the environmental basis of American industrial growth, the relationship between technological change and geographical shifts, the rise and decline of Fordism, the transfer of Japanese manufacturing methods to the U.S., the role of regional and national industrial policy, and the social consequences of globalization for labor and communities. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Students will not earn credit for GEOG 3412 if they have already earned credit for GEOG 3411. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3430 - Geography of Tourism

Geographic analysis of trends in recreation, travel, and tourism, and their economic, social, and environmental impacts. Examines growth and change in resorts and tourist destination areas. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: this course assumes that students have completed GEOG 1302 or GEOG 3411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3440 - Ecotourism

The geographic study of a growing segment in contemporary tourism aimed at the provision of low impact travel to fragile, pristine and usually protected areas with the purpose of directly benefitting local communities and ecological conservation. The course surveys leading destination areas for ecotourism worldwide. GEOG 1302, GEOG 3411 or GEOG 3430 recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3450 - Cultural Heritage and Tourism

The course involves the geographic study of tourism to heritage sites and their management. It is a growing segment in domestic and international travel, and market trends for different types

of destinations in heritage tourism are examined in a local, regional and national context. The course discusses heritage planning practices and processes as well as investigates dissonant heritage and dark tourism sites. Prereq: GEOG 1302 or GEOG 3411 or GEOG 3430 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3501 - Geography of Health

Offers a critical geographic perspective to human health issues, examining disease distributions, how changing relationships between people and their environments (natural, built, and social environments) influence health, and different approaches to the study of health in geography. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3770 - Geography and Film

Geographic analysis of past and current film production and distribution systems and the complex relationships between film making and place in feature, documentary and educational film. Note: this course assumes that students have completed GEOG 1302 or GEOG 3411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 3840 - Independent Study: GEOG

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

GEOG 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GEOG 3990 - Special Topics

Investigation of current topics in geography such as analysis of issues (crime, public transportation), techniques (socioeconomic impact analysis), or areas of specialization (climatology). Note: specific necessary prior coursework varies with each topic; students are expected to have completed at least six hours in relevant social or physical science coursework. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

GEOG 4000 - Planning Methods

This course focuses on the most commonly applied quantitative and qualitative methods used in planning; data organization and management principles; and various ways to collect, analyze, and communicate data as a fundamental component of the planning process. Prereq: This

course is intended for senior level students with a minimum cumulative gpa of 3.0. Crosslisted with URPL 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4010 - Landscape Biogeochemistry

A holistic approach to studying the role chemical elements play in synthesis/decomposition cycles, and the resultant environment from interaction of the lithosphere with the hydrosphere, atmosphere, biosphere, and pedosphere during geological, and ecological timeframes, together with anthropogenic activities. Prereq: Introductory college-level physical geography or environmental science course or permission of instructor. Prereq: GEOG 1202 or GEOL 1072 or permission from instructor. Cross-listed with GEOL 4010/ENVS 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4020 - Earth Environments and Human Impacts

Basic concepts describing earth's biomes and physical environment are presented in a systems context. Global warming assessment, from both political and scientific perspectives, is then presented. Model visualization of these concepts to consider human impacts on Earth's biomes is discussed. Earth system viewpoint, having links of Earth's biomes to oceans and atmosphere, completes the course discussion. Prereq: GEOG 1202 and GEOG 3232. Cross-listed with ENVS 5020, GEOL 4020. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4060 - Remote Sensing I: Introduction to Environmental Remote Sensing

An in-depth treatment of the use of aerial photographs and other forms of imagery for the analysis of urban-industrial patterns, vegetation, agriculture, landforms, and geologic structure. Prereq: GEOG 2080 with a grade of C or better. Cross-listed with GEOG 5060. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4070 - Remote Sensing II: Advanced Remote Sensing

Focuses on digital image processing of satellite and aerial images. Students explore the nature of digital image data, gain an understanding of image analysis using PCs, and learn about the use of analysis products in the development of GIS databases. Prereq: GEOG 4060/5060 with a grade of C or better, or permission of instructor. Cross-listed with GEOG 5070. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4080 - Introduction to GIS

Introduces Geographic Information Systems (GIS), including justification, hardware/software, database design, and data conversion. GIS is a computer-based mapping system providing a graphical interface to locational and relational attribute data. Includes hands-on use of a GIS workstation. Prereq: GEOG 2080 with a grade of C or better. Cross-listed with GEOG 5080. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4081 - Cartography and Computer Mapping

Provides an introduction to the art and science of cartography (map making). Students will learn about design principles, tools and techniques of map production, culminating in the creation of a high-quality map through hands-on exercises. Prereq: GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Cross-listed with GEOG 5081. Term offered: spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4085 - GIS Applications for the Urban Environment

Takes a more detailed look at basic concepts presented in the introductory GIS course, concentrating on how GIS is used to solve real-world geographic problems. Various GIS applications within both the natural and social sciences are highlighted. The selection of specific topics is flexible, based on the interests of enrolled students. Prereq: GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better, or permission of instructor. Cross-listed with GEOG 5085. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4086 - FOSS4G Systems Integration

Focuses on the integration of different FOSS4G (Free and Open Source Software for Geospatial Applications) software and technologies to create geospatial information systems that access data from different sources, storage structures, and formats to provide information to support decision making processes. Prereq: GEOG 4091 or 5091, and GEOG 4092 or 5092. Cross-listed with GEOG 5086. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4090 - Environmental Modeling with Geographic Information Systems

Expands the basic knowledge of GIS to spatial models. Establishes a comprehensive framework that can be used to address a wide range of applications in natural and built environments. Prereq: GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better, or permission of instructor. Cross-listed with GEOG 5090. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4091 - Open Source Software for Geospatial Applications

Students will master the individual use and integration of a stack of the most powerful Free and Open Source Software for Geospatial Applications (FOSS4G) to analyze spatial problems and create Spatial Data Infrastructures in different technological, socio-economic and organizational settings. Prereq: GEOG 4080 or 5080 or CVEN 5381 with a grade of C or better, or permission of the instructor. Cross-listed with GEOG 5091. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4092 - GIS Programming and Automation

Students will learn the most commonly used programming language to automate GIS geoprocessing tasks and workflows in the latest versions of the most popular GIS systems. Cross-listed with GEOG 5092. Prereq: grade of B- or higher in GEOG 4080 or 5080 or similar course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4095 - Deploying GIS Functionality on the Web

Covers the core principles and technologies that allow the deployment of geographic information system (GIS) functionality over the World Wide Web. Hands-on exercises make use of the latest commercial software as well as open source technologies. Prereq: GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better, computer science background, or permission of instructor. Cross-listed with GEOG 5095. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4150 - Place, Landscape, and Meaning

Investigates concepts that constitute place and landscape--how they are not just simply "there." Incorporates different schools of thought to help understand why landscapes are objects inseparable from us and open to multiple interpretations and meanings. Note: this course assumes that students have completed an introductory human geography course. Cross-listed with GEOG 5150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4220 - Environmental Impact Assessment

The objective of this course is to provide the foundation for understanding the environmental impact assessment process, its legal context, and the criteria and methods for procedural and substantive compliance. Cross-listed with GEOG 5220, URPL 6549. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4230 - Hazard Mitigation and Vulnerability Assessment

Examines hazard mitigation and its planning and policy implications, emphasizing how vulnerability assessments play an integral role. Students explore how mitigation minimizes the impacts from hazards and use GIS to conduct a local study. Note: this course assumes that students have completed GEOG 2202. Cross-listed with GEOG 5230. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4235 - GIS Applications in the Health Sciences

Examines how GIS is used throughout the health care industry and public health. Covers environmental health, disease surveillance, and health services research. Students critically review current literature and gain hands-on experience with GIS software. Note: this course assumes that students have completed GEOG 4080 or GEOG 5080 and/or have a background in

public health. Cross-listed with GEOG 5235, HBSC 7235. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4240 - Applied Geomorphology

Uses hands-on tasks and field trips to investigate processes behind Earth's changing landforms in a variety of physical landscapes (aeolian, volcanic, coastal, fluvial, karst, glacial and periglacial) as related to rock decay, soils and climatic forcings. Prereq: GEOG 1202 or GEOL 1072 (required) and GEOG 3232 strongly recommended. Cross-listed with GEOL 4240, 5240 and GEOG 5240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4251 - Fluvial Geomorphology

Examines interactions between Earth's surface and flowing water across spatial and temporal scales. Considers structure and function of the major components of fluvial systems, with particular attention to the variety of fluvial systems to hydrologic, geologic and anthropogenic controls. Cross-listed with GEOG 5251, GEOL 4251 and GEOL 5251. Prereq: Students must have completed GEOG 1202 or GEOL 1072 or have graduate standing or gain instructor approval in order to register for this course. GEOG 3232 is strongly recommended, though not required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4260 - Energy and Natural Resource Planning

This course provides an overview of the issues associated with energy and natural resource planning. Topics include: energy policy; alternative energy development; water resources; extraction/mining; natural resource protection and regulation; resource management, policies, politics, and technologies. Cross-listed with URPL 6510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4265 - Sustainability in Resources Management

Sustainability and sustainable development are the dominant economic, environmental and social issues of the 21st century. Follows a multi-disciplinary approach to these concepts. Case studies demonstrate their implementation in different geographical, ecological and socio-economic conditions worldwide. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq: ENVS 1042 OR ENVS 1044 and ENVS 1045 with a C- or higher. Cross-listed with GEOG 5265. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

GEOG 4270 - Glacial Geomorphology

Provides an in-depth view of the processes and systems found in glacial environments. Topics include: evidence of past glaciation; present-day glacial extent; glacier dynamics; glacial erosional processes and landforms; glacial depositional processes and landforms. Note: this

course assumes that students have completed GEOG 1202 or GEOL 1072. Cross-listed with GEOG/GEOL 4270/5270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4280 - Environmental Hydrology

Examination of hydrologic processes in relation to climate, soils, vegetation, land-use practices, and human interactions. Natural scientific perspectives emphasized; field and laboratory included. Prereq: GEOG 1202 AND one of: 1) GEOG 3232; 2) GEOG 4240/GEOL 4240/GEOG 5240; 3) GEOG 4010/GEOL 4010/ENVS 5000. Cross-listed with GEOL 4280 and ENVS 5280. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOG 4300 - Children's Geographies

This seminar is an interdisciplinary investigation of children, childhood and environment in the context of sustainability and equity. Theoretical and methodological perspectives are applied to understand children's interactions with/in different spaces. Cross-listed with GEOG 5300, ENVS 4300 and ENVS 5300. Restriction: Restricted to students with junior standing or higher or with instructor permission. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4301 - Population, Culture, and Resources

Increasing world human populations are examined in the context of regional and global resources. Opposing viewpoints are studied, and students are required to complete a case study of a self-selected issue analyzing viewpoints associated with relevant opposing opinions. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Students may not receive credit for this course if they have already received credit for GEOG 3301. Cross-listed with GEOG 5301. Prereq: Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4305 - Water Quality and Resources

Introduces water resources aimed at students with little or no background in the field. This is a broad course covering topics ranging from the physical aspects of water to water politics and international law. While the course is largely a lecture format, discussion of current issues is a significant part of the class. Cross-listed with ENVS 5305. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4335 - Contemporary Environmental Issues

Provides an overview of environmental challenges facing society today, focusing on how humans impact and change the environment. Opposing views and environmental policy at the local, state, national, and international levels are explored. Cross-listed with GEOG 5335. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4350 - Environment and Society in the American Past

Overview of the geographical development of North American society from the late 15th century to the mid-20th century. A comparative regional approach emphasizing relationships between natural resource exploitation, cultural landscape formation and environmental change. Cross-listed with GEOG 5350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4400 - Regional Economic Systems

This course offers a comprehensive investigation into regional economic systems; metropolitan economies; regional economic development; regional market assessment; job generation; taxes/spending; and fiscal/economic policies and impacts at the metropolitan, regional, and statewide scale. Cross-listed with URPL 6605. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4420 - The Politics of Nature

Examines how economic systems, scientific discovery, institutional policies, and environmental knowledge converge to shape the environment and mediate the way societies understand, manage and respond to environmental changes in both the United States and the developing world. Cross-listed with GEOG 5420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4440 - Science, Policy and the Environment

Examines the social, economic and political forces shaping scientific discovery and the development and enforcement of environmental policy. Students will examine perspectives on issues such as risk, expertise, uncertainty and objectivity that influence the problem-defining, standard-setting and policy-making process. Cross-listed with GEOG 5440. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4450 - Urban Food and Agriculture: Perspectives and Research

Provides an overview of research & practices in urban farming. Critically reviews emergent models of local food production/distribution. Compares new practices to traditional agribusiness. Assesses the prospects for solving sustainability problems within the modern agro-food system. Cross-list ENVS 5450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4460 - Sustainable Urban Agriculture Field Study I

Provides a field-based overview of urban farm planning & management. Topics: range/land conservation, native/invasive species, water distribution, animal husbandry, government interaction, local markets, community relations, conservation easements and issues pertaining to urban farming. Note: this course assumes that students have completed GEOG 4450. Cross-list ENVS 5460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4470 - Sustainable Urban Agriculture Field Study II

Provides a field-based overview of current practices in local agricultural production. Emphasis will be placed on sustainable practices and their most efficient situation, Special consideration will be given to plausible solutions for food insecure communities both local and global. Note: this course assumes that students have completed GEOG 4450 and 4460. Cross-list ENVS 5470. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4480 - Urban Vegetable CSA: Planning, Production&Distribution

This course outlines the planning, production, and distribution in an active urban vegetable CSA (community supported agriculture) model. It is offered as a part of the GES Sustainable Urban Agriculture Certificate. Cross-listed with ENVS 5480. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4625 - Urban America: Colonial Times to the Present

Rise of the American city from colonial times to present. Major emphasis on the process of urbanization since 1840: town promotion, the industrial city, immigration, boss politics and reform, urban technology, transportation systems, minorities, city planning, and the future of urban America. Cross-listed with HIST 4225, HIST 5225, WGST 4225, WGST 5225, GEOG 4625. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4630 - Transportation, Land Use, and the Environment

Students will learn how transportation shapes regions, how people decide where to live and how to travel, and how these dynamics are central to sustainable development. Topics include smart growth, climate change mitigation, livability, air quality, travel behavior, active transportation, and transit-oriented development. Cross-listed with URPL 6555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4640 - Urban Geography: Denver and the U.S.

Uses a combined lecture/seminar format to explore research themes in urban geography. Topics covered include both historical and contemporary processes of urban development and transformation. Particular emphasis is placed on the U.S. and Colorado's Front Range. Cross-listed with GEOG 5640. Prereq: GEOG 1602 with a grade of C- or higher or permission from instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4670 - Transportation Planning and Policy

This course examines policy issues in urban transportation planning: how transportation system design and political/institutional contexts shape transportation decision-making; major modes of urban transportation; and the social, environmental, economic, energy, and health impacts

of transportation systems. Cross-listed with URPL 6550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4680 - Urban Sustainability: Perspectives and Practice

Examines various perspectives on sustainability, including ambiguities and opportunities of sustainability as a conceptual framework. Class also examines what sustainability looks like in practice, using numerous topics such as poverty and urban farming to water and climate change. Cross-listed with GEOG 5680. Prereq: ENVS 1342 or GEOG 1602 with a grade of C- or higher or permission from instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4700 - Synthesis for Interdisciplinary Science

Synthesis is an approach in interdisciplinary research and education that links ideas, data and methods. This course develops synthesis skills through the lens of systems theory. It includes exercises for synthetic thinking, examination of integrative tools, and a service-learning project. Cross-listed with ENVS 5700. Breadth and depth training in environmental sciences. Interest in interdisciplinary collaboration. Prereq: Senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4710 - Disasters, Climate Change, and Health

Provides a review of the impacts of disasters and climate change on human health, using a broad framework of preparedness, mitigation, response, recovery, and adaptation. Note: this course assumes that students have completed GEOG 2202 or GEOG 3501. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4720 - Climate Change: Causes, Impacts and Solutions

Examines science behind past, present & future climate change & environmental, social & political implications & solutions. Explores recent scientific research, syntheses & mainstream literature advancing knowledge about causes & consequences of natural & anthropogenic climate change. Prereq: GEOG 3232. Cross-listed with GEOG 5720/ ENVS 4720/ ENVS 5720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4731 - Mountain Biogeography

This course utilizes the close proximity of the Rocky Mountains to examine altitudinal influences on species distributions. Topics include species patterns and distributions, disturbance, climate impacts, forest management and sustainability. Note: A three-day field trip within Colorado will occur the first weekend of the Fall semester, and is highly encouraged. Prereq: GEOG 1202 or ENVS 1042 or graduate standing or permission from the instructor is required in order to register for this course. Cross-listed with ENVS 5731. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOG 4740 - Soil Science and Geography

Reviews chemical and physical properties of soils, soil development, and geographic distributions of soil types in the context of the role that soils play in natural and human-altered ecosystems. Cross-listed with GEOG 5740, ENVS 4740, ENVS 5740. Max hours: 3 Credits.

Semester Hours: 3 to 3

GEOG 4770 - Applied Statistics for the Natural Sciences

Surveys statistical techniques including: quick review of basic statistics, tests for normality and outliers, display of data; simple and multiple regression; ANOVA and its relation to regression. Emphasis on computer or stat-pak analysis and interpretation of statistical results. Prereq: College algebra and GEOG 2080, or consent of instructor. Cross-listed with ENVS 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4840 - Independent Study: GEOG

Independent research primarily for undergraduate majors. Prereq: Permission of department. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

GEOG 4850 - Understanding And Communicating Field Methods

Interdisciplinary course that presents a balanced overview of common field methods and how to communicate them effectively to a general audience. Includes hands-on experience with various field methods (e.g., transects, survey design, historical assessment, GIS, etc.) and communication strategies. Note: this course assumes that students have completed an introductory geography or environmental science course. Prereq: Junior standing or higher. Cross-listed with GEOG 5850 and ENVS 4850/5850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

GEOG 4900 - Colloquium

Engages students and faculty in discussion of current and pertinent world topics, including specific readings, (guest) presentations, and creation of working research papers, among other items. Students and faculty may work in research groups to accomplish specific goals. Prereq: Junior standing or higher. Cross-listed with ENVS 4900, ENVS 5900, GEOG 5900. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

GEOG 4940 - Senior Seminar

Introduces students to the professional literature in the field. Various professionals and faculty lecture about geography/planning research and careers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4950 - Honors Thesis

A capstone course designed to promote critical thinking, research methodology, and writing/oral presentation skills. Students design and develop a research project under the supervision of a faculty advisor. Each student gives an oral presentation or defense of his or her thesis at the end of the semester in which they enroll. Note: this course assumes that students have completed GEOG 4940. Prereq: Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 4990 - Special Topics

Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 6

GEOG 4992 - Advanced Regional Field Study

Directed, hands-on study of concepts involved in understanding geographic regions. Utilizes field observations, field techniques/methods, & data observation, collection, analysis, & interpretation related to the specific region being studied. May include physical as well as cultural phenomena. Note: Instructor permission required. Cross-listed with GEOG 5992, ENVS 4992, ENVS 5992. Repeatable. Max Hours:12 Credits. **Semester Hours:** 1 to 6

GEOG 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with ENVS 4995, ENVS 5995, and GEOG 5995. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 9

GEOG 5050 - Applied Spatial Statistics

Practice and application of spatial analytical and statistical methods using modern GIS and spatial statistical software. Topics include spatial data handling, interpolation, pattern analysis, cluster detection, visualization, and modeling. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Note: an introductory course in statistics is strongly recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5060 - Remote Sensing I: Introduction to Environmental Remote Sensing

An in-depth treatment of the use of aerial photographs and other forms of imagery for the analysis of urban-industrial patterns, vegetation, agriculture, landforms, and geologic structure. Cross-listed with GEOG 4060. Completion of GEOG 2080 with a C or better is recommended for optimal student success. Prereq: Graduate standing. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5070 - Remote Sensing II: Advanced Remote Sensing

Focuses on digital image processing of satellite and aerial images. Students explore the nature of digital image data, gain an understanding of image analysis using PCs, and learn about the use of analysis products in the development of GIS databases. Prereq: Graduate standing and GEOG 4060/5060 or permission of instructor. Cross-listed with GEOG 4070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5080 - Introduction to GIS

Introduces Geographic Information Systems (GIS), including justification, hardware/software, database design, and data conversion. GIS is a computer-based mapping system providing a graphical interface to locational and relational attribute data. Includes hands-on use of a GIS workstation. Cross-listed with GEOG 4080. Prereq: Graduate standing. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5081 - Cartography and Computer Mapping

Provides an introduction to the art and science of cartography (map making). Students will learn about design principles, tools and techniques of map production, culminating in the creation of a high-quality map through hands-on exercises. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Note: Completion of GEOG 2080 with a C or better is recommended for optimal student success. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5085 - GIS Applications for the Urban Environment

Takes a more detailed look at basic concepts presented in the introductory GIS course, concentrating on how GIS is used to solve real-world geographic problems. Various GIS applications within both the natural and social sciences are highlighted. The selection of specific topics is flexible, based on the interests of enrolled students. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Cross-listed with GEOG 4085. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5086 - FOSS4G Systems Integration

Focuses on the integration of different FOSS4G (Free and Open Source Software for Geospatial Applications) software and technologies to create geospatial information systems that access

data from different sources, storage structures, and formats to provide information to support decision making processes. Prereq: GEOG 4091 or 5091, and GEOG 4092 or 5092. Cross-listed with GEOG 4086. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5090 - Environmental Modeling with Geographic Information Systems

Expands the basic knowledge of GIS to spatial models. Establishes a comprehensive framework that can be used to address a wide range of applications in natural and built environments. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Cross-listed with GEOG 4090. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5091 - Open Source Software for Geospatial Applications

Students will master the individual use and integration of a stack of the most powerful Free and Open Source Software for Geospatial Applications (FOSS4G) to analyze spatial problems and create Spatial Data Infrastructures in different technological, socio-economic and organizational settings. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Cross-listed with GEOG 4091. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5092 - GIS Programming and Automation

Students will learn the most commonly used programming language to automate GIS geoprocessing tasks and workflows in the latest versions of the most popular GIS systems. Cross-listed with GEOG 4092. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5095 - Deploying GIS Functionality on the Web

Covers the core principles and technologies that allow the deployment of geographic information system (GIS) functionality over the World Wide Web. Hands-on exercises make use of the latest commercial software as well as open source technologies. Prereq: Graduate standing and GEOG 4080 or GEOG 5080 or CVEN 5381 with a grade of C or better. Cross-listed with GEOG 4095. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5150 - Place, Landscape, and Meaning

Investigates concepts that constitute place and landscape--how they are not just simply "there". Incorporates different schools of thought to help understand why landscapes are objects inseparable from us and open to multiple interpretations and meanings. Note: this course assumes that students have completed an introductory human geography course. Prereq: Graduate standing. Cross-listed with GEOG 4150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5220 - Environmental Impact Assessment

The objective of this course is to provide the foundation for understanding the environmental impact assessment process, its legal context, and the criteria and methods for procedural and substantive compliance. Cross-listed with GEOG 4220, URPL 6549. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5230 - Hazard Mitigation and Vulnerability Assessment

Examines hazard mitigation and its planning and policy implications, emphasizing how vulnerability assessments play an integral role. Students explore how mitigation minimizes the impacts from hazards and use GIS to conduct a local study. Note: this course assumes that students have completed GEOG 2202 or equivalent. Prereq: Graduate standing. Cross-listed with GEOG 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5235 - GIS Applications in the Health Sciences

Examines how GIS is used throughout the health care industry and public health. Covers environmental health, disease surveillance, and health services research. Students critically review current literature and gain hands-on experience with GIS software. Note: this course assumes that students have completed GEOG 4080 or GEOG 5080 and/or have a background in public health. Cross-listed with GEOG 4235, HBSC 7235. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5240 - Applied Geomorphology

Uses hands-on tasks and field trips to investigate processes behind Earth's changing landforms in a variety of physical landscapes (aeolian, volcanic, coastal, fluvial, karst, glacial and periglacial) as related to rock decay, soils and climatic forcings. Note: this course assumes that students have completed GEOG 1202 or GEOL 1072 and GEOG 3232. Prereq: Graduate standing. Cross-listed with GEOL 4240, 5240 and GEOG 4240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5251 - Fluvial Geomorphology

Examines interactions between Earth's surface and flowing water across spatial and temporal scales. Considers structure and function of the major components of fluvial systems, with particular attention to the variety of fluvial systems to hydrologic, geologic and anthropogenic controls. Cross-listed with GEOG 4251, GEOL 4251 and GEOL 5251. Restricted to Graduate and Graduate Non-Degree students. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5265 - Sustainability in Resources Management

Sustainability and sustainable development are the dominant economic, environmental and social issues of the 21st century. Follows a multi-disciplinary approach to these concepts. Case studies demonstrate their implementation in different geographical, ecological and socio-economic conditions worldwide. Note: this course assumes that students have completed ENVS

1042 or equivalent. Prereq: Graduate standing. Cross-listed with GEOG 4265. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

GEOG 5270 - Glacial Geomorphology

Provides an in-depth view of the processes and systems found in glacial environments. Topics include: evidence of past glaciation; present-day glacial extent; glacier dynamics; glacial erosional processes and landforms; glacial depositional processes and landforms. Note: this course assumes that students have completed GEOG 1202 or GEOL 1072 or equivalent. Prereq: Graduate standing. Cross-listed with GEOG/GEOL 4270/5270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5300 - Children's Geographies

This seminar is an interdisciplinary investigation of children, childhood and environment in the context of sustainability and equity. Theoretical and methodological perspectives are applied to understand children's interactions with/in different spaces. Cross-listed with GEOG 4300, ENVS 4300 and ENVS 5300. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5301 - Population, Culture, and Resources

Increasing world human populations are examined in the context of regional and global resources. Opposing viewpoints are studied, and students are required to complete a case study of a self-selected issue analyzing viewpoints associated with relevant opposing opinions. Note: Students may not receive credit for this course if they have already received credit for GEOG 3301. Cross-listed with GEOG 4301. Restriction: Restricted to graduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5335 - Contemporary Environmental Issues

Provides an overview of environmental challenges facing society today, focusing on how humans impact and change the environment. Opposing views and environmental policy at the local, state, national, and international levels are explored. Cross-listed with GEOG 4335. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5350 - Environment and Society in the American Past

Overview of the geographical development of North American society from the late 15th century to the mid-20th century. A comparative regional approach emphasizing relationships between natural resource exploitation, cultural landscape formation and environmental change. Cross-listed with GEOG 4350. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5420 - The Politics of Nature

"Examines how economic systems, scientific discovery, institutional policies, and environmental knowledge converge to shape the environment and mediate the way societies understand, manage and respond to environmental changes in both the United States and the developing world. Cross-listed with GEOG 4420. Prereq: Graduate standing. Max hours: 3 Credits."

Semester Hours: 3 to 3

GEOG 5440 - Science, Policy and the Environment

Examines the social, economic and political forces shaping scientific discovery and the development and enforcement of environmental policy. Students will examine perspectives on issues such as risk, expertise, uncertainty and objectivity that influence the problem-defining, standard-setting and policy-making process. Cross-listed with GEOG 4440. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5640 - Urban Geography: Denver and the U.S.

Uses a combined lecture/seminar format to explore research themes in urban geography. Topics covered include both historical and contemporary processes of urban development and transformation. Particular emphasis is placed on the U.S. and Colorado's Front Range. Cross-listed with GEOG 4640. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5680 - Urban Sustainability: Perspectives and Practice

Examines various perspectives on sustainability, including ambiguities and opportunities of sustainability as a conceptual framework. Class also examines what sustainability looks like in practice, using numerous topics such as poverty and urban farming to water and climate change. Cross-listed with GEOG 4680. Prereq: Graduate standing. Max hours: 3 Credits.

Semester Hours: 3 to 3

GEOG 5710 - Disasters, Climate Change, and Health

Provides a review of the impacts of disasters and climate change on human health, using a broad framework of preparedness, mitigation, response, recovery, and adaptation. Note: this course assumes that students have completed GEOG 2202 or GEOG 3501. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5720 - Climate Change: Causes, Impacts and Solutions

Examines science behind past, present & future climate change & environmental, social & political implications & solutions. Explores recent scientific research, syntheses & mainstream literature advancing knowledge about causes & consequences of natural & anthropogenic

climate change. Cross-listed with GEOG 4720/ ENVS 4720/ ENVS 5720. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5740 - Soil Science and Geography

Reviews chemical and physical properties of soils, soil development, and geographic distributions of soil types in the context of the role that soils play in natural and human-altered ecosystems. Prereq: graduate standing or permission of instructor. Cross-listed with GEOG 4740, ENVS 4740, ENVS 5740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5840 - Independent Study

Section 1, economic; 2, physical; 3, urban; 4, social; 5, quantitative; 6, transportation. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

GEOG 5850 - Understanding And Communicating Field Methods

Interdisciplinary course that presents a balanced overview of common field methods and how to communicate them effectively to a general audience. Includes hands-on experience with various field methods (e.g., transects, survey design, historical assessment, GIS, etc.) and communication strategies. Note: this course assumes that students have completed an introductory geography or environmental science course. Prereq: Graduate standing. Cross-listed with GEOG 4850 and ENVS 4850/5850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

GEOG 5900 - Colloquium

Engages students and faculty in discussion of current and pertinent world topics, including specific readings, (guest) presentations, and creation of working research papers, among other items. Students and faculty may work in research groups to accomplish specific goals. Prereq: Graduate standing. Cross-listed with ENVS 4900, ENVS 5900, GEOG 4900. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

GEOG 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

GEOG 5990 - Special Topics In Geography

Course content varies from semester to semester, depending on faculty member teaching the course. Prereq: Graduate standing. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

GEOG 5992 - Advanced Regional Field Study

Directed, hands-on study of concepts involved in understanding geographic regions. Utilizes field observations, field techniques/methods, & data observation, collection, analysis, & interpretation related to the specific region being studied. May include physical as well as cultural phenomena. Note: Instructor permission required. Cross-listed with GEOG 4992, ENVS 4992, ENVS 5992. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

GEOG 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ENVS 4995, ENVS 5995, and GEOG 4995. Max hours: 12 Credits. **Semester Hours:** 3 to 9

GEOG 6300 - Foundations Seminar in Human-Environmental Interaction

This seminar allows students to gain a deeper appreciation for historical and contemporary geographical approaches to understanding the relationship between society and the environment through a survey review of seminal concepts, theories and debates that have shaped the discipline. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 6700 - Integrated Methods

Geographers employ a variety of quantitative and qualitative methods in their research. The course presents these methods as a continuum, rather than separate typologies, and reviews the difference between integrated and mixed methods. Students will evaluate how and when to apply various methods to most appropriately elicit data. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 6750 - Research Design

Reviews research framework common to all geographers. Reviews the key steps in designing and executing high-caliber independent research, including topic selection, literature review and data collection analysis. Students will develop competence in applying relevant theories from the natural and social sciences through projects. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 6800 - Community-Based Research Practicum

For students to apply the concepts and skills presented throughout the masters program in a community setting. Students will participate in a real-world, studio-based project that meets the needs of a government, non-governmental, or private sector organization and will produce a scoped product. Prerequisite: GEOG 6300 with a C or higher. Cross-list ENVS 6800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOG 6840 - Independent Study: GEOG

Independent research for graduate major students. Prereq: Permission of department. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GEOG 6950 - Master's Thesis

Prereq: Graduate standing. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

GEOG 8990 - Doctor's Thesis

Prereq: Graduate standing. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

Geology

GEOL 1022 - History of Life

Non-technical study of fossils through time and their relationships to environments through earth history. Includes discussion of evolution and extinction events and current controversies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 1073 - Physical Geology: Surface Processes

This survey course develops a basic understanding of surface processes and landforms in geology. It includes one all-day field trip. Students must also take the accompanying laboratory GEOL 1074. No co-credit with GEOL 1072. Prereq or Co-req: GEOL 1074. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 1074 - Physical Geology: Surface Processes Laboratory

Introduces the basic scientific approach through investigations, observations, and experiments in surface processes and landforms in geology. Students must also take the accompanying lecture GEOL 1073. Prereq or Co-req: GEOL 1073. Max hours: 1 Credit. **Semester Hours:** 1 to 1

GEOL 1083 - Physical Geology: Internal Processes

This survey course develops a basic understanding of physical geology emphasizing the earth's interior, covering internal processes and properties, with plate tectonics as the underlying theme, Includes one all-day field trip. Students must also take the accompanying laboratory GEOL 1084. No co-credit with GEOL 1082. Prereq or co-req: GEOL 1084. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 1084 - Physical Geology: Internal Processes Laboratory

Introduces the basic scientific approach through investigations, observations, and experiments in internal geologic processes and properties of the earth's interior with plate tectonics as the underlying theme. Prereq or co-req: GEOL 1083. Max hours: 1 Credit. **Semester Hours:** 1 to 1

GEOL 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GEOL 1115 - Earth Sciences Content

Covers content areas of undergraduate earth sciences. Topics include physical geology; historical geology; oceanography; meteorology; and astronomy. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GEOL 1202 - Introduction to Oceanography

Surveys modern scientific knowledge of the world's oceans. Intended for non-science students, the course offers a non-quantitative introduction to the major facts and principles of physical, chemical, biological, and geological oceanography. The impact of natural and anthropic events on the marine environment are included. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 1400 - Geology of the National Parks

Combines lecture and laboratory exercises to help students interpret Earth history using the national parks as examples. Students learn to identify the common rocks and minerals, and how to interpret topographic and geologic maps. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 1840 - Independent Study: GEOL

Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GEOL 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center

advising to complete a course contract and gain approval. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GEOL 3011 - Mineralogy

Principles of mineralogy, including crystallography, crystal chemistry, and a systematic study of the more important nonsilicate and silicate minerals. Origins and occurrences of minerals. Note: this course assumes that students have taken physical geology and college-level chemistry. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOL 3032 - Geology of Colorado

Introductory course focused on the geology of Colorado. The course is divided into two parts: the first half covers general principles of geology, and the second is devoted to the observation of rock types, structures, and geologic relationships in the field. Discussion of plate tectonics, rock formation, construction and interpretation of geologic maps, the geologic time scale, geologic provinces of Colorado, evolution of major landforms, formation and development of mineral resources of Colorado, and current topics in environmental geology. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 3102 - Dinosaurs Past and Present

A broad-based, non-technical new look at the world's most popular prehistoric animals. Stresses the rapid and perennial growth of knowledge about dinosaurs and the relevance of such knowledge in the 20th century. Prereq: Introductory geology and/or biology are recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 3411 - Introductory Paleontology

Studies invertebrate fossils, including a survey of the organic world and its history in the geological past. Includes an introduction to evolution and paleoecology, and discussion of the uses of fossils in geologic correlations. Note: this course assumes that students have taken introductory geology-surface processes or an introductory biology course. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOL 3421 - Sedimentation and Stratigraphy

Introduces the principles of sedimentology and stratigraphy. Emphasis is on dynamic processes within sedimentary environments and the resulting stratigraphic record. Prereq: GEOL 1082. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOL 3840 - Independent Study: GEOL

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

GEOL 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GEOL 4010 - Landscape Biogeochemistry

A holistic approach to studying the role chemical elements play in synthesis/decomposition cycles, and the resultant environment from interaction of the lithosphere with the hydrosphere, atmosphere, biosphere, and pedosphere during geological, and ecological timeframes, together with anthropogenic activities. Prereq: GEOG 1202 or GEOL 1072 or permission of instructor. Cross-listed with GEOG 4010/ENVS 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4020 - Earth Environments and Human Impacts

Basic concepts describing earth's biomes and physical environment are presented in a systems context. Global warming assessment, from both political and scientific perspectives, is then presented. Model visualization of these concepts to consider human impacts on Earth's biomes is discussed. Earth system viewpoint, having links of Earth's biomes to oceans and atmosphere, completes the course discussion. Cross-listed with ENVS 5020, GEOG 4020. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4030 - Environmental Geology

Applies geological information to interactions between people and the physical environment. Increasing awareness of its importance in our society means that this is an expanding field as companies are required to address the environmental consequences of their actions. Prereq: Senior standing. Cross-listed with ENVS 5030 and GEOL 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4111 - Field Methods In Geology

Introduction to the basic methods of geologic mapping (metamorphic, sedimentary, and igneous rocks), including use of the Brunton compass and Jacob Staff, as well as preparation of measured stratigraphic sections, geologic maps, and geologic cross-sections. Note: GEOL 1072 or GEOG 1202 required, GEOL 3421 strongly recommended. Prereq: GEOG 1202 or GEOL 1072. Cross-listed with GEOL 5111. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4240 - Applied Geomorphology

Uses hands-on tasks and field trips to investigate processes behind Earth's changing landforms in a variety of physical landscapes (aeolian, volcanic, coastal, fluvial, karst, glacial and periglacial) as related to rock decay, soils and climatic forcings. Prereq: GEOG 1202 or GEOL 1072 (required) and GEOG 3232 strongly recommended. Cross-listed with GEOG 4240, 5240 and GEOL 5240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4251 - Fluvial Geomorphology

Examines interactions between Earth's surface and flowing water across spatial and temporal scales. Considers structure and function of the major components of fluvial systems, with particular attention to the variety of fluvial systems to hydrologic, geologic and anthropogenic controls. Cross-listed with GEOG 4251, GEOG 5251 and GEOL 5251. Prereq: Students must have completed GEOG 1202 or GEOL 1072 or have graduate standing or gain instructor approval in order to register for this course. GEOG 3232 is strongly recommended, though not required. Max hours: 3 Credits. **Semester Hours:** 4 to 4

GEOL 4270 - Glacial Geomorphology

Provides an in-depth view of the processes and systems found in glacial environments. Topics include: evidence of past glaciation; present-day glacial extent; glacier dynamics; glacial erosional processes and landforms; glacial depositional processes and landforms. Prereq: GEOG 1202 or GEOL 1072. Cross-listed with GEOG/GEOL 4270/5270. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEOL 4780 - Engineering Geology

Studies geology as utilized in engineering and environmental practice. Emphasizes a conceptual integration of geologic materials, processes, and rates of change as a basis for successful application of geologic knowledge to environmental planning and engineering design projects. Prereq: MATH 2411 and CVEN 2121. Cross-listed with GEOL 5780 and CVEN 4780. Max hours: 4 Credits. **Semester Hours:** 4 to 4

GEOL 4840 - Independent Study: GEOL

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

GEOL 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

GEOL 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Prereq: GEOL 1072 and GEOL 1082. Cross-listed with GEOL 5995. Repeatable. Max hours: 12 Credits. **Semester Hours:** 3 to 9

German

GRMN 1000 - Germany and the Germans

Introduces the ways in which the various aspects of German culture help define German life and national identity. By examining art, music and media, primarily of the 20th century, students explore what it means to be German. Note: Taught in English. Term offered: spring, fall. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1. **Semester Hours:** 3 to 3

GRMN 1010 - Beginning German I

Introduces basic grammar, sentence structure and speech patterns. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Term offered: fall. Max hours: 5 Credits. **Semester Hours:** 5 to 5

GRMN 1020 - Beginning German II

(Continuation of GRMN 1010.) Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed GRMN 1010 or equivalent, or have taken one year of high school German, or possess equivalent proficiency. A grade of C- or higher in GRMN 1010 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

GRMN 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GRMN 1995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

GRMN 2110 - Intermediate German I

(Continuation of German 1020.) Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed GRMN 1020 or equivalent, or have taken two years of high school German, or possess equivalent proficiency. A grade of C- or higher in GRMN 1020 is recommended for success in this course. This course is not intended for native speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 2130 - Intermediate German II

A fourth-semester course designed for those majoring or minoring in International Affairs. Along with grammar review, the course deals with contemporary topics in cultural, political, economic and social affairs. Note: Open to all those wanting to satisfy a fourth semester language requirement to qualify for upper division German courses. Satisfies the language requirement for the minor in International Affairs, may be applied to the major and minor in German, and will satisfy the fourth-semester foreign requirement at most graduate schools. Note: This course assumes that students have passed GRMN 2110 or equivalent, or have taken three years of high school German, or possess equivalent proficiency. A grade of C- or higher in GRMN 2110 is recommended for success in this course. This course is not intended for native speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 2150 - Intermediate German II: Grammar Review and Oral Practice

Prepares students for upper division. German language skills courses. Students practice abilities gained in previous semesters of language instruction, improve conversational abilities, develop skills using reference works, learn tactics for reading and discussing newspaper style German and develop written composition abilities. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Taught in German. Note: This course assumes that students have passed GRMN 2110 or equivalent, or have taken three years of high school German, or possess equivalent proficiency. A grade of C- or higher in GRMN 2110 is recommended for success in this course. This course is not intended for native speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 2210 - Readings and Translation

Stresses reading and translation skills rather than speaking. Students work with short German texts in a variety of areas: natural and social sciences, history and literature. Note: Taught in English. Prereq: GRMN 1020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 2240 - Intermediate Composition and Vocabulary Building

A fourth-semester composition and vocabulary building course. Note: Taught in English. Note: This course assumes that students have passed GRMN 2110 or 2210 or equivalent, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 2840 - Independent Study: GRMN

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

GRMN 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Sophomore standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GRMN 2995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

GRMN 3030 - Advanced Conversation: Idioms and Vocabulary Building

An advanced conversation course, using small-group discussion, skits, and short oral presentations to improve fluency in spoken German and to build vocabulary. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3050 - Phonetics and Pronunciation of German

Students acquire skills for articulating German with a high degree of accuracy, and systematically develop a more native-like pronunciation of German. Students learn basic linguistic principles for the purpose of gaining insight into the mechanics of spoken German. Note: Taught in German. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3060 - Advanced German Language Skills I

An advanced course in German language skills with equal emphasis devoted to speaking, listening, reading and writing. Students improve their cultural awareness, pronunciation, and vocabulary as well. Specific grammar topics include: subjunctive I and II, participles I and II, extended adjectives, verb tenses, gender of nouns, and reflexive. Note: Primary language of instruction for this course is German. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3070 - Advanced German Language Skills II

An advanced course in German language skills with equal emphasis devoted to speaking, listening, reading and writing. Students improve their cultural awareness, pronunciation and vocabulary. Specific grammar topics include: semantic categories, functions of nouns, determiners, adjectives, relative clauses, pronouns. Note: Primary language of instruction for this course is German. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3080 - Advanced German Language Skills III

An advanced course in German language skills with equal emphasis devoted to speaking, listening, reading and writing. Students improve their cultural awareness, pronunciation, and vocabulary as well. Specific grammar topics include: prepositions and idioms, "da" compounds, German syntax, clause typology numerals, and time expressions. Note: Primary language of instruction for this course is German. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3090 - Advanced German Language Skills IV

An advanced course in German language skills with equal emphasis devoted to speaking, listening, reading, and writing. Students improve their cultural awareness, pronunciation and vocabulary. Specific grammar topics include: modal verbs, complex clause and sentence structure, "werden," passive voice, double infinitives, perfect infinitives, and dependent infinitives. Note: Primary language of instruction for this course is German. Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3110 - Introduction to German Literature I

Selected readings from German short stories, drama, and poetry, primarily from the modern period. Emphasis on techniques of reading. Note: Primary language of instruction for this course is German. Note: This course assumes that students have passed GRMN 2110 or equivalent, or have taken three years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3130 - Current Topics of the German-Speaking World

Combines discussion and writing on political, economic, and social conditions in contemporary Germany, Austria and Switzerland. Articles from current German newspapers, magazines, television broadcasts, and the World Wide Web are analyzed for a better understanding of how citizens of these countries see themselves and the world. Note: This course assumes that students have passed a third-year German course, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3200 - Current German Society and Culture

Provides students with a detailed overview of the systems in modern, united Germany such as social, educational, and political. Examines how Germany sees itself as a vital member of the EU. Exposes students to rudimentary use of the German language. Prereq: Sophomore standing. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3230 - German Civilization I: From Medieval Through Age of Idealism

Selected highlights of major cultural aspects of the Middle Ages, the Reformation, the Enlightenment, and the Age of Idealism. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3240 - German Civilization II: The Modern Age

Selected highlights of major cultural aspects of the later 19th century, the Wilhelminian period, the Weimar Republic, the Third Reich, and the period since 1945. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3310 - Techniques of Translation

Trains students in strategic translation skills that aid in rapid comprehension of short German texts and the ability to render them into well written contemporary English. Students choose content areas of individual interest (e.g. history, literature, chemistry). Note: This course assumes that students have passed GRMN 2130 or equivalent, or have taken four years of high school German, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3512 - Faust in Literature and Music

Surveys the Faust legend in literature and music. Includes works by Marlowe, Goethe, Berlioz, Schumann, Gounod, Boito and others. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3540 - German Cinema and Society

Studies several key German films from 1918 to the present that illuminate the political/cultural discourses of their times. Readings from historical and film-critical texts aid in contextualizing the films. Note: Taught in English. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 3840 - Independent Study: GRMN

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

GRMN 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

GRMN 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: spring, summer, fall. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

GRMN 4050 - Advanced German Phonetics and Language History

Students develop advanced phonetic skills for analyzing the sounds and orthography of German. They apply these skills by examining the diachronic (historic) developments in the grammatical and phonological structures of German over the last two millennia. Note: Taught in German. Note: This course assumes that students have passed GRMN 3050 or equivalent, or possess equivalent proficiency. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 4690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 4691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 4690 or SPAN 4690 or FREN 4690 or GRMN 4690 or CHIN 4690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 4840 - Independent Study: GRMN

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

GRMN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

GRMN 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

GRMN 5690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for those wishing to be teaching assistants in the Department of Modern Languages, and for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GRMN 5691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, CHIN 4691, CHIN 5691. Prereq: MLNG 5690 or SPAN 5690 or FREN 5690 or GRMN 5690 or CHIN 5690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Global Energy Management

GEMM 6000 - 21st Century Global Energy Issues and Realities

Introduction to the global energy industry's past, present and future. Current and historical issues in regions such as: Atlantic Basin, former Soviet Union, east of Suez, North and South America will be covered. World production centers and markets are discussed to include relevant energy security, scenario planning, risk management and regulation, deregulation, and environmental concerns. Note: Students will learn the geographic distribution of energy resources worldwide including governmental systems. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

GEMM 6100 - Global Energy Economics

Course includes energy geo-economics with an introduction to managerial tools of the trade. Topics will include world energy markets-demand and supply; refining and marketing, energy forecasts, oil and gas transportation, and National Oil Companies vs. International Oil Companies. An introduction to environmental economics will also help students connect the energy industry to sustainable work practices. In addition students will learn the geographic distribution of energy resources worldwide along with the political and government systems associated with those resources. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6200 - Environmental, Regulatory, Legal & Political Environment in the Energy Industry

Exploration of current political situations regarding the energy industry, its environmental impact in the short and long term. Topics include climate change, pollution, solid wastes and conversions to natural resources. Students will become familiar with national and international energy laws and regulations, financial arrangements, confidentiality, and bidding agreements. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6210 - Energy and the Law: Property and Contracts

The elective will focus on the process of managing the use and development of land resources in a sustainable way. Topics such as; public controls, powers used for land regulation, and an intro to real estate will be covered to enhance students understanding of land management and its application to the energy industry. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6220 - Interacting With Foreign Governments And State Enterprises

Globalization of many energy companies, dwindling U.S. energy sources, and growing overseas energy demand have increased the need for energy professionals to gain expertise in doing business with foreign governments and state enterprises, which play a much greater role in the ownership and operation of energy extraction and energy delivery in virtually all countries

beyond the United States and Canada. This course reviews negotiation strategies in the context of uncertain contract enforcement, volatility and uncertainty of prices and restrictions, and highly contentious political contexts. It also reviews the approaches for interacting effectively with state enterprises that are often undercapitalized and inefficient, and examines how valuation of energy assets can take into account political risk, and requirements to provide infrastructure and social services. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6230 - Political Risk Management for Global Energy Environmen

The course examines public influence on energy business activities. Students will explore the economics of political action and methods for evaluating how stakeholder groups interact to influence political outcomes. They will use these tools to develop strategies for stakeholder engagement and to manage business risks. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6300 - Technical Aspects of Energy Science

This course will familiarize students with the newest renewable and alternative energy sources. The course does not focus on hydrocarbon sources but examines challenges and opportunities that exist for the establishment of the new energy sources to become viable in the industry. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6400 - Leadership and Decision Making in the Global Energy Environment

Students will examine leadership from an energy executive perspective. Topics include: how execs lead, change, innovation, interacting with top management teams, the board, leadership issues involved with governance of the firm, strategies for enhancing executive influence and ethics and responsibilities associated with exec. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6410 - People Management in the Global Energy Environment

Explains that people are energy's most important asset. Students will learn the latest research in human resource theories, study models, and learn how to develop organizational effectiveness from the firm's human capital. Concepts on: effective teamwork, attracting and retaining talent and using HR processes such as performance management and development to drive engagement will be discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6430 - Organizational Behavior in the Energy Industry

Students will learn how to lead and manage human assets inside energy industries. Students will be exposed to fundamental principles of human behavior and increase their competence of working in diverse settings. Proper management can lead to a sustainable competitive advantage, because of management of employees and developing them into enthusiasts of your firm. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6450 - Strategic Management of the Energy Industry

The course focuses on how to improve an organization's competitiveness in a changing global environment. Emphasis on sustainable strategies, students develop skills to formulate, implement and evaluate organizational strategies in the rapidly changing environment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6460 - Integrated Information Management for Energy Firms

This course covers issues associated with developing an integrated information managing strategy to identify major information categories used with an energy firm. It covers relationships to business processes to guide applications development and facilitate the integration and sharing of data. Using case studies from energy firms operational, administrative and strategic systems will be discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6470 - Energy Marketing and Communications

This course covers the challenges faced by energy industries in developing branding, and developing new markets. Marketing both products and the company to its stakeholders, in the face of competitive pressures, students learn practical marketing tools and how they can be used to effect corporate strategy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6500 - Energy Accounting in the Global Markets

The course builds a basic understanding of how to convey to decision makers, in and out of the firm, information about its resources. Emphasis on; analysis of income statements, balance sheet, statement and cash flows (historical financial accounting information) with specific coverage of cost-volume-profit, variance, forecasting, joint interest accounting and measurement of divisional performance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6600 - Introduction To Financial Management In The Energy Industry

Introduction to fundamental principal of asset valuation and financing in competitive global markets. Providing the tools necessary to analyze day-to-day financial issues in the energy industry (time value of money, valuation of income streams, risk weighted investment returns.) Topics such as: risk management, arbitrage, hedging and foreign exchange will be covered. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

GEMM 6610 - Advanced Financial Management in the Energy Industry

This course is focused on understanding the costs and benefits of various forms of capital. By examining internal and external managers, students will be able to assess alternative capital

sources to achieve their strategic objectives. The course will introduce effective investor communication techniques. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6620 - Energy Asset & Production Management for the Energy Industry

The course covers management of an organization's energy resources and facilities as well as broader coverage of project management. Portfolio strategy, planning, scope, time, cost, quality and organizational effectiveness will be addressed. Also when budget, material, vendor relations or other factors disrupt a project, students will be prepared on how to react. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

GEMM 6630 - Commercialization Management of Renewable Energies

This course will focus on the business aspects running a renewable energy entity either as a separate company or sector within an established company. Students taking this course have completed a previous course on the basic science of renewable energy. This course is intended to focus on leadership issues and decision making regarding renewable energy. As a significant part of the course, students will learn how to review information and data supplied to them by engineers, accountants, finance, marketing, scientists, and other stakeholders within and outside their company including federal, state, and local governments and regulatory agencies to make sound business decisions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GEMM 6690 - Special Topics

This elective course is intended to be a variable-credit course specially designed to provide national and international learning opportunities. The course will offer concentrated problem-solving experiences within the energy industry through travel to industry-significant cities and regions, while meeting and visiting with people working and dealing with issues in the industry. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

GEMM 6840 - Independent Study

Allow students to gain additional experience in a particular realm of energy business that interest them and suit their ultimate career goals. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

Greek

GREK 1010 - Greek I: Biblical

Intended for students of languages, religious studies, and philosophy. Introduces the forms and syntax of Greek so that in the 13th week students will be able to read about 85% of the New Testament in the original language. Cross-listed with RLST 1010. Max hours: 5 Credits. **Semester Hours:** 5 to 5

GREK 1020 - Greek II: Biblical

A continuation of 1st-semester Biblical and Classical Greek. Covers the remaining forms and syntax of the textbook, with an emphasis on sight-reading passages from the New Testament. At the end of the course we will read, translate and study short fragments and lines written by some Pre-Socratic philosophers such as Thales, Anaxagoras, Anaximander, Heraclitus, and Parmenides. Prereq: GREK 1010. Max hours: 5 Credits. **Semester Hours:** 5 to 5

GREK 2110 - Greek III: Classical

Introduction to classical Greek, followed by reading of Plato's "Apology" with selections from "Pre-Socratic philosophers" (e.g. Xenophanes of Colophon, Zeno of Elea, Pythagoras) and Aristotle. Prereq: GREK 1020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

GREK 2840 - Independent Study - GREK

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Max hours: 3 Credits. **Semester Hours:** 1 to 3

GREK 4840 - Independent Study - GREK

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 3

Health Administration

HLTH 5939 - Internship

Semester Hours: 1 to 3

HLTH 6010 - Health Care Systems

Introduces the structure and function of the medical care delivery system. Includes basic concepts and measures of health, disease, quality, values, needs and utilization; issues in health care manpower, institutions and system organization; general issues in policy, reimbursement and regulation; broad community, and organizational considerations in medical care organizations. The student is introduced to the principles of epidemiology and environmental health and demonstrates the application of epidemiology concepts to planning for the healthcare service needs of a population. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6070 - International Health Policy and Management

A framework for understanding national health reform policy and management issues in the U.S. and other nations, including industrialized, developing, and transforming nations. This course combines classroom and on-line teaching. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6071 - Introduction To Health Information Technology

Examines what needs transforming in healthcare to improve value, safety, and appropriateness of care, and what the role of IT is in that transformation. IT also examines the challenges of cultural change and IT strategy in succeeding with clinical information projects. Differences between installation, implementation, transition and actual transformation are suggested, and methods for managing subcultures in healthcare (IT, clinical, administrative) are reviewed. Cross-listed with ISMG 6071. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6072 - Management of Healthcare Information Technology

Provides an introduction to the management of information technology in healthcare. A description of information processing, the origin, content, evolution of healthcare information systems, and the methodologies deployed to acquire and manage information requirements are discussed. Cross-listed with ISMG 6072. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6075 - International Health Travel Study

Experiential course, which is designed to open students up to innovative health delivery practices in an international location. Students learn how health issues such as reproductive health, infectious diseases, mental health, health and economy, and chronic diseases are handled in community and public health settings. Class trips are usually 14-18 days to an Asian country during the month of January. Prereq: HLTH 6010 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6730 - Healthcare Operations Management

Students in this course will obtain a comprehensive and practical examination of operations management with an emphasis on application to health care organizations. Students will use mathematical and basic spreadsheet skills to critically assess patient flows, volume projection, and supply chain management to improve the efficiency of service delivery in health care organizations. Detailed content on reducing cycle times (e.g., patient wait times), measuring productivity, streamlining process flows, tracking outcomes, staffing, and performance metrics will be presented in the course. Prereq/Coreq: BUSN 6630; Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Instructor's approval may be obtained if the Prereq or Co-Reg has not been met. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6740 - Profiles in Health Care

This colloquium provides a rare opportunity for students to interact with top CEOs from health care organizations around the country. Students learn about HMOs, hospitals, medical group practices, consulting, managing careers, how to get jobs, and how to be successful in a job. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6770 - Healthcare Quality and Outcomes

Studies the identification, measurement and improvement of healthcare quality. Covers, historic and contemporary views of quality, improvement theories and methods, organizational quality systems, leadership, patient safety, cost and quality, quality measurement and reporting, clinical outcomes, care redesign and medical terminology. Restriction: Restricted to HLAD and MBAH majors within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6800 - Special Topics

Offered irregularly. Current interests in the health management field. Topics recently offered include: international health, ethics, general systems theory, and key issues for health systems. Consult the current 'Schedule Planner' for semester offerings. Prerequisites vary according to topics and instructor requirements. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HLTH 6840 - Independent Study: HLTH

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

HLTH 6911 - Health Field Studies

The objective of this course is to expose students to health care organizations with which they are not familiar. Each student is assigned to a health care organization and given a specific problem or project to complete. Prereq: HLTH 6010 or permission of instructor. After registration, please contact Errol.Biggs@ucdenver.edu for further instructions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Health & Behavioral Sciences

HBSC 6500 - Women and War

Appraise women's experiences and selected issues related to war-time service, including women's roles during war, gender-specific policies, military sexual trauma, reintegration, and effects of deployment on mental and physical health. Restriction: Restricted to Graduate and

Graduate Non-Degree major. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 6840 - Independent Study: HBSC

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HBSC 7001 - Colloquium Series in the Health and Behavioral Sciences

Features presentations by core, affiliated and adjunct faculty; alumni; distinguished guest speakers; and students nearing completion of the dissertation. The goal is to expose students to cutting-edge applications of health-related social and biological science research and to introduce students to the research interests of core and affiliated HBS faculty, advanced students, and alumni who they might otherwise not have the opportunity to meet. Note: Required for ALL first and second year students but open to all graduate students and faculty. May be taken up to three times for credit. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

HBSC 7011 - Theoretical Perspectives

Covers the following subject areas: philosophy and epistemology of the social and behavioral sciences as they are applied in public health and health care contexts; historical perspectives of Western biomedicine and public health; crosscultural perspectives on health systems; class, ethnic, and gender correlates of health and sickness; critical perspectives on Western health and health care models; and the structure and organization of health care systems. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7021 - Theory in Health and Behavioral Sciences

Covers theories utilized in development and assessment of public health programs with goals to improve health. Students acquire skills in theory building and testing and how to best utilize theory to address pressing health concerns. Prereq: HBSC 7011. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7031 - Human Ecology and Environmental Adaptation

Focuses on the interplay of biology, environment, culture, and behavior in the causes and exacerbation of disease. The course includes the following topics: health in environmental and evolutionary contexts; models of causation in biomedicine and other medical systems;

individual, community, and population manifestations of health and disease; and biocultural interaction in disease process. Specific case studies drawn from contemporary health problems are used to illustrate in detail the nature of these processes. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7041 - Research Design and Methods in the Health and Behavioral Sciences I

This course has four principal aims: (1) to provide students a working knowledge of research methodology as applied to field research efforts; (2) to enable students to apply research methodologies to areas of particular interest in the health and behavioral sciences; (3) to expose students to data manipulation techniques common to social science quantitative research; and (4) to teach basic research proposal development techniques. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7051 - Qualitative Research Design and Methods

Much of the data collected in the social sciences is interview- and text-based. This course explores methods for collecting and analyzing these data and theoretical paradigms that underlie these methods. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7061 - Quantitative Methods in the Health and Behavioral Sciences

This course introduces students to multivariate regression methods - a set of statistical models that relate an outcome variable to a set of predictor variables. The course emphasizes understanding and applying regression models to address social science research questions. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7071 - Social and Behavioral Determinants of Health and Disease

Surveys the distribution, determinants, and psychological and behavioral aspects of health and disease. Social, economic, environmental, and cultural variations in and determinants of health, disease, and quality of life, as well as barriers to access and utilization, geopolitical influences, environmental and social injustice, historical trends, and future directions are addressed. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7111 - Applications of the Health and Behavioral Sciences

The purpose of this course is to help students select and refine a dissertation research topic. Each student, through presentations and discussions of their work, will receive feedback from fellow students and the instructor, and will have an opportunity to improve written and oral presentation skills. Prereq: Admission to the Health and Behavioral Sciences program and HBSC 7041 with a B- or higher or permission of the instructor. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7121 - Dissertation Proposal and Research

Restriction: Restricted to Graduate Level Students admitted into the Health and Behavioral Sciences program. Repeatable. Max hours: 8 Credits. **Semester Hours:** 6 to 8

HBSC 7161 - Quantitative Methods in Health&Behavioral Sciences II

This course introduces students to advanced multivariate regression methods (e.g., generalized linear models, survival models, hierarchical models). This course emphasizes the application of advanced regression methods to test social and behavioral science theories related to health. Prereq: Admission to the Health and Behavioral Sciences program or permission of the instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7210 - Human Health and Environmental Pollution

Examines the roles of technology and society in the etiology and control/prevention of adverse health outcomes associated with releases of toxic substances. Examples come from experience and the literature on occupational cancer and reproductive hazards, occupational and environmental regulation of hazardous wastes, air, and water pollution. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ENVS 6210. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7310 - Environmental Epidemiology

Provides a basic understanding of the methods used to study the effects on human health of exposures to physical, chemical, or biological factors in the external environment. The course explains the use of epidemiologic methods through a problem solving approach to investigating environmental health case studies. Restriction: Restricted to Graduate and Graduate Non-Degree majors. A basic statistics class is strongly recommended for optimal success. Cross-listed with ENVS 6230. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7340 - Risk Assessment

The process of determining the likelihood and extent of harm that may result from an activity or event. Topics covered are: hazard identification, dose-response evaluation, exposure assessment, and risk characterization. The subjects of risk management, risk perception, and risk communication are also discussed. Restriction: Restricted to Graduate and Graduate Non-

Degree majors. Cross-listed with CVEN 5494, ENVS 6200. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HBSC 7400 - Topics in the Health and Behavioral Sciences

A flexible seminar format for dealing with topics of special interest in the health and behavioral sciences. Topics to be considered vary from semester to semester. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

HBSC 8990 - Doctoral Dissertation

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Admission to the Health and Behavioral Sciences program. Term offered: fall, spring, summer. Repeatable. Max hours: 30 Credits. **Semester Hours:** 1 to 10

Health Humanities

HEHM 3100 - Introduction to Health Humanities

This course introduces students to the rich field of medical humanities. It examines how various disciplines analyze relationships among culture, society and medicine, and what humanistic approaches can teach us about biomedical theory and health care training and practice. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HEHM 3570 - Death & Dying: Social & Medical Perspectives

Focusing on death, dying and bereavement using medical and social perspectives, this course explores how illness, prolonged dying and sudden death impact care providers, families and communities. Discussion, film, readings and music address the connection of social and medical issues. Cross-listed with SOCY 3570. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HEHM 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: Permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

HEHM 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Historic Preservation

HIPR 6010 - Preservation Theory and Practice

The practice of historic preservation has evolved in a specific policy context. This introductory course introduces basic American institutions and laws associated with preservation as well as standards, definitions, and practices associated with these. Cross-listed with URPL 6499. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6090 - Special Topics in Historic Preservation

Various topics in historic preservation, according to current faculty and student interests. Prereq: HIPR 6010 or permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

HIPR 6110 - Regionalisms & the Vernacular

This class explores the history of the built environment from the perspective of evolutionary change; peoples attempting to meet utilitarian needs, respond to environmental forces, societal expectations, and aesthetic aspirations through design. The course looks closely at vernacular structures in a global context. Prereq: HIPR 6010 or permission of instructor. Cross-listed with ARCH 6350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6170 - Preservation Design Studio

Preservation Design Studio provides a project-based learning experience for Historic Preservation students; who are typically integrated into a pre-approved studio of one of the College of Architecture & Planning's departments. Topics vary according to faculty interests. Cross-listed: Varies by semester. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 6 to 6

HIPR 6210 - Historic Buildings in Context

This course covers the concept of "historic significance" and develops skills in understanding and professionally utilizing this concept. Procedures and skills are introduced. Prereq: HIPR 6010 or permission of instructor. Cross-listed with ARCH 6233. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6220 - Adaptive Reuse: Business and Practice

Existing buildings and infrastructure afford challenges and opportunities for reuse. This course explores the business, and financial aspects of adapting the built environment for contemporary uses. The course is suitable for designers, planners, historians and social scientists. Restriction: Restricted to majors within the College of Architecture and Planning. Cross-listed with ARCH 6356. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6310 - Documentation, Analysis, Representation

This methods course focuses on skills development in in-situ documentation of the historic environment. The course includes modules on: a) historic records, b) archaeological evidence, c) building and site measurement, d) photographic & photometric methods, e) geo-spatial data, f) graphic representation, and g) reporting formats. Prereq: HIPR 6010 or permission of instructor. Cross-listed with ARCH 6352. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6410 - Urban Conservation: Context for Reuse

This course begins with the premise that human habitats, and especially cities, are dynamic and ever changing; and that the preservationist cannot (and should not try) to freeze cities in a static representation of the past. The course deals with both the philosophical and political contexts, but emphasizes the role of strategic design intervention in the shaping of evolving cities. This includes traditional preservation activities, but also recognizes the importance of progressive change. Readings are diverse, but at least two case study cities are used to ground the concepts. Class activities include: a) research, b) field study, c) design, and d) presentation. Prereq: HIPR 6010 is recommended. Cross-listed with ARCH 6355. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6510 - Building Conservation

This course emphasizes the relationship between knowledge acquisition, professional judgement, and design modification. Topics include: 1) Historic Building Types & Methods, 2) Field and Lab Methods of Building Assessment, and 3) Management of Building Rehabilitation. The course takes an integrative approach to the scientific, aesthetic, managerial and legal dimensions of preservation. Prereq: HIPR 6010 or permission of instructor. Cross-listed with ARCH 6351. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6610 - Reading the City

Design and planning professionals, including preservationists, must learn to work in environments with which they have had little previous knowledge. This course emphasizes gaining understanding of a novel environment and translating that knowledge into a well researched and media savvy professional presentation. Students prepare a research plan, then conduct research on a relatively unfamiliar urban environment, such as Chicago (or other major

city), returning to prepare, present, and critically reflect upon their applied research through a media-savvy final project. Prereq: HIPR 6410 is recommended. Cross-listed with ARCH 6232. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6840 - Independent Study

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to historic preservation. Prereq: Permission of instructor. Max hours: 3 Credits. **Semester Hours:** 1 to 3

HIPR 6851 - Professional Project

The Professional Project is one of two options for completing the Capstone Requirement. There are multiple ways of satisfying this requirement, but the agreed upon Project must show critically reviewed evidence of professional competence in the field of historic preservation. Prereq: Permission of instructor. Max hours: 3 Credits. **Semester Hours:** 1 to 3

HIPR 6930 - Internship

Designed to provide professional practice experience. The internship is composed of eight to twelve hours per week working in a professional preservation setting during the regular semester. Prereq: Permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIPR 6951 - Thesis

Thesis is one of two options for completing the Capstone Requirement. Students may choose to develop a specialized thesis in some topic related to historic preservation. Prereq: LDAR 6949. Max hours: 6 Credits. **Semester Hours:** 6 to 6

History

HIST 1016 - World History to 1500

Surveys the rise of civilizations and their interactions from prehistoric to modern times. The emphasis is on the understanding of the various styles or characteristics of civilizations within a global context. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 1026 - World History Since 1500

Surveys the interactions of the world's civilizations in modern times. The emphasis is on understanding the concept of modernization within a global context. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max hours: 3 Credits.

Semester Hours: 1 to 3

HIST 1211 - Western Civilization I

Introduces ancient Mediterranean civilization and the birth of Europe. Covers topics on economics and society, political organization, intellectual history, and art from 3000 B.C. to A.D. 1500. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 1212 - Western Civilization II

Introduces modern European civilization and its spread over the world. Covers topics on economics and society, political organization, intellectual history, and art from A.D. 1500 to the 20th century. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 1361 - U.S. History to 1876

Provides an introduction to the major forces, events and individuals that shaped the historical development of American society, beginning with the European settlement of America and concluding with the Civil War, reconstruction and the early growth of an industrial order. Term offered: fall, spring. Max Hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-HI1. **Semester Hours:** 3 to 3

HIST 1362 - U.S. History Since 1876

Provides an introduction to the major forces, events, and individuals that shaped the historical development of American society from the Civil War to the present. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-HI1. **Semester Hours:** 3 to 3

HIST 1381 - Backstories: Hidden Origins

Examines several topics of profound interest to historians world wide: nature and technology, secular and religious faiths, and concepts of political union. The experience of the U.S. as it relates to the experiences of other periods and cultures. Term offered: fall, spring. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-HI1. **Semester Hours:** 3 to 3

HIST 1400 - Controversies in History

Examines a variety of cases where historians have significant disagreement or diverse interpretations regarding "what happened" and "why," to come to an understanding of what historians do and how they do it. Term offered: fall, spring, summer. Max hours: 3 Credits.

Semester Hours: 3 to 3

HIST 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have completed 15 hours of HIST courses with a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Term offered: spring, summer, fall. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HIST 3031 - Theory and Practice of History: An Introduction to the Major

Introduces history majors to the discipline at the outset of their course work. Covers historiographical trends and methodologies, and familiarizes students with the various types of research and writing they are likely to encounter in their classes. Note: This course should be taken as early as possible, and must be taken before HIST 4839. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3070 - Film History

Studies the history of cinema from a variety of perspectives: the evolution of technology, the development of film as business, artistic film movements, the growth of genres, and the work of major filmmakers in both the US and abroad. Topics vary. Cross-listed with ENGL 3070. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3121 - The World at War, 1914-1945

Examines World Wars I and II as episodes in a protracted conflict among the nations of the capitalist West, the emerging states of Asia and the colonial world, and the USSR. Studies the causes and consequences of the wars. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3230 - The American Presidency

Explores the presidency in U.S. History. Topics include: ideological and constitutional foundations; expansion of presidential power in domestic politics and international relations; evolution of presidential campaigns; and dimensions of presidential leadership in politics, society and culture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3231 - Famous U.S. Trials

This introduction to the history of the U.S. trial court system will contextualize significant trials in historic and cultural moments. The course will explore the roles of legal communication and mass communication in contemporary and subsequent representations of the trial. Cross-list COMM 3231. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3232 - The American Colonies to 1750

The maturation of the American colonies within the British Empire, the development of commercial and intellectual centers, the creation of uniquely American politics, and the unfolding of critical differences between North and South. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3235 - U.S. Labor History, 1800 to the Present

Explores the experiences, contributions, and struggles of working-class Americans from the Civil War to the present. Areas of focus include pre-industrial and post-industrial labor, slavery, agricultural labor, gender and working class culture outside of the work place. Particular attention is paid to immigration, ethnicity, race and gender, as they relate to the history of America's laboring class. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3260 - Digital Studies and Strategies

This interdisciplinary course emphasizes developing media production, web, and GIS skills to design individual and group media projects based on students' research. Critiques and readings examine the successful confluence of media and historical content along with digital dissemination strategies. Cross-listed with HIST 5260. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3297 - Social History of Asian Americans

This introductory-level course surveys the social history of Asian American groups from the mid-19th century to the present. We will examine immigration patterns, the development of communities, social and economic problems, and anti-Asian movements and activities. Cross-listed with SOCY 3297 and ETST 3297. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3343 - Women & Gender in US History

This course will explore women and gender as drivers of US history. From politics to popular culture, jobs to sexual empowerment, civil rights to economic restructuring, we will use gender as a lens to re-envision familiar stories about American history. Cross-listed with WGST 3343, WGST 5343, and HIST 5343. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3345 - Immigration and Ethnicity in American History

Explores the personal and collective experience of immigrants to America. Discusses problems of assimilation, urban and rural experiences, and implications for politics, the economy and social attitudes. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3347 - African-American History, 1619-Present

Explores the African-American experience, including definitions of citizenship, strategies for protest and resistance, models of leadership, religious life and cultural expression, divisions of class, color and gender. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3348 - The African-American Protest Tradition, 1865 - Present

Examines a series of influential African-American activists and considers such themes as intra-racial divisions, Pan-Africanism, black nationalism, the use of the courts and legal efforts, and black conservatism. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3349 - Social Movements in 20th Century America

By surveying the major American social movements of the twentieth century, this course will explore how Americans have created categories of race, ethnicity, culture, and sexuality and how elite and marginalized citizens have deployed these categories in politics. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3350 - Colonial Latin America

Surveys the creation of colonial empires by Spain and Portugal, 1492-1808. Topics include Native American responses to European incursions, women in colonial society, and slavery in Latin America. Cross-listed with ETST 3350. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3360 - Denver History

Introduces the social, political, economic, and cultural life of this mile high metropolis. Founded in the 1858 gold rush, Denver has grown into a five-county metropolis of over two million. Explore this boom and bust history in lectures, slide shows and walking tours. This course offers students a chance to do their own primary source research project, as well as exams and book reports. Note: Open to all students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3364 - Native Americans and Spaniards in North America

Examines the interactions between Native Americans and Spanish invaders beginning in the 16th century. The course explores the impact of colonialism in what is today the American Southwest. Focuses on Native American adaptation and resistance to the European presence. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3365 - Aztlan in the United States: Chicano History from 1821

Explores the impact of U.S. rule on the Southwest, paying particular attention to legal, economic, and social changes that created new political and cultural identities in the Southwest. Cross-listed with ETST 3365. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3366 - Nature and Power in American History

This course explores the relationships between human societies and environmental change in the history of North America. Cross-listed with HIST 5366. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3396 - History of the American Indian

Indigenous nations in North America comprise hundreds of diverse cultures. This course examines U.S. Indian policy and how indigenous nations responded; how they creatively adapted, and resisted cultural change; and how they continue to persist culturally, socially, and politically. Cross-listed with ETST 3396. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3451 - Introduction to African History

By looking at specific examples of the cultural, political, and economic experience of African society, this course attempts to introduce and make comprehensive the diverse history of the people of Africa. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3460 - Modern Latin American History

Surveys the historical development of the modern Latin American countries, beginning with the independence movements of the early 19th century. Emphasizes the 20th century issues and problems that have characterized these countries and affected their relations with the United States. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3469 - Intro to East Asia: To 1800

This course introduces the history of China, Japan and Korea to 1800 focusing on political, economic and social changes. It is designed for lower division undergraduates with no background in Asian history. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3470 - Intro to East Asia: Since 1800

This course introduces the history of China, Japan and Korea from 1800 to the present, focusing on political, economic and social changes. It is designed for lower division undergraduates with no background in Asian history. Note: This course may count for the International Studies major

or minor. See your INTS advisor for more information. Term offered: fall. Max Hours: 3 Credits.
Semester Hours: 3 to 3

HIST 3480 - Introduction to European History

This course examines the major events and influences that have shaped modern Europe, including monarchies, the Enlightenment, the Industrial Revolution, the rise of political ideologies, the French and Russian Revolutions, capitalism, imperialism, and two World Wars in the twentieth century. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: spring, summer, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3481 - Ancient Greece

A history of the Greek-speaking world, from the Bronze Age depicted in Homer's epics to Alexander the Great and the Hellenistic Kingdoms. The course addresses the political, intellectual, socioeconomic, and military history of the eastern Mediterranean, with an emphasis on Greece. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3482 - Rome: City and Empire

Pagan Rome from its earliest beginnings to the rise of Christianity. Emphasis is on the military, socio-economic, and political history of Rome, its empire in Italy, and its domination of the Mediterranean World (ca. 800 B.C. to A.D. 300). Term offered: spring. Max Hours: 3 Credits.
Semester Hours: 3 to 3

HIST 3484 - British Isles to 1714

A sampler of the rich, diverse, and dramatic history of the peoples of the British Isles. State formation, economic and social change and cultural values are several of the themes threaded through this survey course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3485 - British Isles Since 1714

This course examines the dramatic rise of the British industrial, commercial, and political empire during the 18th and 19th centuries and its equally dramatic decline in the 20th century. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3486 - Renaissance and Reformation

Explores the late 13th through middle 17th centuries when European art and culture changed dramatically, and when Europe was torn by explosive ideological conflicts and religious upheaval. Cross-listed with RLST 3486. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3487 - Medieval Europe

Surveys the general history of Europe from the fall of Rome to the opening of modern Europe. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3488 - Tudor-Stuart England

England's rise from obscurity in 1487 to the dawn of her age of European and world dominance in the early 18th century. Family life and popular culture as well as Henry VIII, Queen Elizabeth, Parliament, and Cromwell. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3500 - African History in Novels and Films

Introduces modern Africa through the eyes of creative artists. Various topics, such as childhood, religion, and colonialism, are presented from various points of view--African and non-African. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3601 - Colorado History

Presents the story of the people, society, and culture of Colorado from the earliest Native Americans, through the Spanish influx, the fur traders and mountain men, the gold rush, railroad builders, the cattlemen and farmers, the silver boom, the tourists, and the modern twentieth-century state. Term offered: spring, fall, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3606 - Science, Technology, and Society in the Modern World

Examines the relationships among science, technology, and society from the early 19th century to the present. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3616 - Global History of Energy

Explores the history of human energy use on local, national, and international scales, examining its social, political, and economic effects, and its implications for the environment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3706 - Age of Revolution

Examines revolutions in selected societies around the world during the period from 1750 to 1950. The specific revolutions chosen may vary, but representative upheavals in both the Western and non-Western worlds are examined. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 3810 - Topics

Topics in history with varying subtitles reflecting course content. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

HIST 3840 - Independent Study: History

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

HIST 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have 15 hours of HIST courses completed with 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: spring, summer, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HIST 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

HIST 4027 - Enlightenment and Revolution

In this course students explore the relationship of ideas and events in Europe during the 17th and 18th centuries. Modernizing trends in the European economy, religion, science, states and international affairs leading up to the French Revolution. Cross-listed with HIST 5027. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4028 - Nations and Classes: 19th Century Europe

Focuses on material and ideological changes in 19th century Europe, exploring social, cultural, political, economic, and intellectual developments. Cross-listed with HIST 5028. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4029 - Age of Anxiety in Europe

Looks at Europe at the end of the nineteenth century in an effort to determine if there is any relation between the peculiarities in culture at the time and the horrors in politics that followed. Cross-listed with HIST 5029. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4030 - Europe During the World Wars

Covers the history of the two world wars and their origins, political and social upheaval during the interwar economic crisis, the rise of communism, Italian fascism and Nazism, with an emphasis on cultural production and intellectual life. Cross-listed with HIST 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4031 - Contemporary Europe

History of Europe since 1945. Students study the economic, social, and political history of Europe since World War II, with a special emphasis on the Cold War and intellectual currents. Cross-listed with HIST 5031. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4032 - Globalization in World History Since 1945

An interdisciplinary course on contemporary world history and globalization. While the course is historically structured, economic, political, and sociological matters are explored. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with HIST 5032. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4034 - Core Themes in European History

Core themes in modern Europe, 1750 to the present. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4035 - Crisis and Transformation: Europe's 20th Century

This course examines 20th century European history focusing on themes of crisis and transformation. We will explore how devastating wars, economic depression, stark ideological divisions, and revolutionary social, political and cultural movements dramatically changed Europe over the course of the century. Cross-listed with HIST 5035. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4046 - Victorians and Victorianism

Taking an interdisciplinary perspective, this course examines English people and English life during the reign of Queen Victoria, 1837-1901. What were the defining features of the Victorian age? What did it mean to be "Victorian?" When and why did the Victorian paradigm break down? Cross-listed with HIST 5046. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4051 - Britain and The Empire

Examines 19th and 20th century British history, addressing social, cultural, and political themes. Explores industrialization, state growth, and imperialism; relationships between race, gender, and class; and the ways in which colonizers and the colonized experienced empire. Cross-listed with HIST 5051. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4055 - The Atlantic Slave Trade: Africa, Caribbean and U.S.

Presents a broad overview of the slave trade in the Atlantic World, including discussion of the slave plantation, the creation of Caribbean societies and the consequences of independence from Britain. Cross-listed with HIST 5055. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4062 - Modern France, 1789 to the Present

Considers the shaping of modern France from the 18th century Bourbon Monarchy and aristocratic society to today's liberal democracy, in which multiculturalism, globalization and supranational institutions call into question the very nature of French identity. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with HIST 5062. Max hours: 3 Credits.. **Semester Hours:** 3 to 3

HIST 4071 - Modern Germany

Surveys the major political, institutional, social, economic, and cultural developments that have occurred in Germany since the late 18th century. Cross-listed with HIST 5071. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4074 - Post-War Germany

Historical survey of Germany since the second world war, with an emphasis on culture and society. Cross-listed with HIST 5074. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4075 - Travel Stories and Origins of Cultural Anthropology

Examines the early history of cultural anthropology by means of classic travel literature. Cross-listed with HIST 5075. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4076 - History of Modern Science

Surveys the history of science from the 18th century to the present. Treats all disciplines, from physics to physiology, in an attempt to understand how the natural world came to dominate our sense of ourselves. Cross-listed with HIST 5076. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4083 - Russia Since 1917

Studies the development of the Soviet Union from its formation in the October Revolution, through the Civil War, the new economic policy, industrialization, collectivism, the Stalinist purges, up to the present. Cross-listed with HIST 5083. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4086 - Eastern Europe

Studies the countries of Eastern Europe from their origins in the Middle Ages to the present. Cross-listed with HIST 5086. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4133 - Management of Material Culture and Museum Collections

This course provides in-depth knowledge of the rudiments of material culture documentation, preservation and management. While we have designed this class for those interested in working in history museums, this is also appropriate for those students who want to learn the place of artifacts in studying history. Cross-listed with HIST 5133. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4201 - Core Themes in U.S. History

This course surveys major themes in U.S. history. Cross-listed with HIST 5201. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4209 - Race, Religion, and Belonging

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Cross-listed with ETST 4030, ETST 5030, RLST 4030, RLST 5030 and HIST 5209. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4210 - The American Revolution

The crisis of the British Empire in North America from the end of the French and Indian War to the ratification of the American Constitution. Topics include the emerging economy, constitutional arguments against Britain, the conduct of the war, and the definition of a republic. Cross-listed with HIST 5210. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4212 - Civil War and Reconstruction

Begins with the causes and outbreak of the American Civil War, describes the military conflict and the social aspects of the war, examines the federal efforts to reconstruct the southern states, and protect the rights of Black citizens after 1865. Cross-listed with HIST 5212. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4213 - The Gilded Age and Early 20th Century Challenges: U.S. History, 1865-1932

Topical study of major events in America, including Reconstruction; the rise of industry and the workers' response; westward expansion and the plight of Native Americans; urbanization and immigration; agrarian upheaval; Progressivism; World War I; the challenges of the 1920s and the onset of the Great Depression. Cross-listed with HIST 5213. Max hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4216 - History of American Popular Culture

Explores American popular culture from the early 1800s to the present. By tracing the development of various entertainment media, including theater, music, movies, and television sitcoms, this course probes how popular culture both reflected and shaped American values and behavior. Cross-listed with HIST 5216. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4217 - Consumer Culture

This interdisciplinary course examines the dynamics of the consumer culture in the context of social, economic, and technological history. The analysis begins with 17th century European origins, and continues through recent world developments, emphasizing the U.S. since 1800.

Note: Open to all students. Cross-listed with HIST 5217. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4219 - Depression, Affluence and Anxiety: U.S. History, 1929 to the Present

Examines major developments, focusing on the causes of the Depression and efforts to combat it; World War II and postwar readjustments; the Cold War and challenges of world leadership; unparalleled prosperity; Civil Rights movement; the Vietnam War; and economic uncertainties amidst general prosperity. Cross-listed with HIST 5219. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4220 - U.S. Foreign Policy Since 1912

The main thrust is the emergence of the U.S. from isolation toward full-scale participation in the affairs of Europe and other areas. Special attention is given to U.S. intervention in two

world wars, the Cold War, and the over extension of U.S. commitments since 1960. Cross-listed with HIST 5220. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4222 - U.S. Society and Thought to 1860

Major topics include the evolution of Protestantism from Puritans to Transcendentalists; humanitarian reforms such as abolition, temperance, and women's rights; European influences on American thought; the effect of industrialization on the development of class society; and American nostalgia for agrarian life. Cross-listed with HIST 5222. Max hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4223 - U.S. Society and Thought Since 1860

Topical survey of the main currents of American thought and their impact upon society. Topics include American philosophy, literature (extensively), art, music, immigration and urbanization, technology, extremism of both left and right, and education. Cross-listed with HIST 5223. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4225 - Urban America: Colonial Times to the Present

Rise of the American city from colonial times to present. Major emphasis on the process of urbanization since 1840: town promotion, the industrial city, immigration, boss politics and reform, urban technology, transportation systems, minorities, city planning, and the future of urban America. Cross-listed with HIST 5225, WGST 4225, WGST 5225, GEOG 4625. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4226 - Capitalism in America

Explores the social, cultural, and political history of American capitalism from colonial times. Topics include entrepreneurship, labor, territorial and trading expansion, industrialization, the rise of corporations, economic cycles, technological developments, and the role of the state, all within global contexts. Cross-listed with HIST 5226. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4227 - American West

Introduces the diverse peoples, places, and approaches to the development of the trans-Missouri West from prehistoric times to the present. Cross-listed with HIST 5227. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4228 - Western Art and Architecture

Introduces art and architecture of the American West, emphasizing their historical context. Students are required to do book reports and a research paper. Course includes walking tours

and museum visits. Cross-listed with HIST 5228. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4229 - Colorado Historic Places

Introduces community architecture, folklore, and history for all students. Students learn how to survey, describe, and designate significant historical structures and districts. Cross-listed with HIST 5229. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4230 - Women in the West

Focuses on ways in which women, from the mid-19th century through the mid-20th century, of different races, classes, and ethnic background, have interacted and been active participants in the development of the Western states. Cross-listed with HIST 5230 and WGST 4230/5230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4231 - History in Museums

This core course for the museum studies area of public history introduces students to the theory and practice of museum operations. It covers the basics of museum administration, museum collection and preservation, and museum interpretation from both theoretical and practical points of view. Cross-listed with HIST 5231. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4232 - Historic Preservation

Introduces the history, methodology, and goals of historic preservation. Guest speakers, field trips, research projects, and book reports. Cross-listed with HIST 5232. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4234 - Introduction to Public History

An overview of history outside the academic setting. Students have the opportunity to learn about jobs through on-site visits and presentations made by people engaged in a wide variety of occupations in history other than teaching. Cross-listed with HIST 5234. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4236 - Colorado Mining and Railroads

Focuses on the transportation network that shaped the inland West, and its key role in the extractive industry that gave Colorado its start and nourished the highest state through adolescence. Cross-listed with HIST 5236. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4238 - U.S. History Through Fiction

Explores American history through novels, based on the idea that fiction offers a superb "window" through which to view the past, especially to understand the texture of American society. Cross-listed with HIST 5238. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4240 - National Parks History

Introduces how the National Park Service uses history to identify, designate, preserve, and interpret America's most outstanding historic and natural history sites. After tours of NPS sites, students select from a wide range of projects. Note: Open to all students. Cross-listed with HIST 5240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4242 - Oral History

Trains public history students in the collection of oral history interviews. Students master core readings on the theory, practice, and ethics of oral history. Cross-listed with HIST 5242. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4243 - Public History Administration

Introduces students to the skills, practice, and ethics of public history administration. Cross-listed with HIST 5243. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4244 - Interpretation of History in Museums: Exhibits and Education

This course allows students to gain in-depth knowledge of historical interpretation through exhibits and education in a museum setting. This class is designed for those preparing to work in history museums but is also appropriate for teachers and others who want to learn how museum programs interpret history with artifacts and other historical materials. Cross-listed with HIST 5244. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4245 - Heritage Tourism

History and historic sites have become big business in 21st century tourism. The heritage tourism industry is explored in this introductory course for all interested students focusing on how academic history and historians can partner with tourism and recreation interests. Cross-listed with HIST 5245. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4303 - Sex and Gender in Modern Britain

Examines modern British history by focusing on sex and gender as central aspects in people's lives. Considers the ways gender shapes the realms of politics, economics, society and culture in Britain from the 18th century to the present. Cross-listed with HIST 5303 and WGST 4303/5303. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Cross-listed with ENGL 4306, 5306, HIST 5306, WGST 4306, 5306. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4307 - History of Sexuality

Explores the relationships between gender and norms, sexual practice, and ideas about sexuality in Europe and the United States. Examines how sex and sexuality have changed over time and how those changes relate to social, cultural, political and economic history. Cross-listed with HIST 5307 and WGST 4307/5307. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4308 - Crime, Policing, and Justice in American History

Focuses on changing legal and cultural definitions of crime, the role of the police, the evolution of punishment in theory and practice, and the role of mass culture in shaping the social history of crime and justice. Cross-listed with HIST 5308. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4345 - Gender, Science, and Medicine: 1600 to the Present

Examines the ways science and medicine have both shaped and been shaped by ideas about gender. Pays particular attention to the relationship between scientific/medical ideas about the sexes and the social organization of gender. Cross-listed with HIST 5345 and WGST 4345/5345. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4347 - History of Biology

Examines the development of modern biology from the mid-18th century to the present. Students will look at intellectual, methodological, institutional and social contexts in an attempt to answer the question of how biology became the "pre-eminent" science. Cross-listed with HIST 5347. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4348 - Mind and Malady: A History of Mental Illness

Examines the history of mental illness from the mid-18th century to the present, focusing on the institutionalization of the mentally ill, the origin of psychiatry, the development of models of mental illness and the evolution of clinical treatment. Cross-listed with HIST 5348. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4411 - Modern Mexico

Designed to familiarize students with the critical issues in Mexican political, economic and social history. Traces the emergence of independence and the difficult consolidation of an independent nation state. Cross-listed with HIST 5411, ETST 4411. Max Hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4412 - Mexico and the United States: People and Politics on the Border

Examines the convoluted relations between these two republics, focusing on diplomatic, cultural, and social interactions. Cross-listed with HIST 5412. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4414 - Nationalism and State Building in Latin America, 1750-1850

Explores the problems of nationalism and post-colonial state building by examining the late colonial and early national periods of Latin American history. The course discusses the impact of the enlightenment, the events of the Wars of Independence, and the quandaries faced by the new nations. Cross-listed with HIST 5414. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4415 - Social Revolutions in Latin America

A theoretical framework and an empirical basis for understanding the large-scale social movements that have influenced the course of Latin American nations. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with HIST 5415. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4416 - The Age of Imperialism

Examines causes, character, and consequences of imperialism in the industrial era (ca. 1840-1975). Through intense study of selected cases, students gain an understanding of the different dynamics and varieties of imperialist control. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4417 - Commodities and Globalization

Trading raw material & processed goods internationally has greatly affected world cultures & geopolitics. Tracing commodity chains since 1500 for food, fuel, industrial material & products, & intellectual property, this course will conclude with the effects of current regulations, marketing & environmental concerns. Cross-listed with HIST 5417. Max hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4418 - Trade and Premodern World History

Explores the interconnections that shaped premodern world history, considering the ways that the production, exchange, and consumption of cloth were tied to specific forms of political

power, social and religious organization, and long distance economic relationships. Cross-listed with HIST 5418. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4420 - Traditional China: China to 1600

A general introduction to the history of China from the advent of historic civilization to the point of the great encounter with the West. Cross-listed with HIST 5420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4421 - Modern China

Surveys Chinese history in the modern era. Includes examination of Western domination of China; revolution and internal fragmentation of China; Japanese attacks and World War II; and civil war and the communist revolution. Cross-listed with HIST 5421. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4422 - Living through Mao's China: Life, Mat. Cult, Movies, 1949-76

Introduces students to ordinary people's daily life in Mao's China (1949-1976) through an exploration of material culture, movies and scholarship. This course pays particular attention to the ways people's everyday living intertwined with politics. Cross-listed with HIST 5422. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4431 - Modern Japan

Course of Japanese history since the Perry expedition. Covers Japanese Westernization and industrialization, the expansion of empire and defeat in World War II, the occupation, and the amazing technological and social transformation since the occupation years. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with HIST 5431. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4451 - Southern Africa

An in-depth history of the clash of peoples and cultures in Africa south of the Zambezi River. African and Afrikaner political, economic and cultural development in a single land and the consequences of several competing nationalisms existing side by side are examined. Apartheid and African opposition to it are analyzed. Cross-listed with HIST 5451. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4455 - African Struggle for Independence

An assessment of African leadership from the colonial era to the present. Cross-listed with HIST 5455. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4461 - The Modern Middle East

Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with HIST 5461. Term offered: fall. Max Hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4462 - Islam in Modern History

This course studies Islamic thought and practice over the last two centuries in terms of major historical processes that have operated at local, national, and global scales. Cross-listed with HIST 5462, RLST 4462, RLST 5462. Term offered: spring. Max Hours: 3 Credits. **Semester**

Hours: 3 to 3

HIST 4471 - The Second World War

The War in its totality: causes, military strategies (equal treatment to European and Pacific theaters), campaigns, impact of technology and weapons, political and social upheaval. Cross-listed with HIST 5471. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4472 - The 1950s: Korean War, the Cold War and Social Transformation

A critical and methodical exploration of several of the social, cultural, and political events of the 1950s. Investigates the complex interaction between politics and culture during this decade, paying close attention to anti-Communist thought and the Korean War. Cross-listed with HIST 5472. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4475 - The Vietnam War

Covers the conflict in Vietnam, with roots in the period prior to World War II. Main topics include the rise of nationalism in French Indochina, the war against the French, the Northern move to unify Vietnam, American intervention, and eventual victory of the Northern regime. Cross-listed with HIST 5475. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4490 - Weapons of Mass Destruction

Weapons of mass destruction have affected politics, health, and environments around the globe. This course will examine the development, use, and consequences of these modern technologies of war and terror. Cross-listed with HIST 5490. Term offered: summer, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4491 - United States History, 1865-1919

Surveys the major intersections of politics, culture, and society in American history between 1865 and 1919. The course will be attentive to the diversity of American experiences and will explore domestic and international themes in United States history. Cross-listed with HIST 5491. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4492 - United States History, 1919-1945

Surveys the major intersections of politics, culture, and society in American history between 1919 and 1945. The course will be attentive to the diversity of American experiences and will explore both domestic and international themes in United States history. Cross-listed with HIST 5492. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4493 - United States History, 1945-1973

Surveys the major intersections of politics, culture, and society in American history between 1945 and 1973. The course will be attentive to the diversity of American experiences and will explore both domestic and international themes in United States history. Cross-listed with HIST 5493. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4494 - Red and Blue America: U.S. History, 1973-Present

Surveys the major intersections of politics, culture, and society in American history since 1973. The course will be attentive to the diversity of American experiences and will explore both domestic and international themes in United States history. Cross-listed with HIST 5494. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4503 - Topics in History of Science

Themes vary from year to year. Possible topics: Darwinism, Nature of Memory, Time and Space, Origins. Cross-listed with HIST 5503. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4504 - Animals in U.S. History

Human-animal relationships offer powerful and unexpected perspectives on the American past. An eclectic range of readings and viewings, written assignments and contemplative experiences will contextualize contemporary practices, beliefs, and ethics -- vegetarianism, hunting, pet-keeping, and many others -- in historical context. Cross-listed with HIST 5504. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4621 - Explorers and Exploration

Examines the history of travel and exploration from the 13th century to the present. Readings draw primarily from first-person accounts to understand why people voyage, what they hope to

discover, and what happens to them along the way. Cross-listed with HIST 5621. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4622 - Oceans In History

Explores transoceanic exchanges, relations, and transformations in modern world history. Examines how historians analyze and conceptualize global interactions. Topics include voluntary and forced migrations, resistance and revolution, transoceanic economic relations, piracy, and environmental change. Cross-listed with HIST 5622. Max Hours: 3 Credits.

Semester Hours: 3 to 3

HIST 4645 - Archival Management

This course studies theory and principles pertaining to the management of current and non-current records, public and private archival materials, as well as the administration of archival manuscript depositories for housing records of historical value. Cross-listed with HIST 5645.

Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4810 - Special Topics

Cross-listed with HIST 5810. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

HIST 4839 - History Seminar

Covers the use of documentary sources and historical criticism, with students utilizing these skills in a historical research paper. Note: Required for history majors. Preferably taken in the senior year. Prereq: HIST 3031 with a grade of C or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4840 - Independent Study: HIST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 12 Credits.

Semester Hours: 1 to 3

HIST 4849 - Independent Study History Honors Research Paper

Students competing for history honors must take this course to prepare their honors paper. The course requires students to produce a finished research paper of professional quality under the direction of a history faculty member. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for

approval. Prereq: Open to advanced history majors only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 4850 - History in the Community: History Day Mentoring

Directed by CU Denver History faculty, students participate in and judge National History Day in Colorado. They gain teaching experience mentoring students preparing social-studies and literacy-based projects. Their papers are based on scholarly readings and analyses of their experiences in middle and high schools. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: Permission of department chair. Term offered: spring. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

HIST 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

HIST 5028 - Nations and Classes: 19th Century Europe

Focuses on material and ideological changes in 19th century Europe, exploring social, cultural, political, economic, and intellectual developments. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4028. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5074 - Post-War Germany

Historical survey of Germany since the second world war, with an emphasis on culture and society. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4074. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5133 - Management of Material Culture and Museum Collections

This course provides in-depth knowledge of the rudiments of material culture documentation, preservation and management. While we have designed this class for those interested in working in history museums, this is also appropriate for those students who want to learn the place of artifacts in studying history. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4133. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5209 - Race, Religion, and Belonging

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Cross-listed with ETST 4030, ETST 5030, RLST 4030, RLST 5030 and HIST 4209. Restriction: Graduate standing or instructor permission required to enroll. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5212 - Civil War and Reconstruction

Begins with the causes and outbreak of the American Civil War, describes the military conflict and the social aspects of the war, and examines the federal efforts to reconstruct the southern states and protect the rights of Black citizens after 1865. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4212. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5217 - Consumer Culture

This interdisciplinary course examines the dynamics of the consumer culture in the context of social, economic, and technological history. The analysis begins with 17th century European origins, and continue through recent world developments, emphasizing the U.S. since 1800. Note: Open to all students. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4217. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5227 - American West

Introduces the diverse peoples, places, and approaches to the development of the trans-Missouri West from prehistoric times to the present. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4227. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5229 - Colorado Historic Places

Introduces community architecture, folklore, and history for all students. Students learn how to survey, describe, and designate significant historical structures and districts. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with HIST 4229. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5234 - Introduction to Public History

An overview of history outside the academic setting. Students have the opportunity to learn about jobs through on-site visits and presentations made by people engaged in a wide variety of occupations in history other than teaching. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4234. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5244 - Interpretation of History in Museums: Exhibits and Education

This course allows students to gain in-depth knowledge of historical interpretation through exhibits and education in a museum setting. This class is designed for those preparing to work in history museums but is also appropriate for teachers and others who want to learn how museum programs interpret history with artifacts and other historical materials. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with HIST 4244. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5260 - Digital Studies and Strategies

This interdisciplinary course emphasizes developing media production, web, and GIS skills to design individual and group media projects based on students' research. Critiques and readings examine the successful confluence of media and historical content along with digital dissemination strategies. Cross-listed with HIST 3260. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with ENGL 4306, 5306, HIST 4306, WGST 4306, 5306. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5307 - History of Sexuality

Explores the relationships between gender and norms, sexual practice, and ideas about sexuality in Europe and the United States. Examines how sex and sexuality have changed over time and how those changes relate to social, cultural, political and economic history. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4307 and WGST 4307/5307. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5308 - Crime, Policing, and Justice in American History

Focuses on changing legal and cultural definitions of crime, the role of the police, the evolution of punishment in theory and practice, and the role of mass culture in shaping the social history of crime and justice. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4308. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5343 - Women & Gender in US History

This course will explore women and gender as drivers of US history. From politics to popular culture, jobs to sexual empowerment, civil rights to economic restructuring, we will use gender as a lens to re-envision familiar stories about American history. Cross-listed with HIST 3343, WGST 3343, and WGST 5343. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5412 - Mexico and the United States: People and Politics on the Border

Examines the convoluted relations between these two republics, focusing on diplomatic, cultural and social interactions. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4412. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5421 - Modern China

Surveys Chinese history in the modern era. Includes examination of Western domination of China, revolution, and internal fragmentation of China; Japanese attacks and World War II; and civil war and the communist revolution. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4421. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5455 - African Struggle for Independence

An assessment of African leadership from the colonial era to the present. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4455. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5461 - The Modern Middle East

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4461. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5462 - Islam in Modern History

This course studies Islamic thought and practice over the last two centuries in terms of major historical processes that have operated at local, national, and global scales. Restriction:

Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4462, RLST 4462, RLST 5462. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5475 - The Vietnam War

Covers the conflict in Vietnam, with roots in the period prior to World War II. Main topics include the rise of nationalism in French Indochina, the war against the French, the Northern moves to unify Vietnam, American intervention, and eventual victory of the Northern regime. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4475. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5490 - Weapons of Mass Destruction

Weapons of mass destruction have affected politics, health, and environments around the globe. This course will examine the development, use, and consequences of these modern technologies of war and terror. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with HIST 4490. Term offered: summer, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5494 - Red and Blue America: U.S. History, 1973-Present

Surveys the major intersections of politics, culture, and society in American history since 1973. The course will be attentive to the diversity of American experiences and will explore both domestic and international themes in United States history. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed HIST 4494. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 5810 - Special Topics

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4810. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HIST 5840 - Independent Study: History

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HIST 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form

completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

HIST 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

HIST 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

HIST 6013 - Introduction to the Professional Study of History

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 6840 - Independent Study: HIST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

HIST 6931 - Readings: Special Subjects in History

Readings in topics in history with varying subtitles reflecting course content. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

HIST 6939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Term offered: spring, summer, fall. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

HIST 6940 - Comprehensive Exam

Preparation for and completion of comprehensive examination for History MA. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Max hours: 1 Credit.

Semester Hours: 1 to 1

HIST 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

HIST 6951 - Masters Project: Advanced History Curriculum Development

Students develop curricula for secondary-level history courses; must demonstrate thorough knowledge of subjects; understanding of historiographic and methodological problems; command of primary sources and their uses in teaching; and describe teaching strategies, methods, and assessments to be used in the curricula. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Permission of instructor. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

HIST 6952 - Master's Project: Public History

Public history students may use one to six credits to complete a single public history project. Projects can entail creating an exhibit, organizing a museum or archival collection, conducting a preservation survey or similar activities. Students are required to prepare a paper describing the process and results of the project. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

HIST 6989 - Seminar: Special Subjects in History

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

Human Development and Family Relations

HDFR 1000 - Global Human Development & Learning

The purpose of this course is to examine the contextual nature of human development and learning at the global level. Emphasis is placed on the ecological development of individuals and learning and schooling within familial, cultural and educational contexts. Max hours: 3 Credits.

Semester Hours: 3 to 3

HDFR 1005 - Child Development

This course focuses on the study of human growth, development and ecology from conception to adolescence. The emphasis is on the major theories of child growth and development and the implications of current research findings to better understand child development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 1010 - Life Span Development in Ecological Settings

This course is designed to introduce students to human development in ecological settings in particular family, school and community contexts as it occurs across the lifespan, including emotional, physical, and cognitive development, and emphasizes personal adjustment and achievement. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 1030 - Who am I? Cultural Identity, Family, Diverse Soc Sys

This course will use ecological systems theory perspectives as a foundation for understanding diverse Latino family dynamics, the intersection between Latino families, schools and community systems and other critical issues that Latino family systems face in the United States. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 1050 - Trailblazing and Leading in Student Affairs: Student Affairs Leadership Dev

This course provides a basic introduction to student affairs development practices and perspectives. The course provides an exploration of student affairs leadership identity and college student's leadership role in higher education environments. Max hours: 3 Credits.

Semester Hours: 3 to 3

HDFR 1080 - Lifespan Issues in Family Violence

This course examines family violence over the lifespan from family system and ecological perspectives. The course explores development, definitions, theory, correlates, and the occurrence of family violence over the lifespan; including practice, interventions, and policy within school and community contexts. Max Hours: 3 Credits.

HDFR 1111 - Freshman Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 2000 - Introduction to Family and Community Services

Through ecological systems theories this course is designed to provide students with an introduction to family and community services within community and educational environments. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 2080 - Sex, Human Development and Family Systems

Students will become familiar with human sexuality across the life span through behavioral science and ecological perspectives. Different aspects of sexuality including behavioral, biological, developmental and cultural will be examined Implications for working with individuals, families, and couples through a behavioral science context will be explored. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 2110 - Child Ecology

This course focuses on the study of human growth and ecology from conception to adolescence. The emphasis is on the major theories of child growth, development, and ecology and the implications of classic and contemporary research in the community. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 2200 - Love, Family and Human Development

This course provides an introduction to understanding love, intimate relationships, and family relations through an ecological systems perspective. The course provides an exploration of contemporary diverse family systems and their relationships across the life span. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 3002 - Preparing to be a HDFR Professional

In a seminar format, students will examine the ethics, value systems, and family policies and law affecting the Human Development and Family Relations profession. Students will utilize tools of professional preparation including goal-setting, building/refining resumes, and marketing skills and abilities. Restriction: Faculty or Academic Advisor approval is required to register. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HDFR 3020 - Black and Latino Children in Families and Schools

This course will use ecological systems theory perspectives as a foundation for students to develop their understanding about Black and Latino children as members of family systems,

school systems and community systems within cultural contexts. Max hours: 3 Credits.

Semester Hours: 3 to 3

HDFR 3050 - Children's Thinking and Assessment

A review of the psychology of children's thinking emphasizing developmental changes in modes of thought. Topics include conceptual behavior, problem solving, intelligence, creativity, humor, play, and an introduction to diagnostic, formative and summative assessment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 3100 - Adolescent Ecology

Through ecological systems theories this course is designed to provide an understanding of adolescent ecological development and growth. Students will become familiar with adolescent development and growth from ecological perspectives in contexts of families, schools and communities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 3250 - Families in Global Perspectives

Students will become familiar with family life across the world. Through ecological systems theories, this course is designed to provide an understanding of families in global perspectives. The impact of family policy and practices on international families will be examined. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 3400 - Love, Couples and Family

This course examines the development and maintenance of couple and family relationships through family therapy based concepts, family systems theories and other family theories. Topics include communication patterns, stress and conflict management, decision making and goal-setting within the family. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 3500 - Introduction to Higher Education

The course examines the history and structure of the institutions higher education in U.S. This course will also examine the relationship between institutions of higher education, students, faculty, administrators, and society at large. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4001 - Families and Parenting

This course provides an advanced overview of theories and practices that impact culturally and linguistically diverse families and the parenting process through family systems and ecological perspectives. Specifically, there is a focus on the parent-child relationship through adolescence. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4002 - Family Life and Community Programming I

This course teaches the principles, philosophies, models, and strategic methods of family life education for strengthening interpersonal and family relationships. Culturally competent students will learn about the development and implementation of effective educational programs and experiences within different community settings. Max hours: 3 Credits.

Semester Hours: 3 to 3

HDFR 4003 - Leadership and Organizations

This course provides an understanding of leadership theory and practice in community and educational environments. Students will learn about important aspects about leading diverse community and educational organizations including staff supervision, strategic planning, advancing the organization and maintaining integrity. Cross-listed with HDFR 5003. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4004 - Family and Comm. Prog. II Grant Writing/Fundraising

This course provides an understanding of developing skills on grant writing and fundraising as related to family, community and educational organizations/agencies. Students will learn about important aspects about grant writing, fundraising fundamentals and funding models for sustainability. Cross-listed with HDFR 5004. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4010 - Family and Cultural Diversity

The examination of familial, gender, cultural, linguistic, social and other ecological factors on diverse family systems in the United States will be covered. An ecological theoretical analysis of minority family systems within a familial, educational and social justice perspective will be explored. Cross-listed with HDFR 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4040 - Latino Families in School and Communities

This course will use ecological systems theory perspectives as a foundation for understanding diverse Latino family dynamics, the intersection between Latino families, schools and community systems and other critical issues that Latino family systems face in the United States. Cross-listed with HDFR 5040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4045 - Abuelos (Grandparents) Latino Families

The course will focus on the social gerontology of Latinos families in later life. Specifically, the course will examine how ecological factors including familial, cultural, social, economic, health, cognitive and educational, impact the lives of Latino older person's in the contexts of family systems. Cross-listed with HDFR 5045. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4050 - Foundations of Student Affairs

This course examines theories of college student development including student learning and growth during the postsecondary years. This course will provide an introduction to psychosocial, cognitive, moral, and social identity development theories used to explain college student development. Cross-listed with COUN 5050. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

HDFR 4075 - Family Policy & Law

In this course students will identify, develop, implement and evaluate social policies and laws that effect the well-being of families. Through a family systems perspective, students will examine the law, social services, education, the economy, religion, and politics impact families. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4080 - Global Family Resource Management

This course examines the allocation of family resources (social, financial and material assets), the influence of various ecological systems, the effect on family functioning and goal-setting from a global perspective. Practical applications for Family Relations professionals are included. Cross-listed with HDFR 5080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4090 - Helping Profession Skills in HDFR

This course is designed to provide an overview of essential skills required in a variety of helping situations and settings. Course content includes the development of accurate listening, empathy, reflection, and inquiry skills. Implications for working with individuals, families, and couples will be examined. Cross-listed with HDFR 5090. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4130 - College Student Development

This course examines theories of college student development including student learning and growth during the postsecondary years. This course will provide an introduction to psychosocial, cognitive, moral, and social identity development theories used to explain college student development. Cross-listed with COUN 5130. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

HDFR 4200 - Adult Ecology

The emphasis is on the major theories of adult ecology and growth and the implications of classic and contemporary research in the community. Specifically, biological, psychological, psychosocial, cognitive, and cross-cultural theories will be explored. Max hours: 3 Credits.

Semester Hours: 3 to 3

HDFR 4260 - Family Systems and Social Justice

Relying on ecological systems theories, this course will introduce students to families and family systems. Students will investigate how families experience (in)justice in the areas of access to education, community services, and employment. Cross-listed with HDFR 5260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4300 - Families in Later Life

Students will become familiar with the importance of families in later life. Through family systems and ecological systems theories, this course is designed to provide an understanding of the importance of family relationships and implications for practice, research, and policy. Cross-listed with HDFR 5300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4500 - Diversity, Inclusion, Social Justice in Higher Education

An examination of society, media, and public and educational policy and their impact on higher education access and persistence for marginalized groups. Students are called to consider how student affairs professionals might promote social justice for marginalized student groups. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4850 - Family Systems Therapy, Religion and Spirituality

This course examines how the intersection between different religious and spiritual frameworks affects family systems. A strengths-based ecological perspective, family therapy theories and family systems theories will be used to understand religious and spiritual frameworks in working with families in schools and communities. Cross-listed with RLST 4850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4888 - LGBTQ Family Systems

This course examines diverse Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ) family systems through ecological systems perspectives and family theories. The course provides an exploration of contemporary research, policy and practice as it pertains to LGBTQ families. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 4930 - Human Development and Family Relations Internship

This course provides supervised practicum/field experience to Human Development and Family Relations students. Students will apply theory and evidence-based knowledge in professional situations, enhancing the development of their professional identities and career goals by working within and evaluating community-based organizations. Prereq: HDFR 3002. Repeatable. Max Hours: 5 Credits. **Semester Hours:** 1 to 5

HDFR 5002 - Family Life and Community Programming I

This course teaches the principles, philosophies, models, and strategic methods of family life education for strengthening interpersonal and family relationships. Culturally competent students will learn about the development and implementation of effective educational programs and experiences within different community settings. Cross-listed with HDFR 4002. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5003 - Leadership and Organizations

This course provides an understanding of leadership theory and practice in community and educational environments. Students will learn about important aspects about leading diverse community and educational organizations including staff supervision, strategic planning, advancing the organization and maintaining integrity. Cross-listed with HDFR 4003. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5004 - Family and Comm. Prog. II Grant Writing/Fundraising

This course provides an understanding of developing skills on grant writing and fundraising as related to family, community and educational organizations/agencies. Students will learn about important aspects about grant writing, fundraising fundamentals and funding models for sustainability. Cross-listed with HDFR 4004. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5010 - Family and Cultural Diversity

The examination of familial, gender, cultural, linguistic, social and other ecological factors on diverse family systems in the United States will be covered. An ecological theoretical analysis of minority family systems within a familial, educational and social justice perspective will be explored. Cross-listed with HDFR 4010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5020 - Black and Latino Children in Families and Schools

With a focus on application of scholarship to practice, this interdisciplinary course will introduce graduate students to scholarly literature from family sciences, sociology, education and related fields to understand Black and Latino children within family, school and community systems. Restriction: Restricted to graduate level students. Cross-listed with ETST 5021. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5040 - Latino Families in School and Communities

This course will use ecological systems theory perspectives as a foundation for understanding diverse Latino family dynamics, the intersection between Latino families, schools and community systems and other critical issues that Latino family systems face in the United States. Cross listed with HDFR 4040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5045 - Abuelos (Grandparents) Latino Families

The course will focus on the social gerontology of Latinos families in later life. Specifically, the course will examine how ecological factors including familial, cultural, social, economic, health, cognitive and educational, impact the lives of Latino older person's in the contexts of family systems. Cross-listed with HDFR 4045. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5080 - Global Family Resource Management

This course examines the allocation of family resources (social, financial and material assets), the influence of various ecological systems, the effect on family functioning and goal-setting from a global perspective. Practical applications for Family Relations professionals are included. Cross-listed with HDFR 4080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5090 - Helping Profession Skills in HDFR

This course is designed to provide an overview of essential skills required in a variety of helping situations and settings. Course content includes the development of accurate listening, empathy, reflection, and inquiry skills. Implications for working with individuals, families, and couples will be examined. Prereq: COUN 5010. Cross-listed with HDFR 4090. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5180 - Family and Community-Centered Classroom Practice

This intensive course is designed to help teachers develop a responsive, collaborative, and theorybased understanding of the interaction of schools, families and the local community. In this course, you will examine the impact that various social interactions had on yourself, a student's family, and the community as a whole. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5260 - Family Systems Social Justice

Relying on ecological systems theories, this course will introduce students to families and family systems. Students will investigate how families experience (in)justice in the areas of access to education, community services, and employment. Cross-listed with HDFR 4260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 5300 - Families in Later Life

Students will become familiar with the importance of families in later life. Through family systems and ecological systems theories, this course is designed to provide an understanding of the importance of family relationships and implications for practice, research, and policy. Cross-listed with HDFR 4300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 6000 - Family Theories

Students will examine the methods of inquiry and the basic foundations of contemporary family theory. Using a family systems perspective, students will utilize and analyze theory in the exploration of diverse and changing family dynamics in a societal context. Cross-listed with HDFR 7000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 6075 - Family Policy and Law

Theoretical and practical exploration of the process of policy-making, with particular attention to the role of courts, that impact families and children to provide foundations for research and advocacy related to family policy and law. Cross-listed with HDFR 7075. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7000 - Family Theories

Students will examine the methods of inquiry and the basic foundations of contemporary family theory. Using a family systems perspective, students will utilize and analyze theory in the exploration of diverse and changing family dynamics in a societal context. Cross-listed with HDFR 6000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7010 - ProSeminar in Family Science & Human Development

This course aims to introduce 1st year PhD students in FSHD to core theoretical and empirical work in the discipline and the intellectual traditions that undergird the program. Students will be introduced to faculty research that cut across disciplines and that focus on contexts that shape life trajectories and opportunities. Max Hours: 1 Credits. **Semester Hours:** 1 to 1

HDFR 7050 - Special Topics in Human Development and Family Relations

Advanced study of special topics in human development in family, community and educational settings in HDFR, to be selected by the instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

HDFR 7075 - Family Policy and Law

Theoretical and practical exploration of the process of policy-making, with particular attention to the role of courts, that impact families and children to provide foundations for research and advocacy related to family policy and law. Cross-listed with HDFR 6075. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7100 - Family Issues in Immigration and Migration

Exploration of family issues related to immigration in the US context, including how policies shape emigration and immigration of families. Focus will be on social, cultural, political, and economic factors related to early childhood, parenting, adolescent identity, marriage and family formation, health and wellbeing and integration in the US. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7240 - Latin@ Families in Schools and Communities

This course will use ecological systems theory perspectives as a foundation for understanding diverse Latino family dynamics, the intersection between Latin@ families, schools and community systems, mental health systems, and other critical issues that Latin@ family systems face in the United States. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7260 - Family Diversity and Social Justice

Through this course, students will explore theory and research on the family, using interdisciplinary research and theory to inform their knowledge and generation of questions that recognize the challenges faced by diverse families in a shifting societal and national environment. Restriction: Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7270 - Advanced Study of Human Development

This course is an intensive overview of major theories undergirding the study of human development. The emphasis is upon broad ecological theories that cut across different aspects of human development, including social and emotional development, cognition, and achievement within contemporary societal social structures. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HDFR 7840 - Human Development and Family Relations Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

Humanities

HUMN 1012 - The Humanistic Tradition: Modes of Expression

Familiarizes students with humanistic modes of expression through the study of history, literature, philosophy, music, and the visual and dramatic arts. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 4251 - Introduction to Legal Studies

A survey of the United States legal system, including lawmaking powers, jurisdiction, court procedures, professional ethics and major principles of business law, contracts, estates and probate, family law, property and torts. Cross-listed with HUMN 5251/SSCI 5251. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 4325 - First Amendment: Theory and Context

First Amendment jurisprudence including free speech/responsibility, sedition/seditious libel/dissent, prior restraints, time/place/manner restrictions, hate/intimidating speech, defamation, privacy/security tensions, intellectual property/public good, advertising, corporate speech, sexual expression, and public status of religion. Cross-listed with HUMN 5325, SSCI 4325, SSCI 5325, PSCI 4325 and PSCI 5325. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

HUMN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

HUMN 4984 - Topics: Interdisciplinary Humanities

Concerned with specialized aspects of the humanities from various theoretical and research perspectives. These courses are interdisciplinary and serve as a forum for discussion of individual projects and theses. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

HUMN 5000 - 19th and 20th Century Continental Philosophy

A seminar on key problems and thinkers in the nineteenth & twentieth century continental philosophical traditions and their contemporary significance. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4000/5000 and SSCI 5000. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5013 - Methods and Practices of Graduate Interdisciplinary Humanities

The second of three required Master of Humanities core courses, this course introduces beginning graduate students to methodologies and intellectual frameworks for gathering, organizing, and developing interdisciplinary research. Focus is on the application of theories and methods of research, interpretation and analysis in humanistic research through readings that explore philosophical and cultural discourses have altered theory and method. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Restriction: Restricted to Graduate Level Students. Cross-listed with PHIL/SSCI 5013. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5020 - Foundations and Theories of Interdisciplinary Social Science

The first of the Master of Social Science core courses, this course exposes beginning graduate student to critical , key analytic models, and their application in disciplines that comprise the social sciences (classical anthropology, sociology, sociology of religion, philosophy of history, political theory, classical psychology, etc.) for the purpose of graduate-level interdisciplinary social science research. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SSCI 5020 and PHIL 5020. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5025 - Foundations and Theories of Interdisciplinary Humanities

Exposes the beginning graduate student to exemplary works and methodologies of disciplines oriented to humanities and social sciences, such as philosophy, sociology, history, communication, fine arts, and literature. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SSCI 5025. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5101 - Pragmatism: Classical American Philosophy

The most significant philosophical tradition born in the United States is pragmatism. Examines several of the most important classical works of this tradition, the influence of thinkers who have helped pragmatism, and the contemporary relevance of this tradition. Figures who may be included in this course are: Emerson, Pierce, Royce, James, Dewey, Mead, Rorty. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4101, 5101, SSCI 5101. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5220 - Aesthetics and the Philosophy of Art

Introduction to major theories of aesthetics and contemporary discussions of problems in aesthetics and the philosophy of art, including topics such as: the nature of art, interpretation

and evaluation in art. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4220/5220. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5242 - Bioethics

Examines some of the major moral issues confronting the nation's health care system. The class will search for solutions to such problems as financing health care for those unable to do so on their own, determining the extent of a patient's right to both refuse and demand certain types of medical treatment, and allocating scarce medical resources such as life-saving vital organs. The springboard for examining these issues will be the doctor or patient relationship framed by the moral principles of respect for persons and beneficence. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4242, PHIL 5242, SSCI 5242. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5251 - Introduction to Legal Studies

A survey of the United States legal system, including lawmaking powers, jurisdiction, court procedures, professional ethics and major principles of business law, contracts, estates and probate, family law, property and torts. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 4251/SSCI 5251. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5325 - First Amendment: Theory and Context

First Amendment jurisprudence including free speech/responsibility, sedition/seditious libel/dissent, prior restraints, time/place/manner restrictions, hate/intimidating speech, defamation, privacy/security tensions, intellectual property/public good, advertising, corporate speech, sexual expression, and public status of religion. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 4325, SSCI 4325, SSCI 5325, PSCI 4325 and PSCI 5325. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5540 - Law, Diversity and Community in United States History

Engaging extensive primary and secondary source material, course applies an interdisciplinary approach to diversity and conflict that often surrounds the quest for economic, moral and social inclusion in the United States. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SSCI 5540. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5600 - Philosophy of Religion

Nature of religion and methods of studying it. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4600, 5600, RLST 4060, 5060, and SSCI 5600. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5660 - Visual Arts: Interpretations and Contexts

Provides graduate-level interdisciplinary study in the historiography, methodologies, and theories used to understand how visual arts, including painting, sculpture, photography, film and performance art influence the making of culture. Students gain critical skills for analyzing a variety of visual and aesthetic products of culture. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HUMN 5720 - Sexuality, Gender and Their Visual Representation

Studies sexuality, gender and identity representation from classical antiquity through the present in the visual arts. Uses the literature of visibility, feminism, race and queer theory. Explores representations of femininity, masculinity and androgyny and their reinforcement and challenge to gender-identity norms. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SSCI 5720 and WGST 5720. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HUMN 5770 - Imperialism, Post-Colonial Theory & Visual Discourse

Western empires disseminate political, social, economic & cultural practices through complex interplay of cultural practices. Visual production is a complex site for meaning making within imperialism. Examines how visual discourses operated to create meaning for audiences, through focus on postcolonial critique. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-list SSCI 5770. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

HUMN 5833 - Existentialism

Examines one of the most influential movements in recent European thought, beginning with existentialism's 19th century roots, and continuing on to the existentialist philosophers of the 20th century. Figures covered may include Dostoyevsky, Kierkegaard, Nietzsche, Heidegger, Sartre and de Beauvoir. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4833/5833 and SSCI 5833. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

HUMN 5840 - Independent Study: HUMN

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours: 1 to 3**

HUMN 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

HUMN 5920 - Philosophy of Media and Technology

A philosophical examination of interrelationships between contemporary media, technology, and their impacts upon character of contemporary life and values. Topics may include ethics, epistemology, democracy, advertising, media literacy and criticism. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4920, 5920, SSCI 5920. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5924 - Directed Research and Reading in Interdisciplinary Humanities

The first of the Master of Humanities core courses, this course provides beginning graduate students grounding in critical theorists, key analytic models, and their application in disciplines which comprise the humanities (philosophy, literature, art history, visual studies, history, communication) for the purpose of graduate-level, interdisciplinary humanities research. Examines questions about reality, knowledge, ethics that affect research and writing in the humanities. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Term offered: spring, fall. Max Hours: 3 Credits.

Semester Hours: 3 to 3

HUMN 5933 - Philosophy of Eros

What does it mean to understand philosophy as an erotic activity? This question will be examined, first by studying Plato's dialogues-such as Lysis, Symposium and Republic-and then by reading texts from Sigmund Freud, Michael Foucault and others. Cross-listed with PHIL 4933, WGST 4933/5933 and SSCI 5933. Max hours: 3 Credits. **Semester Hours:** 3 to 3

HUMN 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

HUMN 5950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

HUMN 5960 - Master's Project

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

HUMN 5984 - Topics: Interdisciplinary Humanities

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

HUMN 6010 - Methods and Theories of Feminism and Gender

This course provides graduate-level interdisciplinary study in historiography, methodologies and theories of women's, gender, and sexuality studies and considers how culture is constructed around these categories. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with WGST and SSCI 6010. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Information Systems

ISMG 2050 - Introduction to Business Problem Solving

Focuses on the technology and problem solving skills necessary for students to succeed both at school and in the business world. Focuses on business decision making using spreadsheets, database and web tools. Students solve problems in statistics, accounting, finance, marketing, management and information systems. The objective is to provide problem solving methods necessary for students to succeed in the business community. This is a business core course therefore a grade of a 'C' or better must be earned to satisfy Business graduation and prerequisites for other business courses. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 2075 - Introduction to Microsoft Access

Introduction to Microsoft Access prepares students to use data bases to analyze data and solve real-life business problems. It challenges students to use critical thinking and analysis to find efficient and effective solutions to real-life business situations. Students will use databases to solve problems in accounting, finance, and information systems. Prereq: Computer Competency. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ISMG 2800 - Designing for the Web

Students examine how the Web is evolving to support a variety of business needs. The course covers the design and usability principals necessary for improving online interactions via traditional websites as well as using technologies promoting collaboration and information sharing (e.g. social networks, blogs, wikis, forms). Topics include: the principles of web page and web site design; hypertext markup language, cascading style sheets, streaming video, online collaboration technologies; client and server scripting; and the process of testing and publishing web sites. Coreq: ISMG 2050. As a corequisite, ISMG 2050 can be taken concurrently or completed prior. If completed prior, must earn a C- or higher. Restriction: Restricted to undergraduate Business majors at a sophomore standing or higher. Max hours: 3 Credits.

Semester Hours: 3 to 3

ISMG 3000 - Technology In Business

Covers the role of information technology in business organizations. It exposes students to innovative and interesting technologies and illustrates how those technologies are changing the way businesses operate. It highlights the importance of IT in organizations, including the relationship between technology & competitiveness, the alignment of business and IT strategy, the development and management of an effective IT infrastructure and the use of IT strategy, the development and management of an effective IT infrastructure and the use of IT-enabled organizational processes. Topics include: coping with information intensity, web sites, social networks and blogs; business intelligence at each level of management; IT based reports and data; collaboration and the impact of technology on organizational interaction; the use of IT for controlling and enhancing business processes; security, privacy & disaster recovery; and emerging technologies. Note: Business core course therefore a grade of a "C" or better must be earned to satisfy graduation requirements. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 3300 - Social Media in Business

Social media has become a central component of many business activities including marketing, HR, product management and the supply chain. In this course, we examine the organizational use of social media technologies such as blogs and social networks, as well as the use of social media analytics to drive business strategy. Cross-listed with MKTG 3300. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 3500 - Enterprise Data and Content Management

The success of today's business often hinges on the ability to turn mountains of data into critical information to make right decisions quickly and efficiently. This course introduces students to data, content and multimedia management using current enterprise data management tools. Topics include: Oracle SQL for relational database and for multi-media

content; Oracle forms and reports, XML, and content management. Prereq: ISMG 2050 with a grade of C- or higher or department approved equivalent transfer credit (may need 1-credit ISMG 2075 as supplement). Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 3600 - System Strategy, Architecture and Design

This course is designed to provide the understanding of current concepts related to information systems development in an organizational context. It emphasizes the interactive nature of the analysis and design process. Topics include: requirements analysis, model based analysis and design; evaluating outsourcing, COTS and other systems acquisition options; and quality, six-sigma, and ethics in design. New concepts such as agile modeling and extreme programming are covered. Prereq: ISMG 2050 with a grade of C- or higher or department approved equivalent transfer credit (may need 1-credit ISMG 2075 as supplement). Coreq: ISMG 3500. As a corequisite, ISMG 3500 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ISMG 4028 - Travel Study Topics

Join your classmates in an international travel study course to understand the business operations of another culture. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ISMG 4200 - Building Business Applications

Examines how software platforms for mobile business applications are designed and implemented. Usability, logic, and platform selection issues are highlighted through the development of simple mobile business systems. Includes programming concepts, interface design; storing, retrieving, and manipulating information; real time decision making; platform selection, testing and deployment. Prereq: ISMG 2800 with a D- or higher. Coreq: ISMG 3500. As a corequisite, ISMG 3500 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4300 - Information Security and Compliance

This course covers information security threats and various mechanisms available to organizations to defend against information compromise. It offers thorough analysis of state, national, and international information security regulations with which businesses must comply, including the Sarbanes-Oxley, Gramm-Leach-Bliley and Hippy Acts. The regulatory compliance analysis will include measures the organizations must and should perform to be in compliance. Coreq: ISMG 3000. As a corequisite, ISMG 3000 can be taken concurrently or completed prior. If completed prior, must earn a C or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4400 - Programming Fundamentals with Python

This course is designed to provide a thorough introduction to Python and fundamental programming concepts like data structures, networked application program interfaces, files and databases. Principles of object-oriented programming and secure programming practices are demonstrated using programming constructs taken from the business domain. Students are required to design and create their own applications for data retrieval, processing, and visualization. Prereq: ISMG 2800 with a D- or higher. Co-req: ISMG 3500. As a corequisite, ISMG 3500 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4450 - Web Development Immersive

This course is designed to simulate what you'll experience in a real work environment, and covers the languages, frameworks, and computer science fundamentals essential to a career in web development. It will cover introduction to programming and Front End Development, Server Side Programming with Node, Front End frameworks and Single Page Applications, and Data Structures and Algorithms, as well as a capstone project. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 12 Credits. **Semester Hours:** 12 to 12

ISMG 4700 - Business Data Communications and Networking

Provides an in-depth knowledge of data communications and networking requirements including: networking and telecommunications technologies, hardware, and software. Emphasis is upon the analysis and design of networking applications in organizations. Management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options are also covered. Students learn to evaluate, select, and implement different communication options within an organization. Topics include: network hardware and software; network configuration; network applications; distributed versus centralized systems; network architectures, topologies and protocols; network performance analysis; privacy, security, reliability; management of telecommunications, and communications standards.

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4750 - Business Intelligence and Financial Modeling

In this course, the student learns to analyze and solve financial problems with spreadsheet models, apply Oracle Financial and Business Intelligence software that is widely used in corporate financial operations and model risk and uncertainty with Monte Carlo software. Prereq: ISMG 2050 with a grade of 'C-' or higher, FNCE 3000 and ISMG 3000 (ACCT 4054 may substitute for ISMG 3000) all with a grade of 'C' or higher. Cross-listed with FNCE 4750. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4760 - Customer Relationship Management

This marketing-theory driven course examines customer relationship management (CRM) as a key strategic process for organizations. Composed of people, technology and processes, effective CRM optimizes the selection or identification, acquisition, growth and retention of desired customers to maximize profit. Besides presenting an overview of the CRM process, its strategic role in the organization and its place in marketing, students have an opportunity to create simulated CRM database using popular software package that help to illustrate what CRM can do, its advantages and limitations. Prereq: MKTG 3000 and ISMG 3000 both with a grade of C or higher. Cross-listed with MKTG 4760. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4780 - Accounting and Information Systems Processes and Controls

The course is designed to develop knowledge and skills used to understand and evaluate corporate accounting processes and systems. It focuses on financial and information system internal controls and the flow of corporate information through accounting system. A financial system objective and risk assessment approach is used to present concepts and techniques for evaluating the adequacy of system processes and controls. Cross-listed with ACCT 4780, 6510 and ISMG 6510. Prereq: Completion of ACCT 2200, ACCT 2220 and ACCT4054 with a grade of 'C' or better. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4785 - Ethics: A Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Cross-listed with MGMT 3420, MGMT 6420, ISMG 6885. Restriction:

Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4840 - Independent Study

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

ISMG 4900 - Project Management and Practice

Covers the factors necessary for successful management of enhancement projects. Both technical and behavioral aspects of project management are discussed. The focus is on management of development for enterprise-level systems. Topics include: managing the system lifecycle; requirements determination, logical design, physical design, testing, implementation; metrics for project management; managing expectations: superiors, users, team members and others related to the project; determining skill requirement and staffing the project; cost-effectiveness analysis; reporting and presentation techniques; effective management of both behavioral and technical aspects of the project; change management. Note: Successful completion of this course meets the educational requirements to sit for both the PMP and CAPM exams. Prereq: Students must be a junior status and have completed either: 1. ISMG 3000 or ACCT 4054 and MGMT 3000 and MKTG 3000, OR 2. ISMG 3000 and ISMG 3500 and ISMG 3600. Restriction: Restricted to undergraduate students in the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 4950 - Special Topics

Seldom offered. This course varies from offering to offering. Typically, it is a research-oriented course exploring new developments in information systems. Prerequisites vary according to topic. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ISMG 5939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ISMG 6020 - Programming Fundamentals with Python

This course is designed to provide a thorough introduction to Python and fundamental programming concepts like data structures, networked application program interfaces, files and databases. Principles of object-oriented programming and secure programming practices are demonstrated using programming constructs taken from the business domain. Students are required to design and create their own applications for data retrieval, processing, and visualization. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of

NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6028 - Travel Study Topics

Join your classmates in an international travel study course to understand the business operations of another culture. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ISMG 6040 - Business Process Management

Designing effective information systems for business requires an awareness of the organization(s) business processes and how to manage and streamline them. The objectives of the course are for students to understand the importance of business processes; the main types of business processes; and the evolution of business process management; business process outsourcing; business process re-engineering; business process redesign; technology enabled business processes; and automated workflow. An important activity is graphically mapping business processes, which are transformed into an application or set of applications. The organization needs to manage the electronic workflow to monitor that the work gets done and allow changes to the workflow. Case studies of organizations are studied for most topics to enhance understanding. The group projects let students apply their knowledge of the course to a specific organization. By the end of this course students should have an appreciation of the important process-centric issues in business systems design. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6060 - Analysis, Modeling and Design

Provides an understanding and application of systems analysis and design processes. Students are exposed to system development life cycle (SDLC), structured systems analysis and design methods, object-oriented analysis and design methods, prototyping and commercial off-the-shelf package software approaches, and joint and rapid application development. Emphasizes the skills required for system analysts such as analytical, interpersonal, technical, fact-finding, and project management skills. Topics include data, process and object modeling, input-output and user interface design, and systems implementation and support. To provide an opportunity to develop these skills, an information system project is completed by a group of students. Students use a Case tool for their group project. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6071 - Introduction to Health Information Technology

Examines what needs transforming in healthcare to improve value, safety and appropriateness of care, and what the role of IT is in that transformation. It also examines the challenges of cultural change and IT strategy in succeeding with clinical information projects. Differences between installation, implementation, transition and actual transformation are suggested and methods for managing subcultures in healthcare (IT, clinical, administrative) are reviewed. Cross-listed with HLTH 6071. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits.

Semester Hours: 3 to 3

ISMG 6072 - Fundamentals of Health Information Technology Management

Provides an introduction to the management of information technology in healthcare. A description of information processing, the origin, content, evolution of healthcare information systems and the methodologies deployed to acquire and manage information requirements are discussed. Cross-listed with HLTH 6072. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits.

Semester Hours: 3 to 3

ISMG 6080 - Database Management Systems

The success of today's business often hinges on the ability to utilize critical information to make the right decisions quickly and efficiently. Transforming mountains of data into critical information to improve decision making is a skill every business decision maker must possess. This focus course covers the database design topics with a focus on enabling business decision making. Detailed topics include collecting, capturing, querying and manipulating data (using SQL and QBE) for simple to medium complex business applications. Commercial database products are utilized to demonstrate the design of database applications in management, marketing, finance, accounting, and other business areas. Students will be able to design and implement simple to medium complex database applications after successful completion of this course. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6120 - Network Design and Analysis

Communication, knowledge sharing, and information acquisition within and between businesses are critical for long term strategic business success. Technological advancements are radically changing the way business communication and knowledge sharing are performed. This course will briefly examine the traditional concepts of local and wide area networks for reference purposes, but then will focus on how newer technologies are changing business

practices. Traditional local and wide area network concepts that will be covered in this course include WiFi wide area networks, wireless local area networks, cellular networks, and additional supporting services. Newer technologies that will be covered include social computing, Internet of Things, and artificial Intelligence. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6180 - Information Systems Strategy

Digital strategy is the application of digital technologies to business models to form new differentiating business capabilities. The course starts with the highlights of genesis and importance of IT in organizations, including the relationship between digital technology and competitiveness. Then, the development and management of an effective digital infrastructure are discussed. Realizing that the effective use of digital technology requires the alignment of competitive strategies, business processes, and applications, the course takes a top management perspective on the development of policies and plans that maximize the contribution of digital technologies to organizational goals. A broad overview of how systems support the operational, administrative, and strategic needs of organizations is covered. Cross-listed with BUSN 6610. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6200 - Global Information Systems

Will focus on managing information technology globally and the new organizational and information technology designs that firms are establishing to meet the ever-growing global requirements. The course will cover such issues as how information is used and how information technology is deployed by multinationals in different countries, the state of information technology and telecommunication industries in countries around the world, how global firms gain strategic benefits from information technology, and how firms manage and use global virtual teams. Prereq: ISMG 6040 or 6120 or BUSN 6610. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6220 - Business Intelligence Systems and Analytics

This course covers the collection of computer technologies that support decision making. These technologies have had a profound impact on corporate strategy, performance, and competitiveness. These techniques broadly encompass analytics, business intelligence, and decision support systems. The discussion is organized around key enablers of the three types of analytics (1) descriptive analytics including data warehousing, business reporting, decision

dashboard/ scorecards, visual analytics, (2) predictive analytics including Web Analytics, Web Mining and Social media Analytics, and (3) prescriptive analytics including decision analytics and big data analytics. The course concludes with emerging trends and topics in business analytics, including geospatial in analytics, location-based and consumer-oriented analytical applications, mobile platforms, and cloud-based analytics. The recommended prerequisite for this course is ISMG 6080. If you are familiar with database management systems and have worked with such systems (e.g., ACCESS) in the past, you satisfy the prerequisite requirements for this course. Cross-listed with BUSN 6812. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6240 - Website Development Practice and Technologies

Presents a broad coverage of design principles and techniques to develop effective web sites. The course emphasizes: (1) understanding the principles of web page and web site design and the process of publishing web pages, (2) developing client-side scripts for use in web sites, (3) using server-side programs or scripts to develop dynamic web sites using databases, and (4) understanding technologies for managing large web sites including XML schemas, content management systems and web services. If you have relevant experience in database and programming please contact the instructor for permission to waive the prerequisite of ISMG 6020. Prereq: ISMG 6020. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6280 - Service Oriented Architecture

Explores "Service Oriented Architecture" (SOA), which refers to a design pattern made up of components and interconnections that stress interoperability and location transparency. Covers the latest heterogeneous models for carrying out large scale distributed computing using Web services. The fundamentals of defining, designing, building, testing and rolling-out a SOA system are explored using tools from major Web service vendors. Also, looks at the impact of SOA on software quality, efficiency, performance and flexibility. Prereq: ISMG 6020. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6320 - Innovative Health Information Technologies

Learn how innovative health info technologies shape and redefine healthcare by enhancing medical care through scope and scale effects, providing tech efficiencies in delivery of care, utilizing advance tools for patient Ed and self-care, network-integrated decision support, e-business models & opportunities for e-health. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6340 - Cloud Computing Concepts, Tools, and Security

This course provides an introduction to cloud computing concepts, capabilities, and scenarios where cloud computing technology can be leveraged. Students will learn the basic building blocks of cloud computing, investigate the various types and models of cloud computing, and identify how businesses can implement these technologies. This class uses hands-on labs to give students real-world practice on how to configure and secure a cloud computing environment. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6420 - Global Enterprise Systems

Examines the evolution of global enterprise systems - from internally focused enterprise resource planning (ERP) client or server systems to externally focused eBusiness. Studies the types of issues managers need to consider in implementing cross-functional integrated enterprise systems. Examines the general nature of global enterprise computing, re-engineering principles and the technical foundations of client or server systems and enterprise information architectures. Students learn about the global enterprise systems marketplace. Topics include the tools and methodology, modules, processes and industry initiatives. Finally, the course looks into the future and predicts enterprise system trends. The objective of the course is to make students aware of the potential and limitations of global enterprise systems. The objective will be reached through case studies, lectures, guest speakers and a group project. Coreq: ISMG 6180 or BUSN 6610. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6430 - Information Systems Security and Privacy

Designed to develop knowledge and skills for security of information and information systems within organizations. Focuses on concepts and methods associated with planning, designing, implementing, managing, and auditing security at all levels and on all systems platforms, including enterprise systems. This course presents techniques for assessing risk associated with accidental and intentional breaches of security as well as disaster recovery planning. For the best outcome it is recommended that you complete ISMG 6180 or BUSN 6610 prior to taking this course or during the same term as you take this course. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6450 - IT Project Management

Focuses on how firms successfully manage the adoption of It. Projects and program management principles are the primary focus of this course. Topics covered include approaches to prioritizing projects, estimating cost and time-to-market, build vs. buy decision, planning, monitoring and controlling implementation, measurement, total cost of ownership, effective management of both behavioral and technical aspects of the project and change management. For the best outcome it is recommended that you complete ISMG 6180 or BUSN 6610 prior to taking this course. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6460 - Emerging Technologies

Provides an introduction to the expansive array of information technologies that form the infrastructure of a modern business enterprise. Emphasis is placed on learning conceptual technological foundations and understanding the business value of the various technologies. The purpose of the course is to develop the student's ability to discuss recent technological advancements with other It professionals and management. Technology assessment is emphasized. Prereq: ISMG 6180 or BUSN 6610 (6810). Restriction: Restricted to graduate majors within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Cross-listed with BUSN 6800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6470 - Text Data Analytics

This course includes two topics. The first topic covers algorithms and tools to perform quantitative analysis of unstructured text data. Concepts and algorithms that will be introduced in the class include Zipf's Law, Power Law Distribution, Pattern Discovery (using algorithms of Entropy, Inverse Document Frequency, Clustering etc.), and Machine Learning etc. SAS Enterprise Miner/Text Miner will be introduced as a practice tool to carry out quantitative analysis of unstructured text data. By using the SAS Text Analytics software, students will learn the skills to uncover underlying themes and concepts contained in a large text document corpus. The second topic covers seminal theories and practical methods necessary to perform qualitative analyses of text data. Many qualitative research methods using text data (e.g., grounded theory, ethnographic study, case study etc.) will be introduced. NVivo 11 software will be used as a practice tool to conduct qualitative analyses of text data. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6480 - Data Warehouse and Administration

Management of large, complex data warehouses and operational databases involves technical skills and background needed by information systems professionals as well as tactical and

strategic issues faced by information technology managers. This course provides conceptual knowledge, practical skills, and policy background for prospective information systems professionals and information technology managers. The course covers business aspects, conceptual background, and product material about management of data warehouses and operational databases. Assignments and projects involve Oracle skills for database administration and tactical or strategic issues faced by information technology management. Prereq: ISMG 6080. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 6510 - Accounting and Information Systems Processes and Controls

Designed to develop knowledge and skills used to understand and evaluate corporate accounting processes and systems. Focuses on financial and information system internal controls and the flow of corporate information through an accounting system. A financial system objective and risk assessment approach issued to present concepts and techniques for evaluating the adequacy of system processes and controls. Cross-listed with ACCT 6510, 4780 and ISMG 4780. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 6800 - Special Topics

A variety of advanced topics are offered in this course. Past topics include the human-computer interface, software engineering, artificial intelligence, graphical user interface, project management and electronic commerce. Consult the current 'Schedule Planner' for semester offerings. Note: Seldom offered. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Repeatable. Max hours: 15 Credits. **Semester Hours: 3 to 3**

ISMG 6810 - Business Intelligence in Healthcare

Provides students with an overview of how business intelligence is used in the healthcare industry. Students study the evolution of IT in healthcare including digitization of electronic health records and systems integration. Next the course looks at healthcare transformation and the evolution of business intelligence in general. Using case studies and hands on exercises, students learn about different aspects of business intelligence in various subsets of the healthcare industry. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 6820 - Business Intelligence and Financial Modeling

This course will introduce students to the application of business intelligence in a corporate finance setting. Financial data intelligence is essential for effective decision making throughout the firm, in finance directly and in other functions supported by the finance department. Strategy setting, budgeting, and new product development are just a few decision areas where finance personnel play an active role. In this course, we learn how to apply business intelligence software tools to enable finance personnel to access and analyze corporate data in support of critical decision making across the enterprise. Students will also analyze data through the use of financial models built in Microsoft Excel. The development of complex financial models will provide students with valuable hands-on experience with a software tool used widely incorporate finance departments. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6830 - IT Governance and Service Management

Deals with interrelated decisions on clarifying the business role of IT, defining integration and standardization requirements for the IT architecture, shared and enabling services for the IT infrastructure and business need for SaaS, and governance of cloud computing, IT outsourcing, and other IT services. Restrictions: Restricted to graduate majors within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6840 - Independent Study: ISMG

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

ISMG 6850 - Securing the Enterprise

This course provides the knowledge required to analyze the current enterprise environment in order to prepare a risk mitigation for security vulnerabilities encountered. Topics include principles and concepts; threats, vulnerabilities, risks, attacks and controls; risk process and management; and enterprise security policies. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6855 - Protecting the Enterprise

This course examines methods and techniques used to secure an enterprise's environment. Topics include threat prioritization and mitigation; social engineering and security policies; encryption and cryptography; virtual private networks, wireless and mobile device management; antivirus, intrusion detection and protection systems; and firewalls and proxy servers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6860 - Ethical Hacking Concepts and Methodologies

From a technical perspective, organizations need to know how hackers work so that they can build their security around it and take preemptive measures against future attacks. The goal of the ethical hacking is to understand current exploits, and assess weaknesses and vulnerabilities of various organizational information systems by attacking them within legal limits. This course is designed to provide students an insight of current hacking tools and techniques used by hackers and security professionals to break into any computer systems. Throughout the course, students will engage in offensive and defensive hands-on exercises stressing ethical hacking and penetration testing that will be conducted in a vendor-neutral virtual environment. Topics include security threats and attack vectors, footprinting and reconnaissance, network scanning and enumeration techniques, vulnerability assessment, system hacking, malware threat analysis, social engineering, attack and defense strategies in emerging technologies. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6865 - Digital Forensic Analysis

This is an introductory course in collecting, examining, and preserving evidence involving digital devices. This course examines the issues, tools, and control techniques needed to successfully investigate illegal or malicious activities facilitated through the use of information technology. The tools of collecting, examining, and evaluating data in an effort to establish intent, culpability, motive, means, methods, and loss resulting from these crimes will be examined. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6870 - Securing Information Assets

This course concentrates on the identification of information assets and the techniques used to protect them from unauthorized access. Topics include laptops, desktop and server vulnerabilities; network vulnerabilities; extranet and intranet management; incident response and management; web site and web services management; virtualization in the data center; and cloud computing security. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6875 - Protecting Information Assets

This course illustrates how information assets can be subjected to internal and external attacks and presents techniques used to secure them from unauthorized access. Topics include sub-networking for guest and vendor access; managing mixed operating system environments; data at rest and data in-transit; database inference; network management systems and security; information assurance tools and techniques. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6880 - Intrusion Detection and Incident Response

A topic of increasing importance and interest in the world of information systems and business is malicious intruder detection and the response procedures required to secure business systems once an intrusion has occurred. It is critical that the organizations dependent on information technology have incident handling procedures when computer intrusions occur. By having proper incident response procedures, organizations can quickly recover from intrusions and where feasible bring perpetrators to justice. This course will provide the student the opportunity to learn about the elements that comprise Intrusion Detection and Incident Response. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6885 - Ethics: A Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Cross-listed with MGMT 3420, MGMT 6420, ISMG 4785. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6890 - IT Risk Management

This course provides an overview of IT risk management practices. Students will learn the elements of risk management and the data necessary for performing an effective risk assessment. Various risk management models will be introduced to demonstrate the methods that can be implemented to achieve Confidentiality, Integrity, and Availability of information systems. This class uses hands-on labs to give students real-world practice utilizing Security Information and Event Management (SIEM) software to gain an understanding of how to detect and respond to a cyber threat. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of

Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6895 - Digital Forensic Analysis II

This course examines advanced digital forensic analysis topics, tools, techniques, and control mechanisms. Advanced topics include operating system artifacts, anti-forensics, mobile and embedded devices, and volatile memory forensics. Students will gain experience with state-of-the-art forensics tools and techniques needed to successfully investigate illegal activities perpetuated through the use of information technology. Prereq: ISMG 6860 and ISMG 6865. Restriction: Restricted to Graduate Business School students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6910 - Design Science Practicum

This is designed to be one of the final courses in the MS Information Systems degree. "Design Thinking" with user-centered perspectives will serve as a guiding principle to challenge assumptions and refine business problems to perform the final project. The instructor will provide students with tools and methods to identify, define and solve problems. Active discussion and creative presentation are core activities of this capstone course. Students will integrate what they have learned into a final project that can be either real-world problem designed in collaboration with an organization or a research paper on an emerging topic in the field. The final project will have multiple deliverables including a paper and a professional presentation to stakeholders who are directly related with the business problems defined in the project. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 6950 - Master's Thesis

Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

ISMG 7001 - AI-Based Decision Making

Introduces decision making concepts. It covers a range of approaches, techniques and tools for decision aiding and describes how they can be used to support decision processes. The topics include human decision making, decision support systems, knowledge-based systems, and AI methods that support decision making, like machine learning, Bayesian networks and association rules. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7002 - Computer Security

A broad overview of computer security, roughly divided into three unequal components: a) the history of codes and ciphers; b) basic cryptographic techniques, for example, symmetric cryptography, authentication techniques, and asymmetric cryptosystems, and: c) applications to current and future computer-related technologies, for example, network security, wireless communication, quantum cryptography, and more. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7002. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 7200 - Advances In Management Information Systems

Provides an introduction to research methodologies engaged in Management Information System Research, including measurement, sampling, survey research, experiments, quasi-experiments and some qualitative research methods. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7200. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 7208 - Philosophy of Information Systems Research

This course surveys the philosophical foundations that underlie the development of IS theories, research methods and measurements. The focus is placed on intensive and rigorous readings and critiques of key literature at the intersection of philosophy, sociology, history and information systems. Upon the completion of this course, students are expected to have enhanced capabilities to discern the ontological and epistemological boundaries of various IS theories and research methods so that they can carry out IS research with informed knowledge. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 7210 - Topics In Analytical Research In Management Information Systems

Provides a detailed coverage of selected analytical research in information systems. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7210. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

ISMG 7211 - Topics In Behavioral and Organizational Research In Management Information Systems

Provides a detailed coverage of selected behavioral and organizational research in information systems. Restrictions: Restricted to PhD majors within the Business School and within the

College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7211. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7212 - Strategic and Organizational Research in IS

This course examines concepts in information technology with an emphasis on organizations, organizational strategy, and competitive advantage. Using a seminar method, students will be introduced to foundational concepts and current knowledge in the IT-based research areas of information and organizational economics, boundaries and markets, firm performance, organizational capabilities, innovation, organizational design and management mechanisms, and the challenges to achieving competitive advantage over competitors. Through completion of this course, students should acquire the ability to evaluate organization-focused IT research and identify valued questions that can be examined in future research. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7214 - Mixed Methods Research

This course focuses on techniques for designing and executing mixed methods research in information systems area. Students will review the philosophical foundations of both qualitative and quantitative foundation. Basic practice, effective use and avoidance of pitfalls in mixed methods approach will be discussed. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7220 - Research methods: Design and Analysis

Research methods: Design and Analysis. Topics include: research design, approaches to gathering data; sampling methods; linear multivariate analysis methods emphasizing structural equations models; and a brief survey of other methods such as cluster analysis, multidimensional scaling, methods such as neural nets, CART and/or genetic algorithms. While much of the material is of general interest, the course emphasizes methods and situations to prepare students in the CS/IS Ph.D. program for research in their field(s). The course includes student projects involving the analysis of data using appropriate software, whose results are presented to the class. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with DSCI 6220. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7551 - Parallel and Distributed Systems

Examines a range of topics involving parallel and distributed systems to improve computational performance. Topics include parallel and distributed programming languages, architectures, networks, algorithms and applications. Restrictions: Restricted to PhD majors within the

Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7551. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7552 - Advanced Topics in Parallel Processing

Examines the advances of sequential computers for gaining speed and application of these techniques to high-speed supercomputers of today. Programming methodologies of distributed and shared memory multiprocessors, vector processors and systolic arrays are compared. Performance analysis methods for architectures and programs are described. Restrictions: Restricted to PhD majors within the Business School and within the College of Engineering, Design and Computing, PHCS PhD majors and PHIS PhD majors. Cross-listed with CSCI 7552. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7574 - Advanced Topics in Operating Systems

Covers the advanced topics in operating systems by examining functionality and performance issues in CPU Scheduling, communications, distributed file systems, distributed operating systems, shared-memory multiprocessors and real-time operating systems. In addition to studying papers, reviews, and presentations, students carry out a semester long team project within the scope of one of the above topics. Prereqs: CSCI 3453 or CSCI 5573. Cross-listed with CSCI 7574. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7582 - Artificial Intelligence

Approaches to design of systems for solving problems usually solved by humans, especially those related to intelligent decision making. Emphasis on various types of knowledge representation. Cross-listed with CSCI 7582. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7654 - Algorithms For Communication Networks

Algorithmic and mathematical underpinnings of communication networks. A taxonomy of data-packet networks depending on modes of communication: Fixed-Interconnection networks, radio networks and multiple-access channel. Algorithms to implement packet routing, broadcasting and conflict resolution. Prereq: CSCI 5451. Cross-listed with CSCI 7654. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7765 - Computer Networks

An in-depth study of active research topics in computer networks. Topics include: Internet protocols, TCP/UDP, congestion and flow control, IP routings, mobile IP, P2P overlay networks, network security, performance, and other current research topics. Prereq: Graduate Standing. Cross-listed with CSCI 7765. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7799 - Topics in Network Computing

Studies the active research topics in network based computing such as Cluster, Grid computing, P2P Computing, Pervasive Computing. Workflow system and Cloud Computing. Students will study key papers in the literature, and submit a research term project. Prereq: Graduate Standing. Cross-listed with CSCI 7799. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7800 - Special Topics

A variety of advanced topics are offered at the Ph.D. level in this course. Consult the current 'Schedule Planner' for semester offering. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMG 7840 - Independent Study: Pre-Dissertation Research

Conduct pre-dissertation research under the supervision of a faculty member. Prereq: BUSN 6530. Repeatable. Max Hours: 18 Credits. **Semester Hours:** 1 to 9

ISMG 8990 - Dissertation Development

Supports development of a dissertation in conjunction with a student's advisor. Prereq: Completion of first year and second year papers (ISMG 7840). Restrictions: Restricted to graduate majors within the Business School, graduate majors within the College of Engineering, Design and Computing, PHCS PhD majors and PhD majors. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

Initial Teacher Education

ITED 4700 - Instructional Teamwork Academy

The academy consists of four modules of varying length for a total of 15 clock hours of instructional time. The course consists of introductory material regarding teamwork, delineation of roles and responsibilities, classroom instruction, and behavior management. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4710 - Student Supervision Academy

The focus of the 15 clock hour academy is the effective management of large groups of students on playgrounds, in lunchrooms, halls, locker rooms, parking lots where buses are loading, on buses and in other instructional settings. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4720 - Interpersonal Skills Academy

The focus of this 15 hour academy is on developing effective interpersonal skills that are necessary for working as part of a team. Throughout this academy importance of issues of diversity based on culture, experience and gender in communication and conflict resolution processes is highlighted. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4730 - Personal Growth and Development Academy

This 15 contact hour academy covers self-appraisals, participation in the evaluation process and plan for continued professional growth and development, stress-management strategies and using creativity in dealing with problematic situations. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4740 - Behavior Management

This academy gives the paraeducator knowledge and skill in instructional methods that support students who have challenging behaviors in inclusive classrooms, resource rooms, self-contained classrooms, domestic settings, and in the community. These modules focus on the interactions that paraeducators have with students whose behaviors are challenging and on the role they play in assisting the professional members of their team with behavior challenges. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4750 - Instructional Strategies Academy

This academy gives the paraeducator knowledge and skills in analyzing the teaching environment and individual student needs for the particular level of support, degree of adaptation or accommodation or modification and instructional method that would best facilitate learning. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4760 - Instructional Technology Academy

This 15 contact hour academy is intended to provide paraeducators with skills in operating typical school-wide technologies. The focus is on examining the types of technology used daily, as well as those types that they may not currently have skills in using but which can broaden their repertoire of available skills. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4770 - Vocabulary and Comprehension

Paraeducators are provided with the skills needed to assist classroom teachers in meeting literacy needs of students in the areas of vocabulary and comprehension. Skills applicable to assisting diverse populations such as special education, Title 1, ELA, and General Education. Max hours: 1 Credit. **Semester Hours:** 1 to 1

ITED 4780 - Assisting with Phonemic Awareness and Phonics in the Classroom

This academy provides the paraeducator with skills and techniques needed to assist literacy needs of diverse populations of students with phonemic awareness and phonics as it relates to the early, emergent and fluent reader. Max hours: 1 Credit. **Semester Hours: 1 to 1**

ITED 4790 - Assisting with Reading Fluency in the Classroom

This academy provides the paraeducator with skills needed to assist literacy needs of diverse populations of students in the area of reading fluency. It covers important fluency concepts and terms and the use of a variety of research-based instructional techniques that improve fluency at the word, phrase, sentence and connected text levels. Max hours: 1 Credit. **Semester Hours: 1 to 1**

ITED 4800 - Grades K-4 Mathematics

This academy is designed to provide paraeducators with the skills and knowledge needed to assist students, grades K through four, with mathematics skills taught in the classroom. The course content is designed and adapted from standards recommended by the National Council of Teachers of Mathematics. It includes the specific skill building area of number sense, computational techniques, algebraic thinking, geometry, measurement, data and probability as they apply to grades K-4 learners. Max hours: 1 Credit. **Semester Hours: 1 to 1**

ITED 4810 - Number Theory and Rational Numbers

This academy provides paraeducators with the skills and knowledge needed to assist students with specific mathematics skills typically taught in grades five through eight. This academy solidifies the concepts learned in assisting with K-4 math and provides a base for assisting with high school mathematics. It includes the specific skill building areas of number sense; computational techniques for fractions, decimals and percents and their related applications as they apply to intermediate and middle school learners. The course content is designed and adapted from the standards recommended by the National Council of Teachers of Mathematics. Max hours: 1 Credit. **Semester Hours: 1 to 1**

ITED 4820 - Algebraic Concepts and Spatial Reasoning

This academy provides paraeducators with the skills and knowledge needed to assist students, grades 5-8, with the mathematics skills taught in the classroom. The course content is designed and adapted from standards recommended by the National Council of Teachers of Mathematics. It includes the specific skill building areas of real number building properties; graphical representations; algebraic concepts and problem solving; data and probability; and spatial reasoning skills as they apply to intermediate and middle school learners. Max hours: 1 Credit. **Semester Hours: 1 to 1**

ITED 5022 - Learning and Classroom Management Strategies for Secondary Schools

Provides knowledge to create and manage classrooms conducive to the well-being and learning of a diverse student population. Included are instructional strategies for addressing content standards, managing curriculum, instruction, assessments, classrooms, and individual behaviors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ITED 5023 - Literacy Strategies for Secondary Schools

Provides knowledge and practice using specific literacy methods and assessment, to enhance content learning, and meet reading and writing standards. Instructional strategies for special needs and language-minority students are also emphasized. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ITED 5025 - Reading Instruction and Assessment K-5

Using and expanding upon background knowledge from prerequisites, participants learn about specific reading instruction and assessment routines and techniques. Through guided in-school placements, student's link course readings, discussion and practice, focus on improving their instruction, and the assessment or instruction cycle. Prereq: ITED 5000, 5010 and 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ITED 5800 - Special Topics in Education

Addresses a specific topic that is current and relevant to the needs of a specific group of educators and/or an educational context. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 4

ITED 5840 - Independent Study

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

Instructional Technology

INTE 2000 - Digital Teaching and Learning

Survey of technology for: (1) your own learning, informally and in classes; (2) your students' learning when you become a teacher; and (3) sharing with peers and colleagues. Use tools to address problems of equity, access, and learning needs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 2500 - Digital Media and Learning

Digital media have transformed where, how, and why people learn. This course examines theoretical foundations and contemporary developments in digital media and learning.

Students will analyze, design, and enact projects exemplifying topics such as civic media, game-based and mobile learning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4000 - Maker Studio

The maker studio is a collaborative practicum within the context of makerculture, projectbased learning, and learning experience design. The course focuses on the practical translation of learning design theory to learning design reality, presenting learners with challenges to be resolved with creative solutions. Cross-listed with INTE 5000. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4300 - Media Literacy

In this course students learn to create, use, extend, and evaluate media products to support decision-making and real world problem-solving. Students also become more aware of the significant role of mass media, popular culture, and digital media in our lives. Cross listed with INTE 5300. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4320 - Games and Learning

This course examines the use of games for learning and education across formal and informal environments. Students will survey contemporary learning theory, media, trends, and challenges related to designing and playing games in informal, community-based, online, and school settings. Cross listed with INTE 5320. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4340 - Learning with Digital Stories

This course reviews the uses of digital storytelling for learning. Develop and publish a short digital story that tells something important about you and your interests. Explore ways that creating or using digital stories can aid learning and personal growth. Cross-listed with INTE 5340. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4665 - Learning with Social Media and Networking

The focus of this course is on how educators leverage networked social tools, technologies, and environments to address educational needs, opportunities, and problems of practice; and establish and nurture their own professional learning through participation in digital cultures. Cross-listed with INTE 5665. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 4680 - Producing Media for Learning

Students develop and integrate media resources into eLearning environments, applying principles of media selection and multimedia learning. Students explore a variety of tools for producing audio, video, and multimedia content and examine ways to enhance eLearning courses through multimedia presentation and engagement resources. Cross-listed with INTE 5680. Max hours: 3 Credit Hours. **Semester Hours:** 3 to 3

INTE 4711 - Creative Designs for Instructional Materials

This course is a project-based exploration of design theories, principles, and best practices for communicating information to diverse learning audiences. Students apply unique design approaches and formats to the creation of materials for teaching, learning, and being of service to underrepresented communities. Cross-listed with INTE 5711. Restriction: Restricted to undergraduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5000 - Design Thinking and Educational Innovation

Design thinking is a creative, human-centered approach to exploring and solving professional and community-based problems of practice. In this studio-based course students will cultivate academic and community partnerships, design innovative media and experiences, and support diverse learning opportunities across settings. Cross-listed with INTE 4000. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5100 - Planning and Designing for Instruction

Instructional design is the process used to analyze, design, develop, and evaluate learning solutions. You will identify a gap in learning or performance and design a learning solution in the form of courses units, modules, and other instructional resources. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5150 - Engaging in Education Advocacy

This course will look at the theoretical foundations and critical issues of advocacy, elements of advocacy planning, and strategies for action. You will deepen your understanding of advocacy tools, processes and models in an effort to help you imagine how to utilize advocacy in your own practice. A primary focus will be on the connection of community organizations and schools. Cross-listed with INTE 7150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5200 - Crafting eLearning Experience

This course helps educators transition to teaching online. Create online learning activities, assessments, and resources. Learn how to establish a strong online teaching presence. Explore blended learning environments, use of set curriculum, open educational resources (OER), family support, communication strategies, digital citizenship, and accessibility concerns. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5250 - Teaching Strategies for Online and Blended Learning

This course provides a foundation for effective online teaching strategies. Learning essentials include: affording more reflective, engaging, inventive, and successful online learning experiences; fostering improved presence; employing skilled management techniques; and unpacking tools, habits, and processes for effective learning. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5300 - Media Literacy

In this course students learn to create, use, extend, and evaluate media products to support decision-making and real world problem-solving. Students also become more aware of the significant role of mass media, popular culture, and digital media in our lives. Cross listed with INTE 4300. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5320 - Games and Learning

This course examines the use of games for learning and education across formal and informal environments. Students will survey contemporary learning theory, media, trends, and challenges related to designing and playing games in informal, community-based, online, and school settings. Cross listed with INTE 4320. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5340 - Learning with Digital Stories

This course reviews the uses of digital storytelling for learning. Develop and publish a short digital story that tells something important about you and your interests. Explore ways that creating or using digital stories can aid learning and personal growth. Cross-listed with INTE 4340. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5660 - Developing Self-Paced Online Modules

Students use a variety of tools and strategies to develop self-paced eLearning courseware, such as tutorials. The course covers critical aspects of the instructional development process that support the creation of effective self-paced online learning experiences, materials and resources. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5665 - Learning with Social Media and Networking

The focus of this course is on how educators leverage networked social tools, technologies, and environments to address educational needs, opportunities, and problems of practice; and establish and nurture their own professional learning through participation in digital cultures. Cross-listed with INTE 4665. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5670 - Creating Synchronous eLearning Experiences

Webinars and other live online events are an increasingly popular approach to the delivery of learning and professional development opportunities. Informed by theory and research, students plan for and facilitate live learning events delivered via synchronous online technologies. Restriction: Restricted to graduate level students. Max hours: 3 Credits.

Semester Hours: 3 to 3

INTE 5680 - Producing Media for Learning

Students develop and integrate media resources into eLearning environments, applying principles of media selection and multimedia learning. Students explore a variety of tools for producing audio, video, and multimedia content and examine ways to enhance eLearning courses through multimedia presentation and engagement resources. Cross-listed with INTE 4680. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5711 - Creative Designs for Instructional Materials

This course is a project-based exploration of design theories, principles, and best practices for communicating information to diverse learning audiences. Students apply unique design approaches and formats to the creation of materials for teaching, learning, and being of service to underrepresented communities. Cross-listed with INTE 4711. Restriction: Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 5830 - Workshop: Learning Technologies

Specific titles vary depending upon the specific skill areas within learning technologies. Restriction: Restricted to graduate level students. Repeatable. Max Hours: 12 Credits.

Semester Hours: 0.5 to 4

INTE 5840 - Independent Study: Learning Technologies

Restriction: Restricted to graduate level students. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

INTE 5990 - Special Topics: Learning Technologies

Restriction: Restricted to graduate level students. Repeatable. Max Hours: 30 Credits.

Semester Hours: 1 to 6

INTE 5998 - Professional Development Activities

Provides guidance for professional development through participation in appropriate state, regional, and national conferences. Meet and engage with leaders in the field while upgrading

professional knowledge and skills. Restriction: Restricted to graduate level students. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 2

INTE 6720 - Research in Learning Design and Technology

Analysis, evaluation, and production of research in instructional technology. Methods for observing instruction, assessing learning, and collecting participants reports to improve instruction. Development of recommendations for action based on research findings. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 6750 - Trends and Issues in Learning Design and Technology

This course examines definitions, history, core concepts, and current trends and issues related to the practice of instructional technology. Topics include instructional systems design, theories of learning and instruction, change management, performance improvement, emerging technologies, equity and access, and mobile learning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 6840 - Independent Study: Learning Technologies

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

INTE 6930 - Internship: Learning Technologies

Placement in a business, school or field setting where professional skills are applied to assess needs, design, develop and evaluate an instructional system, and provide leadership for change. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

INTE 6999 - Leadership for Technology Innovation

This course examines principles and strategies for leadership in a school, library, district, or organization aiming to improve its use of educational technology. Course learning essentials include how to: deal with competing voices; promote organizational change; assess and analyze technology use; pursue continuous improvement; employ strategic planning practices; implement effective programs; ensure sound professional development; wrestle with pressing leadership challenges; and secure funding (grant writing). Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 7100 - Professional Learning and Technology

Examines research surrounding the design and delivery of professional development (PD) programs in K20 and workplace settings. Projects and activities address: adult learning; PD models; design and; performance support and evaluation; career development and digital presence; and online tools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 7110 - Mentoring, Coaching and Training

In this course students examine research surrounding the design and delivery of professional learning (PL) programs in K20 and workplace settings. Projects and activities address: adult learning; PL models; design and; performance support and evaluation; career development and digital presence; and online tools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 7130 - Professional Learning: Perspectives and Practices

In this course students develop and evaluate large-scale learning initiatives in K20 and workplace settings. Topics include: frameworks for evaluating job performance based on professional learning standards; planning, delivering, and evaluating professional learning initiatives; research models; and performance improvement tools and resources. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 7150 - Engaging in Education Advocacy

This course will look at the theoretical foundations and critical issues of advocacy, elements of advocacy planning, and strategies for action. You will deepen your understanding of advocacy tools, processes and models in an effort to help you imagine how to utilize advocacy in your own practice. A primary focus will be on the connection of community organizations and schools. Cross-listed with INTE 5150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTE 7930 - Internship: Professional Learning

Working under the direction of field and academic supervisors in field settings, contribute to projects intended to help educators and other workers improve their job performance. Apply your knowledge to complex problems of practice, thus preparing for ongoing leadership opportunities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Interdisciplinary Arts

ARTS 1000 - Arts In Our Time

Multidisciplinary course designed to introduce students to the ways in which arts work and how the arts shape our perception of the world around us. Each student selects three four-week modules designed to examine each of the disciplines of fine arts, music and theatre, in the context of the creative process, audience perception and historical perspective. Every five weeks, students from each of the modules join forces in a week of "Inter-arts" sessions -- lectures and discussions about the relationship of the arts to each other and to our contemporary culture. Topics which are addressed in the modules include such things as American musical theatre, perception of jazz, public sculpture, light as art, sonic explorations, photography, history of production design, women in American music and censorship. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARTS 1111 - First-Year Seminar

The course explores the nature of creative inspiration, its potential and implementation. Through individual and collaborative projects, students investigate the interdisciplinary composition and development of the literary, visual and performing arts and their aesthetic, social and political impact. Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARTS 1150 - Topics in Cross-Disciplinary Arts I

Designed to explore the ways in which the arts are a part of daily life. Research and observation of the variety of ways in which the arts are utilized. Prepares students to participate in special projects. Specific topics and projects change each semester. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 1400 - The Horror Film

This course is an analysis of the horror film genre and its significance as a reflection on society. It will look at both the history and development of this genre and the impact these films have had. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARTS 1500 - The Art and Entertainment Industry

This multidisciplinary course presents a structural overview of multiple arts and entertainment industries. It examines macro themes of intellectual property, audience development and artist development. The course focuses on specific sectors such as the film, music, art, broadcasting, video gaming and the internet, and the art/museum sector. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

ARTS 1700 - CMTC Topics in Transdisciplinary Practice

Specialized topics are investigated via future- and professionally-focused curricula that utilize transdisciplinary collaboration, creativity and innovative approaches to real-world problems. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 6

ARTS 2150 - Topics in Cross-Disciplinary Arts II

Provides opportunities for students to apply artists' methods and media in a non-presentation setting. Experiential research is centered around a specific topic each semester, but enable students to discover a broader understanding of the arts. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 2700 - CMTC Topics in Transdisciplinary Practice

Specialized topics are investigated via future- and professionally-focused curricula that utilize transdisciplinary collaboration, creativity and innovative approaches to real-world problems. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 6

ARTS 3150 - Topics in Cross-Disciplinary Arts III

Focuses on the ways in which the arts are engaged in communities as expressions of identity as well as agents of change. Historical research and applied projects provide a foundation for participation in designated team projects. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 3400 - World Cinema

This course will examine representative examples of films from around the world to understand the current interests and concerns of world cinema, as well as to learn what concerns various countries around the world, and how those concerns are expressed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ARTS 3700 - CMTC Topics in Transdisciplinary Practice

Specialized topics are investigated via future- and professionally-focused curricula that utilize transdisciplinary collaboration, creativity and innovative approaches to real-world problems. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ARTS 4150 - Topics in Cross-Disciplinary Arts IV

Investigates the historical and critical perspectives of the arts in a variety of contexts. Specific topics provide a focus for students to discover the ways in which the arts inform each other and are shaped by the events of the world. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 4700 - CMTC Topics in Transdisciplinary Practice

Specialized topics are investigated via future- and professionally-focused curricula that utilize transdisciplinary collaboration, creativity and innovative approaches to real-world problems. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

ARTS 4939 - Internship

Students build professional skills and increase their understanding of creative industries through experiential learning and course work designed to expand internship experiences into powerful learning. Assigned readings, group discussions, weekly summaries, and final paper/presentation support and reflect internship activities and build interpersonal,

organizational, and industry specific skills while increasing knowledge of business practices and professionalism. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 5000 - Topics

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

ARTS 5150 - Topics In Cross-Disciplinary Arts

Investigates the historical and critical perspectives of the arts in a variety of contexts. Specific topics provide a focus for students to discover the ways in which the arts inform each other and are shaped by the events of the world. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ARTS 5700 - CMTC Topics in Transdisciplinary Practice

Specialized topics are investigated via future- and professionally-focused curricula that utilize transdisciplinary collaboration, creativity and innovative approaches to real-world problems. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

Interdisciplinary Major Course

ISMA 1500 - Introduction to Interdisciplinary Learning

This course introduces the theories, methodologies, and practices of interdisciplinary studies through a specific theme that will focus on how to learn in an online environment and how interdisciplinary scholars combine the theories and methods of a variety of fields. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMA 2840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ISMA 3100 - Learning Across Disciplines

Examining a compelling issue, students will learn what kinds of questions require thinking beyond a single discipline, how interdisciplinary scholars combine a variety of fields, and how to approach the challenges of interdisciplinary writing. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMA 3500 - Interdisciplinary Experiential Learning

In this course, students will use the knowledge from their chosen clusters to bear on an experiential opportunity. Choosing an internship, community-based project, or job extension, students will collaborate with peers to design projects in this highly student-driven course. Prereq: ISMA 1500 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMA 3840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ISMA 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

ISMA 4500 - Interdisciplinary Learning Capstone

This course brings together students who have been working on individualized majors to share a capstone experience. The goal is for students to integrate knowledge from their cluster and apply it to a project relevant to their field of interest. Prereq: ISMA 3500 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

ISMA 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

ISMA 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

ISMA 4900 - Interdisciplinary Studies Capstone

While working with their Primary Faculty Advisors on their capstone projects, students meet to discuss their experiences and to get feedback from each other as their projects develop. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Interdisciplinary Studies

IDST 4000 - Special Topics

Cross-listed with IDST 5000. Note: May be taken more than once for credit when topics vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

IDST 4010 - Foundations of STEM Communication

This course will provide students with an introduction to STEM communication and offer opportunities for developing STEM content for a variety of audiences across multiple formats. These formats span written, oral, digital, and social media communication. Through classroom exercises and assignments, students will understand the role of communication in shaping perceptions, knowledge, decisions and ultimately realities vis-a-vis STEM. They will also learn to provide critical analysis of popular mainstream STEM communication and be able to identify basic expectations and constraints of STEM communication across audience and context. The class will explore approaches to communicating concepts in STEM disciplines to a variety of audiences through practice. Ultimately, the students will develop the skills and resources necessary to enable effective communication of complex STEM ideas to a wide range of audiences. Note: Students may not earn credit if they have already received credit for IDST topics courses with a similar title. Suggested background: Students are recommended to have completed at least one undergraduate sequence in a STEM discipline before enrolling in this course. Cross-listed with IDST 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IDST 5000 - Special Topics

Cross-listed with IDST 4000. Note: May be taken more than once for credit when topics vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

IDST 5010 - Foundations of STEM Communication

This course will provide students with an introduction to STEM communication and offer opportunities for developing STEM content for a variety of audiences across multiple formats. These formats span written, oral, digital, and social media communication. Through classroom exercises and assignments, students will understand the role of communication in shaping perceptions, knowledge, decisions and ultimately realities vis-a-vis STEM. They will also learn to provide critical analysis of popular mainstream STEM communication and be able to identify basic expectations and constraints of STEM communication across audience and context. The

class will explore approaches to communicating concepts in STEM disciplines to a variety of audiences through practice. Ultimately, the students will develop the skills and resources necessary to enable effective communication of complex STEM ideas to a wide range of audiences. Note: Students may not earn credit if they have already received credit for IDST topics courses with a similar title. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with IDST 4010. Max hours: 3 Credits.

Semester Hours: 3 to 3

International Business

INTB 1111 - International Social Entrepreneurship

The end of the 20th Century saw the rise of a powerful new force: the International Social Entrepreneur. Leveraging the power of market forces, social media, the internet, and the desire to make the world better, these people have developed powerful ways to tackle the social, economic, and environmental problems that confront us all. In this class, we will study the rise of international social entrepreneurship, and the innovative tools international social entrepreneurs have developed to address some of our most dire challenges. Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 2939 - Internshp

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

INTB 3000 - Global Perspectives

Globalization brings both opportunities and anxieties that need to be fully explored, discussed and understood both by the business and non-business student. This interdisciplinary course is designed to stimulate thought, perspective, discussion and debate for business and non-business students on issues ranging from globalization; political economy and geopolitics; the environment; cultures; finances; economic integration; trade; global regions; emerging markets; human rights; terrorism and conflict; leadership, ethics and values; entrepreneurship, to future trends in global issues. The Global Perspective course is designed (1) to increase and promote both business and non-business students' capacity for international understanding and international enterprise through the study and discussion of global business environment-related issues from multiple points of views in a neutral forum. (2) It is to provide students with the awareness that global issues cannot be viewed in isolation, Restriction: Restricted to undergraduate majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center

on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

INTB 4028 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with ENTP 4028, ENTP 6028, and INTB 6028. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 4200 - International Marketing

Studies managerial marketing policies and practices of firms marketing their products in foreign countries. Analytical survey of institutions, functions, policies, and practices in international marketing. Relates marketing activities to market structure and environment. Cross-listed with MKTG 4200. Prereq: MKTG 3000 with a C or higher. Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 4370 - International Financial Management

Financial management in the international environment. Topics include international capital movements; international operations as they affect the financial functions; foreign and international institutions; and the foreign exchange process. Also considers foreign exchange theory and risk management, financial requirements, problems, sources, and policies of firms doing business internationally. Cross-listed with FNCE 4370. Prereq: FNCE 3000 with a C or higher. Restriction: Restricted to undergraduate Business majors at junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 4400 - Environments of International Business

An overview of the environmental complexities that arise when business activities and firms cross national borders. Key international business environmental complexities associated with country differences, cross-border trade and investment, and global monetary system are examined. Prereq: MGMT 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher and SPAN-BA majors with a SPP subplan at junior level. Cross-listed with MGMT 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 4410 - Operations of International Business

Focuses on the impact of environmental factors on international business operations and the identification and analysis of complex strategic and operational issues facing business firms in

global markets. The strategies and structures of international businesses, alternative foreign market entry modes, and the unique roles of various business functions at international business firms are explained and assessed. Prereq: INTB 4400 or MGMT 4400 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with MGMT 4410. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 4840 - Independent Study

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Restriction: Restricted to undergraduate business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

INTB 4950 - Special Topics in International Business

Current topics in international business are occasionally offered. Consult the 'Schedule Planner' for specific course offerings or contact an advisor for information. Prereq: Topics vary depending on the topic and the instructor requirements. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

INTB 5800 - Special Topics in International Business

Current topics in international business are occasionally offered. Consult 'Schedule Planner' for specific course offerings or contact an advisor for information. Prereq: Topics vary depending on the topic and the instructor requirements. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

INTB 5939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. Prereq: 21 semester hours and a 3.5 grade-point average. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

INTB 6000 - Introduction to International Business

This course examines the international business environment, its impact on business operations across borders, and the international dimensions of key business and managerial functions. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6020 - Cross-Cultural Management

Focuses on the management of diverse socio-cultural and political norms and values in the global marketplace. The goal of this course is to develop skills in managing impacts of such values and norms on the effectiveness of international business operations and managerial activities. Prereq: INTB 6000 or permission of instructor. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6022 - International Business Negotiations

Examines the international dimensions of business negotiations. It addresses the impact of the cultural, legal, political environments in the negotiation process, and examines similarities and differences in negotiation styles and approaches across borders. (This course qualifies as an international elective for the MS in International Business program.) Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6024 - International Trade Finance and Management

Provides an overview of international trade finance and trade management. It examines the roles played by various parties involved in international trade, addresses key methods of international payment and related financing, and provides practical experiences on how to manage the import and export trade management process. (This course qualifies as an international elective for the MS in International Business program.) Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6026 - Marketing Challenges at the Global Frontier

Explores problems, practices, and strategies involved in marketing goods and services internationally. Emphasized analysis of uncontrollable environmental forces, including cultures, governments, legal systems, and economic conditions, as they affect international marketing planning. Emphasis on practice through the use of projects and speakers. Coreq: BUSN 6560. Instructor may waive coreq for business students. Restriction: Restricted to graduate business students or NDGR majors and a sub-plan of NBA or NBD. Note: students cannot receive credit for both MKTG 6020 and INTB 6026. Cross-listed with MKTG 6020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6028 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with ENTP 4028, ENTP 6028, and INTB 4028. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

INTB 6030 - 11-Month MBA International Business Study Abroad

The 11-Month MBA International Business Study Abroad is an experiential learning course conducted abroad. Available for 11-Month MBA students only. **Semester Hours:** 3 to 3

INTB 6040 - Managing Global Talent

This course has two objectives: (1) to understand the impact of cultural differences in the management of people in multinational firms; and (2) to compare and contrast critical human resource issues in the contexts of domestic and international operations. Topics include recruitment, staffing, training, performance appraisal, compensation, and labor and management relations in markets around the world. (This course qualifies as an international elective for the MS in International Business program.) Prereq: BUSN 6520 or BUSN 6521 or MGMT 6380 with a grade of C (2.0) or higher. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Cross-listed with MGMT 6040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6060 - The Legal Aspects of International Business

Analyzes the legal aspects of international business transactions and considers risk-reducing mechanisms such as letters of credit and arbitration. The course examines NAFTA, the European union, and other international trading structures and rules, giving the background for export or import activities. (This course qualifies as an international elective for the MS in International Business program.) Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6082 - Marketing in Emerging Markets

Explores problems, practices, and strategies involved in marketing goods and services in emerging markets. Emphasizes analysis of uncontrollable environmental forces, including cultures, governments, legal systems, and economic conditions, as they affect the marketing plan. (This course qualifies as an international elective for the MS in International Business program.) Prereq: BUSN 6560. Note: Students cannot receive credit for both MKTG 6080 and INTB 6082. Cross-listed with MKTG 6080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6094 - Marketing Issues in the Chinese Environment

This course assesses numerous marketing and marketing related topics in the Chinese environment with the objective of helping the graduate student develop managerial and marketing expertise. In specific, the course pinpoints key developments in the Chinese business environment, develops expertise in conducting market opportunity analysis, assesses market entry conditions and strategies and applies marketing mix strategies in the context of the Chinese environment. Note: It is recommended for students to take BUSN 6560 or INTB 6000

prior to this course. Cross-listed with MKTG 6094. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6200 - International Business Policy

The objective of this course is to develop competence relevant to strategy formulation and implementation in a multi-national enterprise, and in an international context. Provides theoretical knowledge, skills, and sensitivities that help deal effectively with the strategic and managerial problems of managing in a global environment. Prereq: INTB 6000 or ENTP 6826. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6370 - International Accounting

Designed to expose students to the international aspects of accounting and financial management. Includes discussion of some of the different financial accounting practices across countries; financial statement analysis in a global context. IFRS's are reviewed and compared with the requirements of US GAAP. Note: Students cannot receive credit for both ACCT 6370 and INTB 6370. Prereq: BUSN 6550 or ACCT 6031. Cross-listed with ACCT 6370 and ACCT 4370. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6372 - International Financial Management

Addresses financial management in an international context that considers international capital movements and foreign exchange problems, and international operations as they affect financial functions. It reviews foreign and international institutions and the foreign exchange process and considers financial requirements, problems, sources, and policies of firms doing business internationally. Meets concurrently with FNCE 6370. Prereq: BUSN 6640. Cross-listed with FNCE 6370. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6411 - International Corporate Governance

Discusses the structure and goals of the modern corporation, the primary governance mechanisms used to help companies achieve these goals, how and why these roles, goals, and mechanisms vary across nations. The topics to be covered in the course include how share ownership, particularly by institutional shareholders, managerial compensation and board of director activities are being used to improve corporate governance systems. The class compares the Codes of Best Governance Practices from several countries as well as recent innovations in individual company governance rating systems. (This course qualifies as an international elective for the MS in International Business program.) Prereq: BUSN 6640. Note: Students cannot receive credit for both FNCE 6411 and INTB 6411. Cross-listed with FNCE 6411. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6460 - Emerging Market Finance

This course aims to explore key emerging market finance issues from the perspectives of corporations, investors and markets. Emerging economies are deemed to be the engine of growth opportunities in the world economy. However, compared with developed markets, they typically have some unique features in their economic systems and financial markets, and thus different risk and return characteristics, leading to special considerations of capital budgeting, financing and investing in these economies. This course is to help develop a better understanding of financial markets, corporate finance and investments in emerging economies, with case studies on some major emerging markets (e.g., China, India). Prereq: BUSN 6640. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with FNCE 6460. Max hours: 3 Credits. **Semester Hours: 3 to 3**

INTB 6500 - International Business Consulting

This action-learning course provides students the opportunity to work with and consult for a company at the senior executive level (e.g., CEO, Business Unit heads) in order to add value to the firm's international business. Students will apply international business principles and practices to address a strategic, functional, operational, or geographic opportunity facing a sponsoring organization. In addition, students will gain "on the job learning" of key protocols in an international business consulting context. Note: Because the topics change each term, student may take this course twice. Work with an advisor to make sure there is room in your degree plan before enrolling in the second course. Repeatable. Max Hours: 6 Credits. **Semester Hours: 3 to 3**

INTB 6730 - Supply Chain Analytics

Introduces the design, analysis, management, and control of supply chains. Because of continuing advances in globalization, sustainability, and information technology, course emphasis will include integration of processes and systems, relationship management of upstream and downstream players, and strategies that incorporate current and future trends. Cross-listed with BANA 6730. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

INTB 6750 - Research Methods in International Business

Focuses on three major issues: (1) research design from an international management perspective (e.g., qualitative, quantitative and ethnographic); (2) topical issues (e.g., culture, international negotiations, mergers and alliances); (3) trends in international business research (e.g., cross-national project teams, emerging theoretical perspectives). This course qualifies as an international elective for the MS in International Business program. Note: Available to students as Independent Study only. Prereq: INTB 6000 and BUSN 6530 or equivalent. Max hours: 3 Credits. **Semester Hours: 3 to 3**

INTB 6800 - Special Topics in International Business

Current topics in international business are occasionally offered. This includes international field study courses. Consult the 'Schedule Planner' for specific course offerings or contact an advisor for information. (This course qualifies as an international elective for the MS in International Business program.) Prereq: Topics vary depending on topic and instructor requirements. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

INTB 6840 - Independent Study

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. (This course qualifies as an international elective for the MS in International Business program.) Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 8

INTB 6870 - Global Climate Change

Global climate change may be one of the most important challenges facing business in the 21st century. This course will introduce the potential impacts of climate, then discuss possible regulatory responses to and business risks and opportunities that may emerge if climate change occurs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTB 6950 - Master's Thesis

Prereq: INTB 6750. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

International Studies

INTS 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTS 2020 - Foundations of International Studies

Through a combination of lecture, discussion, and hands-on learning activities, students will develop skills and abilities necessary for academic and professional success in the international studies arena, especially critical thinking, connection building, conceptual understanding, and cultural awareness. The course is structured in three phases: (1) core interdisciplinary concepts; (2) regional foci; and (3) global issues. Note: Please add course note: Students may not receive credit for INTS 2020, if they have already received credit for INTS 2000. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTS 3939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

INTS 4611 - Rhetoric of Global Food Policy

This course examines stakeholder relations, agendas, and debates about global food policy using rhetorical concepts and analysis. Topics include the framing of debates about agriculture, hunger and obesity, the greening of food governance, sustainable food systems, and more. This course fulfills the communication department's pathway course requirement. Cross-listed with COMM 4611. Prereq: Junior standing or higher. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTS 4700 - Special Topics

Note: May be taken more than once for credit when topics vary. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

INTS 4840 - Independent Study

Directed study based on a specific subfield of international studies. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

INTS 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

INTS 4990 - International Studies Capstone

A capstone course for students in the International Studies major, the class is designed to facilitate independent student research in the field of international studies and assist students in developing advanced writing and communication skills. Prereq: Students in the course must be declared international studies majors in their final year of coursework (senior status is

recommended preparation). Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

INTS 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with INTS 5995. Term offered: summer. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

INTS 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with INTS 4995. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

inWorks Innovation Initiative

IWKS 2100 - Human-Centered Design, Innovation and Prototyping

Introduces collaborative interdisciplinary design and innovation from a human perspective. Using the wide array of Inworks prototyping facilities, teams of students will design and implement human-oriented projects of increasing scale and complexity, in the process acquiring essential innovation and problem-solving skills. Cross-listed with ARCH 3705. Prereq: none. Participants of all backgrounds are encouraged to register; no previous design or prototyping experience is required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 2300 - Computational Foundations of Innovation

Introduces fundamental principles of computing related to innovation. Students learn to give objects interesting behaviors by writing simple programs. Class discussions and readings introduce important computing ideas and concepts. Prepares students for more advanced IWKS courses that require knowledge of computing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3100 - 3D Design, Computation and Prototyping

Introduces the design and computer-controlled fabrication of three-dimensional objects using both additive (3D printing) and subtractive (laser cutter, CNC router/mill) processes. Increasingly complex projects throughout the semester using various CAD/CAM software tools will explore design strategies for digital fabrication. Prerequisites: None; no previous design or prototyping experience is expected or required. Cross-listed with IWKS 5170 and ARCH 3706. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3180 - Inworks: Choose Your Own Adventure: Experiences in Design, Innovation and Prototyping

Provides weekly speakers, workshops and other experiences that educate and enrich across the design, innovation and prototyping landscape. Students may choose to participate in any five (for one credit), ten (for two credits) or fifteen (for three credits) activities. Each week, participating students will attend the scheduled activity, and then create a meaningful response that reflects the impact of that activity on their thinking or practice. Prerequisites: None. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

IWKS 3200 - Data Science for Innovators

Introduces techniques for capturing, processing, visualizing, and making meaning out of large datasets. With the exponential growth and decreasing cost of data collection tools such as genome sequencing, social media, crowd sourced data, mobile phone apps, remote sensors, and data from other publically available sources, innovators are able to harness a rich array of data in their designs. This course will introduce the fundamentals of working with online data and large data sets, introduce widely used data analysis and visualization tools, and culminate in a cumulative project that incorporates data in a significant way. Suggested Background: IWKS 2300 or similar experience. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3300 - NAND to Tetris: Foundations of Computer Systems

Introduces the principles of computer systems that underlie the global information age. Starting from first principles, students gradually construct a simple hardware platform and a modern software hierarchy, yielding a working basic yet powerful computer system. Only introductory programming experience is required. Suggested Background: IWKS 2300 or similar computing experience. Cross-listed with CSCI 2940. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3400 - Game Design and Development I

Introduces principles of computer game development, building on the rich interplay of computer science, graphics design, physics, music, and narrative. Students develop interactive 2D and 3D games and a final project. Substantial software development involved, but requires only introductory programming experience. Suggested Background: IWKS 2300 or similar computing experience. Cross-listed with CSCI 2941. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3540 - Synthetic Biology for Innovators

Introduces the fundamentals of synthetic biology for those who seek to use it as tool for innovation. Synthetic biology allows us to engineer new biological systems and redesign existing biological components by integrating aspects of biotechnology, evolutionary and

molecular biology, systems biology, computer engineering, computational biology, and genetic engineering. Advancement in technological tools and techniques make this material accessible to motivated individuals from many disciplines, and no biology background is required.

Culminates with a final team project focused on designing synthetic biology solutions that address human need. Suggested Background: None. No previous background in biology is required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3550 - Innovation Law and Policy

Introduces legal and regulatory foundations related to innovation, including intellectual property, telecommunications, electronic commerce, the Internet, biotechnology, ethical and equity considerations, and financing. These issues are examined from the perspectives of the legal, business, capital, development, consumer, and policy-making communities. Suggested background: IWKS 2100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3600 - Innovating for the Developing World

Explores the design and development of products and services that can be sustainably and gainfully used by the world's poorest citizens. Students in interdisciplinary teams will design, implement and evaluate viable solutions to a real problem faced by people in the developing world. The goal is to develop an understanding of the extraordinary challenges faced by individuals for whom basic survival is not a given, and the knowledge and skills necessary to create designs that respond appropriately to those unique circumstances. Provides a foundation for further study and practice in the area of technology and development. Suggested Background: IWKS 2100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3620 - Mobile App Development

Introduces mobile application development, including front-end mobile application clients, data handling, connectivity to back-end services and cloud hosting. The course provides an overview and comparison of technical approaches employed by Apple iOS, Google Android, and cross-platform development environments. Students will install, develop, test, and distribute mobile applications while addressing challenges associated with development for any mobile platform: limited screen size and memory, gesture based GUI, varying connectivity, and the wide variety of target mobile devices. Suggested Background: IWKS 2300 or similar computing experience. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 3700 - Innovation and Society

Analyzes impact of innovative design on work, sense of self and social systems, in education, healthcare, finance, and other sectors. Investigates how people customize / "hack" technologies they use, and the moral / ethical implications of being designers. Students will research the impact of an innovation of their choice and share via essays, models, videos, or

another medium of their choice. Suggested Background: None. Max hours: 3 Credits.

Semester Hours: 3 to 3

IWKS 3850 - Product Design

Explores the design requirements associated with creating a product that will be manufactured in large quantities and used by potentially thousands of users. These requirements are often very different from those associated with creating a working prototype. This gap between prototype creation and starting a business offers an interesting and unique set of design challenges. As part of the course, teams of students will engage in a realistic product design cycle. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4100 - Advanced Human-Centered Design and Prototyping

Explores user-centered design paradigm from a broad perspective, emphasizing how user research and prototype assessment can be integrated into different phases of the design process. Teams of students develop expertise in the design, development, and critique of solutions to important human problems. Suggested background: IWKS 2100 & 3100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4120 - IoT: The Internet of Things

In a world where everything is connected to everything else, how does that work? This course introduces techniques for (1) designing systems that can sense the environment and respond to humans in meaningful ways and (2) creating networks of physical objects that collect and exchange data. Such systems might include wearable sensors, interactive art, and Internet-connected home devices. Working individually and in teams, students will develop projects using Inworks' materials, devices, and fabrication tools. The course involves considerable prototyping and software development but requires only introductory programming and prototyping experience. Suggested Background: IWKS 2100 & 2300. Cross-listed with CSCI 2942. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4450 - Game Design and Development II

Continuation of IWKS 3400, with increased emphasis on more advanced techniques including 3D rendering; lighting simulation; vertex, pixel and geometry shaders; shadows; terrain building; bump, parallax, and parallax occlusion mapping; shading; ray tracing; bloom; and high dynamic range lighting. Suggested Background: IWKS 3400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4500 - Bio-Design and Innovation

Introduces the biodesign innovation process, which involves identifying important human needs and inventing meaningful solutions to address them. The course examines how

biotechnology and bio-inspired innovation improve the form and function of our design world through innovative materials and novel approaches to developing buildings, food, medicine, infrastructure and more. Readings and in-class debates will raise critical issues in contemporary bioethics. For their final projects, students will choose to create and prototype a speculative biodesign concept, or work in the bio lab on the development of a real-world biodesign solution of their choosing. Suggested Background: IWKS 2100 & 3100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4520 - Design for Healthful Human Longevity

Introduces contemporary studies, therapies, theories, and research on aging, age related disease, and innovations for longer healthier human lives. Guest lecturers, seminar discussions, readings and discussions will inform student projects that address challenges to prolonged, healthy, disease-free lives. Suggested Background: IWKS 2100 and 3700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4650 - Innovating for the Developing World

Explores the design of products and services that can be sustainably used by the world's poorest citizens. Students design, implement and evaluate solutions to real problems in the developing world. Provides a foundation for further study and practice. Suggested Background: IWKS 3500 & 3600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4680 - Case Studies in Design

Explores why some projects succeed and others fail. Many human-centered interventions fail to meet their designers' objectives, reflecting the unique challenges associated with matching human need with feasibility. Explores how innovators can increase their chances for success by examining several successful (and unsuccessful) designs. Suggested Background: IWKS 2100 & 3700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4700 - Unconventional Design for Online Learners

Explores how design-thinking and user-centered design can be used to develop and improve technology-mediated learning. Using a team-based project-oriented approach, students design, develop, and evaluate new modalities for digital education. Projects include ways to educate both general and targeted audiences. Suggested Background: IWKS 3700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 4800 - StartUp: Creating a New Venture from Scratch

Teams of students are guided to create and launch a new company in a single semester. Culminates in a "pitchfest" to area entrepreneurs and venture capitalists. One of two alternative capstone courses for the Inworks Minor in Design and Innovation. Requires

enrollment in the Inworks HCDI minor or certificate, or instructor permission. Suggested Background: Completion of at least three other Inworks courses. Max hours: 4 Credits. **Semester Hours:** 4 to 4

IWKS 4900 - Undergraduate Capstone

Working closely with project sponsors, students design, implement, and evaluate a project for use in local industry and non-profit organizations. One of two alternative capstone courses for the Inworks Minor in Design and Innovation. Prereq: IWKS 2100 and enrollment in the Inworks HCDI minor or certificate. Max hours: 4 Credits. **Semester Hours:** 4 to 4

IWKS 4930 - Special Topics in Human Centered Design and Innovation

Emergent issues and professional developments in design, innovation and prototyping. Consult the current online Inworks Course List for semester offerings as new special topics courses are frequently added. With permission, may be repeated for credit. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 4

IWKS 4970 - Independent Study in Human Centered Design and Innovation

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to design, innovation and prototyping. With permission, may be repeated for credit. Enrollment requires permission of an Inworks faculty member. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

IWKS 5100 - Human-Centered Design, Innovation and Prototyping

Offers a graduate-level introduction to collaborative interdisciplinary design and innovation from a human perspective, as well as introducing key theoretical and computational foundations of innovation. Using the wide array of Inworks prototyping facilities, teams of students will design and implement human-oriented projects of increasing scale and complexity, in the process acquiring essential innovation and problem-solving skills. Prerequisite: None. No previous design or prototyping experience is expected or required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5120 - IoT: The Internet of Things

In a world where everything is connected to everything else, how does that work? This course introduces techniques for (1) designing systems that can sense the environment and respond to humans in meaningful ways and (2) creating networks of physical objects that collect and exchange data. Such systems might include wearable sensors, interactive art, and Internet-connected home devices. Working individually and in teams, students will develop projects using Inworks' materials, devices, and fabrication tools. The course involves considerable prototyping and software development but requires only introductory programming and

prototyping experience. Suggested Background: IWKS 5100 & some computing experience. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours: 3 to 3**

IWKS 5150 - Advanced Human-Centered Design and Prototyping

Graduate version of IWKS 4100. An advanced exploration of design thinking and the user-centered design paradigm from a broad range of perspectives, emphasizing how user research and prototype assessment can be integrated into different phases of the design process. Using a team-based, project-oriented approach, students will develop advanced expertise in the design, development, and critique of solutions to important human problems. The course will make full use of Inworks' prototyping facilities. Suggested Background: IWKS 5100 & 5170. Max hours: 3 Credits. **Semester Hours: 3 to 3**

IWKS 5170 - 3D Design, Computation and Prototyping

Introduces the design and computer-controlled fabrication of three-dimensional objects using both additive (3D printing) and subtractive (laser cutter, CNC router/mill) processes. Increasingly complex projects throughout the semester using various CAD/CAM software tools will explore design strategies for digital fabrication. Restriction: Restricted to students with graduate standing. Cross-listed with IWKS 3100 and ARCH 3706. Max hours: 3 Credits. **Semester Hours: 3 to 3**

IWKS 5180 - Inworks: Choose Your Own Adventure: Experiences in Design, Innovation and Prototyping

Provides weekly speakers, workshops and other experiences that educate and enrich across the design, innovation and prototyping landscape. Students may choose to participate in any five (for one credit), ten (for two credits) or fifteen (for three credits) activities. Each week, participating students will attend the scheduled activity, and then create a meaningful response that reflects the impact of that activity on their thinking or practice. Prerequisites: None. Repeatable. Max Hours: 12 Credits. **Semester Hours: 1 to 3**

IWKS 5200 - Data Science for Innovators

Graduate version of IWKS 3200. Introduces techniques for capturing, processing, visualizing, and making meaning out of large datasets. With the exponential growth and decreasing cost of data collection tools such as genome sequencing, social media, crowd sourced data, mobile phone apps, remote sensors, and data from other publically available sources, innovators are able to harness a rich array of data in their designs. This course will introduce the fundamentals of working with online data and large data sets, introduce widely used data analysis and visualization tools, and culminate in a cumulative project that incorporates data in a significant way. Suggested Background: IWKS 5350 or similar computing experience. Max hours: 3 Credits. **Semester Hours: 3 to 3**

IWKS 5300 - NAND to Tetris: Foundations of Computer Systems

Graduate version of IWKS 3300. Introduces the principles of computer systems that underlie the global information age. Starting from first principles, students gradually construct a simple hardware platform and a modern software hierarchy, yielding a working basic yet powerful computer system. Suggested Background: IWKS 2300 or similar computing experience. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5350 - Computational Foundations of Innovation

Graduate version of IWKS 2300. Introduces the technological underpinnings of modern society, introducing the fundamental principles of computing. Students create realistic artifacts, and imbue those artifacts with interesting behavior by writing computer programs in on-line virtual world similar to Second Life and for simple Arduino-connected devices. In-class and in-world discussions and readings introduce important computing ideas and concepts. Completion of this course will prepare students for more advanced IWKS graduate courses that require knowledge of computing principles and practices. Prerequisites: None. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5400 - Game Design and Development I

Graduate version of IWKS 3400. Introduces principles of computer game development, building on the rich interplay of computer science, graphics design, physics, music, and narrative. Students develop interactive 2D and 3D games and a final project. Substantial software development involved, but requires only introductory programming experience. Suggested Background: IWKS 2300 or similar computing experience. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5450 - Game Design and Development II

Graduate version of IWKS 4450. Continuation of IWKS 5400, with increased emphasis on more advanced techniques including 3D rendering; multimodal music, complex narrative, animation, non-player AI, and advanced 3D techniques including diffuse, ambient, specular, and emissive lighting; vertex, pixel and geometry shaders; shadows; terrain building; reflective and refractive lighting; bump, parallax, and parallax occlusion mapping; Phong and Gouraud shading; "cel" shading; ray tracing; bloom; and high dynamic range lighting. Suggested Background: IWKS 5400 or similar experience in game development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5500 - Bio-Design and Innovation

Introduces the biodesign innovation process, which involves identifying important human needs and inventing meaningful solutions to address them. The course examines how biotechnology and bio-inspired innovation improve the form and function of our design world

through innovative materials and novel approaches to developing buildings, food, medicine, infrastructure and more. Readings and in-class debates will raise critical issues in contemporary bioethics. For their final projects, students will choose to create and prototype a speculative biodesign concept, or work in the bio lab on the development of a real-world biodesign solution of their choosing. Suggested Background: IWKS 2100 & 3100. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5520 - Design for Healthful Human Longevity

Graduate version of IWKS 4520. Introduces contemporary studies, therapies, theories, and research on aging, age related disease, and innovations for longer healthier human lives. Guest lecturers, seminar discussions, readings and discussions will inform student projects that address challenges to prolonged, healthy, disease-free lives. Suggested Background: IWKS 5100 and 5700. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5540 - Synthetic Biology for Innovators

Graduate version of IWKS 3540. Introduces the fundamentals of synthetic biology for those who seek to use it as tool for innovation. Synthetic biology allows us to engineer new biological systems and redesign existing biological components by integrating aspects of biotechnology, evolutionary and molecular biology, systems biology, computer engineering, computational biology, and genetic engineering. Advancement in technological tools and techniques make this material accessible to motivated individuals from many disciplines, and no biology background is required. Culminates with a final team project focused on designing synthetic biology solutions that address human need. Suggested Background: None. No previous background in biology is required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5550 - Innovation Law and Policy

Graduate version of IWKS 3550. Introduces legal and regulatory foundations related to innovation, including intellectual property, telecommunications, electronic commerce, the Internet, biotechnology, ethical and equity considerations, and financing. These issues are examined from the perspectives of the legal, business, capital, development, consumer, and policy-making communities. Suggested Background: IWKS 5100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5600 - Innovating for the Developing World

Graduate version of IWKS 3600. Explores the design and development of products and services that can be sustainably and gainfully used by the world's poorest citizens. Students in interdisciplinary teams will design, implement and evaluate viable solutions to real problems faced by people in the developing world. The goal is to develop an understanding of the extraordinary challenges faced by individuals for whom basic survival is not a given, and the

knowledge and skills necessary to create designs that respond appropriately to those unique circumstances. Provides a foundation for further study and practice in the area of technology and development. Suggested Background: IWKS 5100. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5620 - Mobile App Development

Graduate version of IWKS 3620. Introduces mobile application development, including front-end mobile application clients, data handling, connectivity to back-end services and cloud hosting. The course provides an overview and comparison of technical approaches employed by Apple iOS, Google Android, and cross-platform development environments. Students will install, develop, test, and distribute mobile applications while addressing challenges associated with development for any mobile platform: limited screen size and memory, gesture based GUI, varying connectivity, and the wide variety of target mobile devices. Suggested Background: IWKS 5100 & IWKS 5350 or similar computing experience. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5650 - Innovating for the Developing World

Explores the design of products and services that can be sustainably used by the world's poorest citizens. Students design, implement and evaluate solutions to real problems in the developing world. Provides a foundation for further study and practice. Suggested Background: IWKS 5100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5680 - Case Studies in Design

Graduate version of IWKS 4680. Explores why some projects succeed and others fail. Many human-centered interventions fail to meet their designers' objectives, reflecting the unique challenges associated with matching human need with feasibility. Explores how innovators can increase their chances for success by examining several successful (and unsuccessful) designs. Suggested Background: IWKS 5100 & 5700. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5700 - Innovation and Society

Graduate version of IWKS 3700 Analyzes impact of innovative design on work, sense of self, and social systems, in education, healthcare, finance, and other sectors. Investigates how people customize / "hack" technologies they use, and the moral / ethical implications of being designers. Students will research the impact of an innovation of their choice and share via essays, models, videos, or another medium of their choice. Suggested Background: IWKS 5100. Restriction: Restricted to students with graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5750 - Critical Analysis of Design

Graduate version of IWKS 3700. Examines technologies that pervade daily life. Analyzes impact of designs on work lives, sense of self, and social systems, within education, healthcare, finance, and other sectors. Investigates how technologies are customized and ethical implications of designing systems for others. Suggested Background: IWKS 5100. Max hours: 3 Credits.

Semester Hours: 3 to 3

IWKS 5800 - StartUp: Creating New Ventures

Teams of students are guided to create and launch a new company in a single semester. Culminates in a "pitchfest" to area entrepreneurs and venture capitalists. One of two alternative capstone courses for the Inworks Minor in Design and Innovation. Restriction: Requires enrollment in the Inworks HCDI minor or certificate, or instructor permission. Suggested Background: Completion of at least three other Inworks courses. Max hours: 4 Credits. **Semester Hours:** 4 to 4

IWKS 5850 - Product Design

Graduate version of IWKS 3850. Explores the design requirements associated with creating a product that will be manufactured in large quantities and used by potentially thousands of users. These requirements are often very different from those associated with creating a working prototype. This gap between prototype creation and starting a business offers an interesting and unique set of design challenges. As part of the course, teams of students will engage in a realistic product design cycle. Max hours: 3 Credits. **Semester Hours:** 3 to 3

IWKS 5900 - Graduate Capstone

Graduate version of IWKS 4900. Working closely with project sponsors, students design, implement, and evaluate a project for use in local industry and non-profit organizations. One of two alternative capstone courses for the Inworks Graduate/Professional Certificate in Design and Innovation. Prereq: IWKS 5100 and enrollment in the Inworks graduate certificate. Max hours: 4 Credits. **Semester Hours:** 4 to 4

IWKS 5930 - Special Topics in Human Centered Design and Innovation

Emergent issues and professional developments in design, innovation and prototyping. Consult the current online Inworks Course List for semester offerings as new special topics courses are frequently added. With permission, may be repeated for credit. Restriction: Restricted to students with graduate standing. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 4

IWKS 5970 - Independent Study in Human Centered Design and Innovation

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to design, innovation and prototyping. With permission, may be repeated for credit. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 6

Landscape Architecture

LDAR 1015 - Engaging Landscapes for Wicked Change

This course will offer students the tools and perspectives to understand how landscapes impact them and others, analyze and describe the forces that inform landscape form, and propose changes to landscapes that will address the wicked problems of our time. Max Hours: 3 Credits.

LDAR 3601 - Intro to Landscape Arch: Engaging Designed Landscape

This course is an overview of the historical development, social context and contemporary practice of landscape architecture, which has existed as a profession for over 120 years and has been practiced in one form or another for millennia. Restriction: Restricted to undergrads with sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 3690 - Landscape Architecture in Other Cultures

Study abroad. Various studies of landscape architecture, architecture, urbanism, and design to destinations outside of the continental United States. Cross-listed with LDAR 6520. Restriction: Restricted to Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

LDAR 4421 - History of Landscape Architecture

Intro survey course fosters workable understanding of landscape architecture design history and theory and offers a base for understanding trends and ideas influencing contemporary practice. Emphasizes Western Europe and the United States from antiquity to early twentieth century. Prereq: Sophomore standing or higher. Cross-listed with LDAR 5521. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 4430 - Site, Society and Environment

Sites are defined by relationships within environmental and social settings. Therefore site design should be primarily ethical and secondarily technical. This course examines the implications of this idea through site methodologies, conceptual construction of site, site analysis and site typologies. Restriction: Restricted to students with sophomore standing or higher. Cross-listed with LDAR 6630. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 4435 - Community Engaged Design Practice

Obtain real-world pre-design and conceptual design experience in complex urban environments focusing on evolving trends in sustainability. Using digital trans-disciplinary learning students will develop comprehensive sustainable strategies that draw from their own sustainable philosophy developed during this class. Cross-listed with LDAR 6635 and ARCH 6257.

Restriction: Restricted to undergrads with sophomore standing or higher. Max hours: 3 Credits.
Semester Hours: 3 to 3

LDAR 4436 - Urban and Local Food Systems

In this seminar, we will examine the connections between landscape architecture and food production in cities as well as the role that food production plays in rural landscapes. The course material may be historical, theoretical, or oriented toward contemporary research. Cross-listed with LDAR 6636. Restriction: Restricted to undergrads with sophomore standing or higher. Max hours: 3 Credits **Semester Hours:** 3 to 3

LDAR 4470 - Plants in Design

Explores the challenges, opportunities and responsibilities of designing with living, growing, and ever-changing organisms. Students learn to identify plants that are commonly used in the Colorado region and the principles, theories, methods, and techniques for planting design. Restriction: Restricted to undergraduate students at a junior standing or higher. Cross-listed with LDAR 6670. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 4486 - Special Topics in Landscape Architecture

Lectures, discussion, and projects exploring topics in landscape architecture drawn from current practice, contemporary issues of design and the built environment, and/or landscape history and theory. Focus and content vary each term. Prereq: Sophomore standing or higher. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDAR 5500 - Introductory Landscape Architecture Design Studio

Introduction to basic strategies, methods and techniques of landscape architectural design and representational techniques. Explores fundamental issues of spatial form and landscape experience and meaning. Coreq: LDAR 5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5501 - Landscape Architecture Design Studio 1

Introduction to basic strategies, methods and techniques of landscape architectural design and representational techniques. Explores fundamental issues of spatial form and landscape experience and meaning. Max hours: 6 Credits. **Semester Hours:** 6 to 6

LDAR 5502 - Landscape Architecture Design Studio 2

Problem-based studio course covers strategies, methods and techniques of landscape architectural design with emphasis in more complex social and urban issues, design processes and development and the application of theory and research. Prereq: LDAR 5501 or permission of department chair. Max hours: 6 Credits. **Semester Hours:** 6 to 6

LDAR 5503 - Landscape Architecture Design Studio 3

Problem-based studio covering the approaches, techniques and means for planning and designing sites to accommodate development program on a particular site within an identifiable context. Covers issues definition, site analysis, programming, development of design strategies, evaluation site planning, and communication. Prereq: LDAR 5501 and LDAR 5502 or permission of department chair. Max hours: 6 Credits. **Semester Hours:** 6 to 6

LDAR 5510 - Graphic Media in Landscape Architecture

Introduces basic principles and methods associated with analog and digital drawing-plan, sections, perspectives, color, shading, composition and projection. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5521 - History of Landscape Architecture

Intro survey course fosters workable understanding of landscape architecture design history and theory and offers a base for understanding trends and ideas influencing contemporary practice. Emphasizes Western Europe and the United States from antiquity to early twentieth century. Cross-listed with LDAR 4421. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5530 - Form and Formation of Cities

This course investigates the origins and types of human settlements; the history of cities and urbanization; urban morphology and the evolution of the built environment; urban form principles and theory; and types of urbanism. Cross-listed with URPL 6350, URBN 6633, and ARCH 6270. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5532 - Landform Manipulation

Focuses on the fundamental technical aspects of landscape architectural design and site engineering of related topography, grading, drainage design, landform manipulation, earthwork calculations, and road alignment. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5540 - Introduction to GIS

An introduction to GIS as a set of strategies, methods and techniques used to facilitate the inventory and analysis of complex systems. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5572 - Landscape Ecology

Course emphasizes continuity and change in an ecology of the natural and man-made landscape. Focuses on biological, geophysical, cultural, and perceptual factors involved in

landscape, spatial organization, and urban and regional structure. Introduces field ecology for landscape architecture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 5573 - Advanced Landscape Ecology

Critically investigates the performance of complex landscape systems on multiple spatial and temporal scales, with emphasis on the interaction of human and non-human systems. May address issues of sustainability, disaster recovery, mitigation, etc. Prereq: LDAR 5572 or URPL 6500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6470 - ACE Mentoring

Graduate students work with professional architects, designers, and engineers mentoring students in selected local high schools to learn problem solving, graphics and model making to produce a design project. Student mentors develop lesson plans, outcomes and keep a weekly journal. Cross-listed with ARCH 6470 and URPL 6850. Restriction: Restricted to majors within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6520 - Landscape Architecture in Other Cultures

Study abroad. Various studies of landscape architecture, architecture, urbanism, and design to destinations outside of the continental United States. Cross-listed with LDAR 3690. Restriction: Restricted to majors within the College of Architecture and Planning. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

LDAR 6604 - Landscape Architecture Design Studio 4

Intermediate landscape design studios engage design projects and topics that cover diverse design approaches, contexts, and landscape processes at various scales and complexities. Design projects will vary. Students are expected to expand their graphic, oral communication, and design skills.. Prereq: LDAR 5501, 5502, 5503 or permission of department chair. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6605 - Landscape Architecture Design Studio 5

Intermediate landscape design studios engage design projects and topics that cover diverse design approaches, contexts, and landscape processes at various scales and complexities. Design projects will vary. Students are expected to expand their graphic, oral communication, and design skills. Prereq: LDAR 5501, 5502, 5503, 6604 or permission of department chair. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6606 - Landscape Architecture Design Studio 6

Advanced design studio covering landscape change in diverse contexts at various scales and complexities. Recommended: completion of 2 graduate level landscape studios or permission of department chair. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 6 Credits. **Semester Hours:** 6 to 6

LDAR 6607 - Landscape Architecture Design Studio 7

Advanced landscape design studios engage design projects and topics that cover diverse design approaches, contexts, and landscape processes at various scales and complexities. Design projects will vary. Students are expected to demonstrate mastery of graphic, oral communication, and design skills. Prereq: LDAR 5501, 5502, 5503, 6604, 6605, 6606 or permission of department chair. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6608 - Landscape Architecture Design Studio 8

Advanced landscape design studios engage design projects and topics that cover diverse design approaches, contexts, and landscape processes at various scales and complexities. Design projects will vary. Students are expected to demonstrate mastery of graphic, oral communication, and design skills. Prereq: LDAR 5501, 5502, 5503, 6604, 6605, 6606, 6607 or permission of department chair. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6620 - Landscape Architecture Theory and Criticism

Explores and assesses theory in landscape architecture and the concepts, ideas and discourses underlying contemporary design approaches. Emphasizes developing critical understanding of the roles and agency of theoretical inquiries in landscape architecture in relation to aligned disciplines. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6625 - Landscape Architecture Field Studies

Critical field evaluation of built works of landscape architecture using methodological approaches like field measurement, mapping, sketches, photography, written evaluations and applied research. It may also assess the performative aspects of designed landscapes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6630 - Site, Society and Environment

Sites are defined by relationships within environmental and social settings. Therefore site design should be primarily ethical and secondarily technical. This course examines the implications of this idea through site methodologies, conceptual construction of site, site analysis and site typologies. Cross-listed with LDAR 4430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6631 - Landscape Construction Materials and Methods

Develops understanding of detailed design processes, construction materials and selection of construction methods and documents. Typically taken with LDAR 6605 and 6606 (LDAR Design Studios 5 and 6). Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6632 - Site Planning

Focuses on site planning processes, criteria and decision-making. Includes research, site analysis, and data synthesis as they relate to site context and design concepts. Also addresses site work (grading and drainage, utilities), cost computation, and creating site and building program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6635 - Community Engaged Design Practice

Obtain real-world pre-design and conceptual design experience in complex urban environments focusing on evolving trends in sustainability. Using digital trans-disciplinary learning students will develop comprehensive sustainable strategies that draw from their own sustainable philosophy developed during this class. Cross-listed with ARCH 6257 and LDAR 4435.

Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6636 - Urban and Local Food Systems

In this seminar, we will examine the connections between landscape architecture and food production in cities as well as the role that food production plays in rural landscapes. The course material may be historical, theoretical, or oriented toward contemporary research. Cross-listed with LDAR 4436. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits **Semester Hours:** 3 to 3

LDAR 6637 - Social Justice in Planning

This course investigates various social justice issues encountered in planning, including conflict resolution; advocacy; environmental justice; social equity; culture and diversity; disadvantaged populations; public engagement techniques; affordability; equal access; and policy impacts. Cross-listed with URPL 6410 and ARCH 6258. Restriction: Restricted to Architecture graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6641 - Computer Applications in Landscape Architecture

Introduces digital technologies and methods commonly used in landscape architecture including primarily CADD, visualization, graphic design, and other emerging applications. Includes hands-on exercises. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6642 - Landscape Architecture Digital Design Workshop

Provides hands-on experiences in the principles, software, and theories for emergent 3-D and 4-D design in landscape architectural practice and research. Prereq: LDAR 6641. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6652 - Urban Design Seminar Topics

Investigates topical issues in urban design, typically within the framework of a theme running through an entire course of study. Focus is on critical evaluation of theory, process and methods. Cross-listed with URBN 6652. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6655 - Urban Ecology

This lecture/seminar will cover ecological principles as applied to urban systems (lecture portion) and students will do an intensive study, presentation, and discussion on the topic of their choosing (seminar portion). Cross-listed with URPL 6547. Restriction: Restricted to graduate students in the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6670 - Plants in Design

Explores the challenges, opportunities and responsibilities of designing with living, growing, and ever-changing organisms. Students learn to identify plants that are commonly used in the Colorado region and the principles, theories, methods, and techniques for planting design. Cross-listed with LDAR 4470. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6671 - Plant Material Identification

Students learn the names, characteristics and site requirements of plants including trees, shrubs, ground covers and perennials commonly used in built works in the Colorado region. Methods are transferable to other regions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6686 - Special Topics: Landscape Architecture

Various topical concerns are offered in landscape architecture history, theory, elements, concepts, methods, implementation strategies, and other related areas. Repeatable. Max Hours: 21 Credits. **Semester Hours:** 3 to 3

LDAR 6706 - Advanced Landscape Architecture Design Studio Immersive I

Advanced design studio forms core of the Immersive experience; covers landscape change in diverse contexts at various scales and complexities. Travel competent also required (LDAR 6707). Recommended: complete 2 previous landscape graduate studios or permission of

department chair. Co-req: LDAR 6707, LDAR 6740, and LDAR 6745. Max hours: 4 Credits.
Semester Hours: 4 to 4

LDAR 6707 - Advanced Landscape Architecture Design Studio Immersive II

Advanced design studio forms core of the Immersive experience; covers landscape change in diverse contexts at various scales and complexities. Travel anticipated. Recommended: complete 2 previous landscape graduate studios or permission of department chair. Co-req: LDAR 6706, LDAR 6740, and LDAR 6745. Max hours: 2 Credits. **Semester Hours:** 2 to 2

LDAR 6711 - Advanced Graphics Landscape Architectural

Focuses on developing practical and applied expertise in various manual and digital visualization and representation techniques and media used for enhanced effectiveness in visual communication. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6712 - Green Roofs/Living Systems

The primary objective for this seminar is to give students a general understanding of green roof systems, vegetated roofs above underground architecture and vertical vegetated systems. The seminar will engage in critiques and discussions using international, national and local case studies, covering history, typologies, function, design, master planning and costs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6720 - Finding Common Ground

Focuses on principles and societal variables that influence the structure of urban neighborhood space through research application. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6722 - Contested Terrains

Explores the different processes, factors and forces that determine and influence occupation, land use and built form through the phenomena of conflict and contestation. Design is inherently located within the disputes and discourses involving landscape as location and resource. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6723 - Cinema and the Landscape

Explores the relationships between landscape and film through theoretical and practical investigations. Explores film's roles in understanding and investigating landscapes, their dynamic qualities and processes, and issues related to film's capacity to construct spatial meaning. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDAR 6724 - American Landscapes

Historical, theoretical and critical evaluation of the development of American landscapes. May cover the economic, philosophical and social trends behind changes in the landscape as well as the intellectual and contextual changes to the theory and practice of landscape architecture.

Prereq: LDAR 5521 Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6725 - Design Communications

In this seminar students will learn research and writing skills to produce articles in clear, readable, and substantial prose, from academic criticism to general interest reviews; writing forms and styles, including essays, reports, award applications and writing for oral presentation; and editing basics. Prereq: History and/or theory of landscape architecture or architecture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6735 - The Landscape of Food

An examination of the reciprocal relationships between landscapes and patterns of food production, distribution, and consumption. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6740 - Advanced History/Theory Seminar - Immersive Semester

Investigates topical issues in landscape architecture history/theory, process and methods within the framework of themes/issues running through the immersive semester course of study. Co-requisite LDAR6706 Advanced Landscape Architecture Design Studio - immersive. Restricted to graduate CAP students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6741 - Urban Design Process

Advances current practice by exploring innovative methods of design analysis, production, representation, and communication. Community participation and civic engagement are integral components of seminar. Restrictions: Restricted to Graduate level students in the college of Architecture and Planning. Cross-Listed with URBN 6641, LDAR 6741, and URPL 6398. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6745 - Advanced Media/Technology Seminar - Immersive Semester

Advances landscape architectural practice by exploring innovative methods of design analysis, production, representation, and communication. Community participation and civic engagement are integral components of this seminar aligned with the immersive studio core track. Co-requisite LDAR6706 Advanced Landscape Architecture Design Studio - immersive. Restricted to graduate CAP students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6750 - Professional Practice

Explores the essential elements of professional practice and equips students with the fundamental knowledge and skills requisite to understand and participate in this practice. Covers office organization, project management, contracts, professional ethics and non-traditional careers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6755 - Urban Housing

This course examines housing trends and patterns; supply and demand factors; housing policies; housing challenges (e.g., inequitable distribution, special needs, segregation/discrimination, and homelessness); sociological, demographic, and economic considerations; and the roles of planners and the public and private sectors. Cross-listed with ARCH 6205 and URPL 6405. Restriction: Restricted to majors within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6840 - Independent Study

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to landscape architecture or urban design. Prereq: Permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

LDAR 6850 - GIS Capstone

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to GIS. Serves as Capstone for LA GIS certificate. Permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6910 - Teaching Assistantship

Work with a faculty member in a course to assist with course preparation and delivery and learn teaching practices. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

LDAR 6930 - Landscape Architecture Internship

This experiential learning course provides students the opportunity to participate in and reflect on the practice of landscape architecture by working in a design office. Students will reflect on and critically analyze issues such as leadership, management and collaboration. Prerequisite: This course may only be taken once during a student's academic career and is to be taken after the first year of graduate study. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6949 - Research Tools & Methods

Introduces students to research in landscape architecture and related fields and disciplines. Provides students with research practices, methods, and methodologies and a critical framework to identify suitable approaches based on diverse projects and contexts. Supports

studio, independent study and thesis. Cross-listed with ARCH 6473. Max hours: 3 Credits.

Semester Hours: 3 to 3

LDAR 6950 - Thesis Research

Student works closely with a landscape architecture faculty advisor and thesis committee to develop the thesis through focused research. Research might entail both written and graphic inquiry leading to specific products with conclusive ideas setting the stage for final thesis.

Prereq: LDAR 6949 and permission of department chair. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDAR 6951 - Landscape Architecture Thesis

The Landscape Architecture thesis is expected to advance the field of landscape architecture by offering new insights into aspects of design, technology, history or professional principles. In this course, the student continues to work independently, but closely with a landscape architecture faculty advisor and thesis committee to complete the thesis. The thesis might take on different final forms (written volume, drawings, maps, digital images), depending on the subject inquiry. For further information on the Landscape Architecture Thesis Track consult the Landscape Architecture Thesis Guidelines. Prereq: LDAR 6949 and 6950. Max hours: 6 Credits.

Semester Hours: 6 to 6

Latin

LATN 1010 - Elementary Latin I

Introduces grammar, syntax, and vocabulary of Classical Latin, with an emphasis on preparing students to read Latin while improving English grammar and vocabulary skills. Two semesters of Latin may be used to fulfill the CLAS language competency requirement. Term offered: fall. Max hours: 5 Credits. **Semester Hours:** 5 to 5

LATN 1020 - Beginning Latin II

Completes the presentation of basic Latin grammar, syntax and vocabulary. Introduces students to Latin literature through readings in select authors adapted to meet the needs of beginning students. Note: This course assumes that students have passed LATN 1010 or equivalent, or have taken one year of high school Latin, or possess equivalent proficiency. A grade of C- or higher in LATN 1010 is recommended for success in this course. Term offered: spring. Max hours: 5 Credits. **Semester Hours:** 5 to 5

LATN 1050 - Vocabulary for Professionals

Studies English words derived from Latin and Greek by analyzing their component parts (prefixes, stems, and suffixes). Cross-listed with ENGL 1050. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LATN 1100 - Building Vocabulary From Greek and Latin Words

Students learn to decipher unfamiliar words by breaking them down to their Latin or Greek roots. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LATN 2010 - Intermediate Latin I

Introduces advanced Latin grammar, vocabulary, syntax, and stylistics of Latin prose via readings in Caesar, Cicero and Livy. Includes review of basic Latin grammar, plus introduction to Latin prose composition and Latin rhetoric. Emphasis on historical, cultural, social context of authors and works. Note: This course assumes that students have passed LATN 1020 or equivalent, or have taken two years of high school Latin, or possess equivalent proficiency. A grade of C- or higher in LATN 1020 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LATN 2020 - Intermediate Latin II

(Continuation of LATN 2010.) Completes the presentation of advanced Latin grammar, vocabulary, syntax, and stylistics of Latin prose. Continues the study of Latin prose composition and Latin rhetoric with emphasis on historical, cultural, and social context of authors and works. Note: This course assumes that students have passed LATN 2010 or equivalent, or have taken three years of high school Latin, or possess equivalent proficiency. A grade of C- or higher in LATN 2010 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LATN 2840 - Independent Study

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

LATN 3000 - Medical Terminology

The course enables students to understand medical terms by learning the Greek and Latin word elements that form these terms. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LATN 3840 - Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

LATN 4840 - Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

LATN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Learning, Devl, and Family Sci

LDFS 5110 - Human Learning

A review of the research on human learning, including related topics such as information processing and motivation. Various theories of learning are examined in-depth, and their applications to teaching and practices in schools (and in other educational settings) are considered. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 5240 - Cognition and Instruction

Explores recent developments in cognition and their implications for instructional practices. Includes theory and research in cognitive psychology and resultant educational practices. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 5260 - Child Study and Observation

Involves extensive, systematic observation of young children. Recorded observations are analyzed in terms of child development theories, children's background, setting variables, and are then presented in written and elaborated form. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 5840 - Learning, Developmental and Family Sciences Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

LDFS 5930 - Learning, Developmental and Family Sciences Internship

Field-based experiences in settings (schools, businesses, governmental agencies, special projects) that are linked closely to the student's professional objectives. Requires a minimum of 150, 225 or 300 clock hours under supervision (two-four credit hours, respectively). Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 4

LDFS 6100 - Advanced Child Growth and Development

Systematic study of the major theories of child growth and development. Focuses on current research regarding infants and children and the implication of such research for education. Cross-listed with LDFS 7100. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 6140 - Social Contexts of Adolescence and Schooling

Systematic study of the major theories of adolescent growth in social contexts, emphasizing the social and cultural construction of the adolescent experience. Focuses on current research regarding adolescents and the implications of the research for education. Cross-listed with LDFS 7140. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 6200 - Human Development Over the Life Span

An inquiry into the experience and meaning of human development over the full span of life. Both analytical and reflective modes of exploration are utilized to approach the study of personhood and the courses and themes of life. Cross-listed with LDFS 7200. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 6220 - Adult Development

Surveys theories and principles of adult development through an ecological perspective with an emphasis on community and educational contexts. Cross listed with LDFS 7220. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 6320 - Mind, Brain, and Education

An introductory survey into contemporary theory and research in developmental cognitive neurosciences and their potential applications to education, aiming to explore how the brain learns, and what it means for learning and development. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6400 - Observation, Documentation and Assessment

This course focuses on developing competencies in observation, documentation, and assessment to inform understandings about children and teaching. Students will draw from child development and ecological theories to observe children's assets, then interpret and analyze how children learn and develop. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6410 - Social Foundations of Family and Community

In this course, students of early childhood education will learn to think and act reflectively, critically, and socially, informed by the roles of families and communities of young learners. Course readings, observation, documentation, and reflection provide foundations for the

development of relational perspectives on social justice. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6420 - The Environment as the Third Teacher

This course will provide students with an understanding of the relationship between the Learning Sciences and Reggio-Inspired practices, and how this relationship can be applied to the design of engaging and dynamic learning environments. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6600 - Motivation in Contexts

Theories of human motivation are examined through social and cultural lens directed at phenomena of engagement and disengagement in activities at different levels of scale. Applications are considered for both educators and learners in various social and cultural learning contexts. Cross listed with LDFS 7600. Max hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 6750 - Designing Environment for Learning and Development

Introduction to concepts, findings, and research methods relevant to theory and research in the Learning Sciences, with specific focus on how those concepts and findings apply to design learning across settings. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6840 - Learning, Developmental and Family Sciences Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

LDFS 6910 - Practicum Reflections on Learning

This course focuses on the pursuit of praxis within the student teacher residency. Reflection on course resources, engagement in ongoing processes of documentation, and reflection within a small group meeting format drive social construction of knowledge about learning and development. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 6950 - Culminating Capstone Experience

This course provides a learning environment for students to complete an applied project/thesis in education and human development contexts as part of their final capstone experience in the Master's in Learning, Developmental and Family Sciences. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

LDFS 7100 - Advanced Child Growth and Development

Systematic study of the major theories of child growth and development. Focuses on current research regarding infants and children and the implication of such research for education. Cross listed with LDFS 6100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7120 - Family Dynamics

Review and analysis of issues related to families with exceptional or at-risk young children. Topics include coping skills, family involvement, parent-child interaction, and sources of support. Special attention is given to current research and its application to early intervention. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

LDFS 7140 - Social Contexts of Adolescence and Schooling

Systematic study of the major theories of adolescent growth in social contexts, emphasizing the social and cultural construction of the adolescent experience. Focuses on current research regarding adolescents and the implications of the research for education. Cross-listed with LDFS 6140. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7200 - Human Development Over the Life Span

An inquiry into the experience and meaning of human development over the full span of life. Both analytical and reflective modes of exploration are utilized to approach the study of personhood and the courses and themes of life. Cross-listed with LDFS 6200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7220 - Adult Development

Surveys theories and principles of adult development through an ecological perspective with an emphasis on community and educational contexts. Cross-listed with LDFS 6220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7600 - Motivation in Contexts

Theories of human motivation are examined through social and cultural lens directed at phenomena of engagement and disengagement in activities at different levels of scale. Applications are considered for both educators and learners in various social and cultural learning contexts. Cross-listed with LDFS 6600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7712 - Learning and Human Development

Students apply major theories from learning and human development theories to problems of practice and research related to education and community contexts. Restriction: Restricted to EDHD-PhD, LDRE-EDd, and SPSY-PsyD majors within the School of Education and Human Development. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

LDFS 7840 - Learning, Developmental and Family Sciences Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

Linguistics

LING 2000 - Foundations of Linguistics

Provides students with the foundations of the scientific study of language. Examines core areas within theoretical linguistics, sociolinguistics, historical linguistics, language acquisition, and writing systems, using a variety of languages. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

LING 3100 - Language in Society

Introduces students to language use in the context of American society. Examines the interaction between language and age, gender, race, ethnicity, education, income, social class, language attitudes, policy and politics. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

LING 3840 - Independent Study - LING

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

LING 4840 - Independent Study - LING

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

Lit, Lang, & Cult Resp Teach

LCRT 2000 - Rebels, Villains, & Superheroes: How Children's Literature Shapes Our Identities

This course explores both classic and contemporary children's and adolescent literature and media in traditional and digital texts, specifically focusing on developing literary understandings, exploring perspectives and personal responses to literature, and inquiring into trends and issues. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 3720 - Introduction to Writing Development and Teaching

This course introduces students to writing development in children from early childhood through 5th grade. Students will learn how to analyze student writing for strengths and needs in order to design effective writing instruction. Prereq or coreq: EDHD 2930 and LCRT 4710. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4000 - Elementary Literacy Instruction and Assessment Part 1

This course develops an appreciation, understanding, and application of literacy assessment and instruction in PK-6 classrooms. Interns learn how to use various types of assessment and instruction for reading and writing that address the literacy needs of PK-6 Students. Cross-listed with LCRT 5000. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4001 - Elementary Literacy Instruction and Assessment Part 2

This course develops an appreciation, understanding, and application of literacy assessment and instruction in PK-6th classrooms. Interns learn how to use various types of assessment and instruction for reading and writing that address the literacy needs of PK-6th Students. Cross-listed with LCRT 5001. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4100 - Secondary Literacy Instruction and Assessment

Provides knowledge and practice in using specific literacy methods to enhance students' content learning and literacy development in middle schools and high schools. Various methods of literacy assessment to guide instruction for students are emphasized. Instructional strategies for special populations, especially speakers of English as a second language, are also addressed. Cross-listed with LCRT 5100. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4200 - Theory and Methods of Teaching Secondary English

Focuses on teaching/learning theories and practical classroom strategies for teaching English Language Arts to adolescent learners in middle school, junior high school and high school classes. Cross-listed with LCRT 5200. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4201 - Adolescent Literature

Reading and evaluating fiction and non-fiction appropriate for students in middle and senior high school. Emphasis is on modern literature. Cross-listed with LCRT 5201. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4210 - Literacy Development Pre K-3rd Grade

Focuses on children's developing literacy understandings and proficiencies beginning in the preschool years. Attention is given to language development, assessment, and instruction in pre-kindergarten through third grade, partnerships with community literacy institutions provide information on their use for literacy development. Cross-listed with LCRT 5210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4220 - Literacy Routines & Assessment, Pre K-3rd Grade

This course will focus on the routines and practices which allow for student specific instruction and assessment in the Early Literacy classroom. Participants will examine and critique current literacy routines and assessments needed to best meet the needs of culturally and linguistically diverse children. Cross-listed with LCRT 5220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4230 - Early Literacy Instruction

Participants will examine Pre K-3rd grade literacy instruction to understand how to meet the needs of young students. The course will analyze instructional practices for young gifted, special needs and English language learning students to best meet the needs of all learners. Cross-listed with LCRT 5230 Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 4710 - Primary Literacy for Diverse Learners: Pre K-3rd Grade

This course provides teachers with a basic understanding of reading and writing development in preschool and early primary grades, while considering specific strategies for using and teaching reading and writing in early primary grades (pre-K-3). This course is cross-listed with LCRT 5710. Prereq or coreq: EDHD 2930 and LCRT 3720. Restriction: Restricted to students in Education and Human Development with between 27 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5000 - Elementary Literacy Instruction and Assessment Part 1

This course develops an appreciation, understanding, and application of literacy assessment and instruction in PK-6 classrooms. Interns learn how to use various types of assessment and instruction for reading and writing that address the literacy needs of PK-6 Students. Cross-listed with LCRT 4000. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5001 - Elementary Literacy Instruction and Assessment Part 2

This course develops an appreciation, understanding, and application of literacy assessment and instruction in PK-6th classrooms. Interns learn how to use various types of assessment and instruction for reading and writing that address the literacy needs of PK-6th Students. Cross-listed with LCRT 4001. Prereq: LCRT 4000 or LCRT 5000. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5020 - Reading Development, Instruction and Assessment

This course involves critical examination of reading process and instruction. Teachers develop an understanding of the principles of sociopsycholinguistic theory in learning and teaching. Organization options for reading instruction for native and non-native speakers of English at all ages and ability levels will be examined. Teachers become familiar with materials and methods used for reading and reading instruction in schools, including multicultural materials, students' interaction with and response to materials; and techniques to assess and evaluate students reading. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5028 - Developing Strategic Readers, Grades 4-12

Focuses on supporting adolescents' developing literacy understandings especially related to vocabulary, reading comprehension, writing, and student engagement across all content areas in the upper elementary grades through high school. Importance is placed on putting new teaching practices in place. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5029 - Developing 21st Century Literacy Curriculum, Gr 4-12

Focuses on adolescents' developing literacy understandings across all content areas upper elementary grades through high school. Attention is given to comprehension and critical thinking including assessment, unit planning, problem-based learning, research cycles, technology, and putting new teaching practices into place. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5055 - Literacy Assessment & Informed Instruction

Focuses on reading, writing, and language assessments and their use to plan and deliver informed classroom and intervention instruction. Principles of literacy assessment, state and federal law, instructional strategies and interventions are learned through creation of student literacy profiles. Needs of both L1 and L2 learners as well as other diverse learners are considered. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5100 - Secondary Literacy Instruction and Assessment

Provides knowledge and practice in using specific literacy methods to enhance students' content learning and literacy development in middle schools and high schools. Various methods

of literacy assessment to guide instruction for students are emphasized. Instructional strategies for special populations, especially speakers of English as a second language, are also addressed. Cross-listed with LCRT 4100. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5150 - Culturally Relevant & Responsive Pedagogies

Provides an examination of broad cultural diversity regarding the role of culture in teaching and learning in the classroom. After examining their educational contexts, students gain skills to differentiate instruction for diverse learners; foster quality instruction that demonstrates respect for cultural pluralism; and, create equitable educational environments. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5200 - Theory and Methods of English Education

Focuses on teaching and learning theories and practical classroom strategies for teaching English Language Arts to students in middle school and high school. Cross-listed with LCRT 4200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5201 - Adolescent Literature

Reading and evaluating fiction and non-fiction appropriate for students in middle and senior high school. Emphasis is on modern literature. Cross-listed with LCRT 4201. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5210 - Literacy Development Pre K-3rd Grade

Focuses on children's developing literacy understandings and proficiencies beginning in the preschool years. Attention is given to language development, assessment, and instruction in pre-kindergarten through third grade, partnerships with community literacy institutions provide information on their use for literacy development. Cross-listed with LCRT 4210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5220 - Literacy Routines and Assessment, Pre K-3rd Grade

This course will focus on the routines and practices which allow for student specific instruction and assessment in the Early Literacy classroom. Participants will examine and critique current literacy routines and assessments needed to best meet the needs of culturally and linguistically diverse children. Cross-listed with LCRT 4220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5230 - Early Literacy Instruction

Participants will examine Pre K-3rd grade literacy instruction to understand how to meet the needs of young students. The course will analyze instructional practices for young gifted, special

needs and English language learning students to best meet the needs of all learners. Cross-listed with LCRT 4230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5310 - Literacy Assessment & Processing: Guided Reading

The course will explore the format and components of Guided Reading Plus, including: responsive teaching, summative and formative assessment, content/language objectives, oral language development, strategies for problem solving, comprehension, fluency, word solving strategies, and the reciprocity of reading and writing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5320 - Teaching Students with Reading Difficulties

The course will explore specific teaching moves that help children build an effective literacy processing system and become independent readers. We will study areas of reading difficulty and ways of assessing students to determine their strengths and instructional needs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5330 - Deepening Literacy Understandings

This will explore the power of formative assessment for observation and interpretation of reading behaviors. We will study the continuum of literacy learning as a foundation for learning the behaviors and understandings that must be taught at each text level. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5710 - Primary Literacy for Diverse Learners, Pre K-Grade 3

This course provides teachers with a basic understanding of reading and writing development in preschool and early primary grades, while considering specific strategies for using and teaching reading and writing in early primary grades (pre-K-3). This course is cross-listed with LCRT 4710. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5720 - Writing Development, Instruction and Assessment

Course covers current theories of writing development as they relate to classroom practices, direct participation in personal writing, conferencing with other course members, revision of pieces, and the sharing of final products. Participants use research to help analyze and assess student writing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5724 - Colorado Writing Project I

Teachers will experience participating in writers' workshop, writing several pieces, taking them through revision and workshop groups. Teachers will also read, discuss, and respond to texts

about teaching writing and preparing students to take state writing tests. Max hours: 4 Credits.
Semester Hours: 4 to 4

LCRT 5726 - Colorado Writing Project II

Teachers will experience participating in writers' workshop, writing several pieces, taking them through revision and workshop groups. Teachers will also read, discuss, and respond to texts about teaching writing and preparing students to take state writing tests. Max hours: 4 Credits.
Semester Hours: 4 to 4

LCRT 5728 - Colorado Writing Project III

Teachers will experience participating in writers' workshop, writing several pieces, taking them through revision and workshop groups. Teachers will also read, discuss, and respond to texts about teaching writing and preparing students to take state writing tests. Max hours: 4 Credits.
Semester Hours: 4 to 4

LCRT 5730 - Language and Literacy Across the Curriculum

Explores the value and use of reading and writing as tools for learning across the curriculum on a K-12 basis. Specific needs and strategies for assisting at-risk and second language learners are also discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5770 - Effective Literacy Instruction for Diverse Learners

Focuses on exploring, applying, and evaluating research-based instructional models and learning strategies for teaching literacy to diverse learners. Students develop a professional practice of providing instruction to support oral language, academic reading, and academic writing for native speakers of English, multilingual and bidialectal learners of English. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5790 - Children's Literature: Grimm through Graphic Novels

Children's literature course exploring the historical development of children's literature and its influence on contemporary literature and media. Emphasized are various genre including both fiction and nonfiction, choosing and critiquing children's literature, and children's book awards. Graphic novels and e-books are explored as the leading edge of this area. Max hours: 3 Credits.
Semester Hours: 3 to 3

LCRT 5795 - Current Children's Literature

This course explores children's literature, including electronic books, within the past decade. A wide range of genres will be explored with a particular emphasis on newer authors and

illustrators in the field. Participants will also practice critiquing children's literature and selecting books for instruction. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5810 - Oral & Written Language & Literacy

Focuses on oral/written language and literacy in educational and home settings. Addresses learners with native English, English as additional language, bi-dialectal, and multilingual. Students analyze language and literacy samples using language structures and discourse patterns to develop instructional techniques. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5815 - Family Literacies in Diverse Communities

Focuses on involving and connecting with families and communities of classroom learners. Students gain practical strategies to identify resources and funds of knowledge that diverse learners and families bring to schools; and, use learners' cultural resources and references to promote all aspects of learning in the classroom. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 5831 - Reading Recovery: Observation Survey

A workshop class which introduces the participants to an understanding of literacy acquisition and prepares them to implement the Reading Recovery Program within their school or district. Prereq: reading and language arts methods. A minimum of three years primary teaching or reading teaching experience. Max hours: 2 Credits. **Semester Hours:** 2 to 2

LCRT 5835 - Special Topics: Literacy and Language

Specific topics vary but will include the exploration of literacy development and instruction in particular populations or with specific focuses. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 0.5 to 3

LCRT 5840 - Independent Study: LCRT

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

LCRT 5911 - Reading Recovery Practicum: Early Intervention (Theory, Procedures and Practice)

A field experience which extends the participants' understanding of literacy acquisition and prepares them to implement the Reading Recovery Program within their school or district. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 6840 - Independent Study: LCRT

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

LCRT 6910 - Seminar & Practicum in Literacy and Language

Provides opportunities for advanced students in the M.A. program to apply concepts acquired in course work and other educational experiences to specific situations. Students will work in schools, classrooms, administrative offices, or community centers (according to their experiences, interests and current teaching positions; sites to be identified before course begins) to study the potential for change in schools and society and to reflect upon their roles as change agents in the field. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 6911 - Seminar and Practicum in Literacy and Language, 7-12+

Provides opportunities for advanced students in the M.A. program to apply concepts acquired in course work and other educational experiences to specific situations. Students will work in schools, classrooms, administrative offices, or community centers (according to their experience, interests and current teaching positions; sites to be identified before course begins) to study the potential for change in schools and society and reflect upon their own roles as change agents in the field. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 6913 - Reading Recovery: Practicum

A practicum which refines the participants' understanding of literacy acquisition and finalizes preparation to implement the Reading Recovery Program within their school/district. Max hours: 4 Credits. **Semester Hours:** 4 to 4

LCRT 6915 - Seminar and Practicum in Literacy Professional Development

This final practicum is designed for teachers to enhance their education as reading professionals in two ways. First, by continuing to reflect on and analyze their own and others' teaching, participants will deepen their understanding of how to assess and design instruction based on the needs of students. Second, through structured coaching activities, participants will improve their skills in providing literacy leadership. Max hours: 3 Credits. Max hours: 3 Credits. **Semester Hours:** 3 to 3

LCRT 6950 - Master's Thesis

Max hours: 4 Credits. **Semester Hours:** 4 to 4

Management

MGMT 1000 - Introduction to Business

This course will introduce students to the nature and role of business in our society. Problems confronting business are surveyed from a management, financial, economic and marketing viewpoint. Career opportunities in business are also considered. Students are advised to take this course during their freshman year and may not take it in the junior or senior years. Prereq: Open to freshman and sophomores, non-degree students and music majors at all levels. Cross-listed with BMIN 1000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 1111 - Business Freshman Seminar

This course introduces students to the nature and role of business in our society. Career opportunities in business are also considered. This course is designed to assist first year students transition to life on campus. The course content is integrated with various activities designed to familiarize 1st year students with school resources, develop critical thinking and writing skills and build relationships critical to ongoing academic success. Students are advised to take this course during the first semester of their freshman year. Note: Credit will not be given for both MGMT 1111 and MGMT 1000. Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 2939 - Internship

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MGMT 3000 - Managing Individuals and Teams

Focuses on helping students understand how to manage individuals and groups effectively. Students are encouraged to know themselves better and how their behavior affects how they deal with organizational situations; they also learn how individuals differ and how to design, manage and work in a team. This is a business core course therefore a grade of a 'c' or better must be earned to satisfy graduation requirements. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 3010 - Managing People for a Competitive Advantage

Provides an overview of the management of human resources in organizations. Areas of study include recruitment, selection, training, career development, performance appraisal, compensation and employee or labor relations. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 3111 - Business Transfer Student Seminar

This course is designed to assist first year transfer students transition to UC Denver. The course includes various activities designed to familiarize students with University and Business School resources, develop critical thinking, writing, time management and study skills, and build relationships critical to ongoing academic success. Students are advised to take this course

during their first or second semester at UC Denver. Concurrent registration in MGMT 3000 is required. Cross-listed with MGMT 3000. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 1 Credits. **Semester Hours:** 1 to 1

MGMT 3420 - Ethics: A Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Cross-listed with MGMT 6420, ISMG 4785, and ISMG 6885. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 3830 - Business and Sustainability

Business activity can have significant environmental and societal impacts. This course examines some of the ways that companies and consumers are reducing their impact on communities and the environment. Sustainability issues will be considered from a management, finance, marketing, and consumer perspective. Climate change and renewable energy will be featured topics in the class. Prereq: MKTG 3000. Cross-listed with MGMT 4830, BUSN 6830. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MGMT 4028 - Travel Study Topics

Join your classmates in an international travel study course to understand the business operations of another culture. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MGMT 4100 - Leveraging Diversity and Inclusion in Business

Practical and policy issues that arise from living and working in a multicultural world in order to promote informed, effective management. Particular emphasis is given to the development of innovative approaches to managing the challenges posed by a work force that differs in

characteristics, such as race, gender, ethnicity, age, lifestyle and disability. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4120 - Collaborative Experiential Learning

Explores the place and role of architecture as an instrument of critical social engagement and cultural change. Business students will collaborate with Arch students to explore the role of history and precedent in the design process through client driven projects that demonstrate their proficiency in applying business analysis to project design. Prereq: Senior standing. Restriction: Restricted to undergraduate Business majors. This course will be in collaboration with ARCH 4120. Note: this class will fulfill the Business Schools experiential learning requirement. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4140 - Negotiation Skills/Property: Effective Strategies

Course covers real and personal property law, including ownership, title, landlord/tenant, easements, environmental law, and zoning. Emerging issues in intellectual property are also reviewed, including U. S. law and international treaties and agreements. Negotiation techniques through role-playing are emphasized. NOTE: This course is an elective course and may not be used to fulfill the CORE BLAW 3050 course. Meets concurrently with BLAW 4140. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4230 - Sports Management

This course is designed as a speaker series of sports and entertainment industry elite focusing on: industry trends, strategic planning, managing revenue streams, managing media, managing for effectiveness, managing post-merger integration, leadership and leading change. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4231 - Managing Sports Finance

This course explores the problems and solutions of financing in the sports industry. It focuses on stadium/venue financing, sports team valuation, event guarantee estimation, player salary issues, and managing disparate revenue streams. The course utilizes speakers, articles, problem sets, and cases. Prereq: DSCI/BANA 2010 and ACCT 2200 both with a grade of C- or higher, ECON 2012 and ECON 2022. Coreq: FNCE 3000. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4330 - Mastering Management

Experiential learning course designed to give students hands-on practice developing critical management skills such as: negotiation, conflict management, group consensus-building, and interpersonal feedback and communication. Prereq: MGMT 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4350 - Leading Organizational Change

Focuses on the tasks and skills of a leader in leading organizational changes. Topics include: diagnosing problems, creating urgency, building the change team, creating a vision, implementing change strategies, sustaining the momentum and making change stick. These tasks and skills are studied in various organizational change contexts. Prereq: MGMT 3000 with a grade of C or higher. Coreq: MGMT 4370. As a corequisite, MGMT 4370 can be taken concurrently or completed prior. If completed prior, must earn a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4370 - Organization Design

Examines how to structure organizations to perform effectively. Addresses the effects of computer-based information technologies (e.g. intranets, extranets, and the internet) on firm structure, strategy, and culture. Emphasis is placed on the role of the task, technology, and the environment as constraints on organizational design. Prereq: MGMT 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4400 - Environments of International Business

An overview of the environmental complexities that arise when business activities and firms cross national borders. Key international business environmental complexities associated with country differences, cross-border trade and investment, and global monetary system are examined. Prereq: MGMT 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher and SPAN-BA majors with a SPP subplan at junior level. Cross-listed with INTB 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4410 - Operations of International Business

Focuses on the impact of environmental factors on international business operations and the identification and analysis of complex strategic and operational issues facing business firms in global markets. The strategies and structures of international businesses, alternative foreign market entry modes, and the unique roles of various business functions at international business firms are explained and assessed. Prereq: INTB 4400 or MGMT 4400 with a grade of C

or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with INTB 4410. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4420 - HR: Talent MGT

Students analyze data/metrics, develop and deliver evidenced based solutions to multiple talent challenges presented in a real-world case study with a focus on managing a Talent Pipeline consisting of Performance Based Hiring, Development, Engagement, Performance, and Retention. Coreq: MGMT 3010. As a corequisite, MGMT 3010 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4430 - Human Resources Management: Training

Covers training methods, theories, research findings. Students design and deliver their own training program, including collecting and analyzing metrics to gauge training success. Coreq: MGMT 3010. As a corequisite, MGMT 3010 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with MGMT 6720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4440 - Human Resource Management: Performance Management

Focuses on the design and implementation of human resource management systems to assess and enhance employee performance. Areas of study include performance definition and measurement, goal setting, feedback, employee development, rater training, and pay for performance. Coreq: MGMT 3010. As a corequisite, MGMT 3010 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4450 - Human Resources Management: Compensation

Develop and administer pay systems considering economic and social pressures, traditional approaches and strategic choices in managing compensation. Current theory research and practice. Students design a compensation strategy and a system that translates that strategy into reality. Prereq: DSCI 2010 or BANA 2010 with a grade of 'C-' or higher. Coreq: MGMT 3010. As a corequisite, MGMT 3010 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with MGMT 6740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4460 - Employee Benefits and Workforce Risk Management

The course surveys an array of popular employee benefit programs to attract, protect, and retain valued employees. It also focusses on risk management programs that invest in human capital and address the downside risks of employing a workforce. Cross-listed with MGMT 6760 and RISK 4409/6409. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4481 - Human Resources Management: Career and employment coaching

Focuses on enhanced approaches to discovering employment opportunities and providing career coaching, with an emphasis on unemployed veterans. Topics include discovering the unique capabilities a job-seeking veteran possesses, addressing the barriers to employment he or she may face, and methods the job seeker can use to educate prospective employers about the contributions to organizational success he or she can make. Cross-listed with MGMT 6781. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4482 - Human Resources Management: Connecting talent with business needs

Focuses on methods for connecting businesses and public-sector organizations with job seekers who possess the capabilities that will fuel profitable growth and mission success. Topics include networking to establish relationships with hiring decisions makers, exploration conversations to identify an organization's success factors, and identifying job seekers (with a special emphasis on unemployed veterans) with the requisite skills, knowledge, traits, and aptitudes. Cross-listed with MGMT 6782. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4500 - Business Policy and Strategic Management

Emphasis is on integrating the economic, market, social or political, technological, and components of the external environment with the internal characteristics of the firm; and deriving through analysis the appropriate interaction between the firm and its environment to facilitate accomplishment of the firm's objectives. Open only to business students in their graduation semester. This is a business core course therefore a grade of 'c' or better must be earned to satisfy Business graduation requirements. Prereq: Senior standing and completion of all business core courses with appropriate grade; Core = ISMG 2050, DSCI/BANA 2010, ACCT 2200, ACCT 2220, BLAW 3050 (or BLAW 3000) all with a 'C-' or higher; ISMG 3000, DSCI/BANA 3000, FNCE 3000, MGMT 3000, and MKTG 3000 all with a grade of 'C' or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4770 - Human Resource Information Systems

Focuses on the management of human resource information systems. It addresses how modern information systems tools can provide better human resource intelligence to users in today's

enterprises, allowing them to make better decisions. It examines how information about workforce and human resource management processes can be collected and used to set targets to meet strategic objectives, monitor performance, receive notifications when performance is below expectations and respond immediately by taking corrective actions. Prereq: MGMT 3000. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4780 - Preparing A Business Plan

Turn a new business idea into a viable new business by developing a comprehensive business plan including: analysis of the potential demand for the product or service and potential customers; identify competitive advantages and marketing strategies; generate pro forma financial projections; and, design the management team needed. Prereq: ENTP 3000 AND either ENTP 3500 with a grade of 'C-' or higher or BLAW 4120 or ENTP 3120 with a grade of 'C' or higher. For non-business majors only. Can be applied to Entrepreneurship Certificate. Business majors enroll in either MGMT 4780 or MKTG 4780. Come to first class meeting with a carefully considered business idea. Cross-listed with MKTG 4780 and ENTP 3780. Max hours: 3 Credits.

Semester Hours: 3 to 3

MGMT 4824 - Sustainable Business/CSR Field Study

Gain practical, hands-on experience with aspects of sustainable business and/or corporate social responsibility. Work with a local company/non-profit/or government organization under the direction of an executive to conduct a sustainability-focused project which is important to the organization's sustainability initiative. Students may petition to use previous coursework or experience in sustainability to fulfill the prerequisite. Please contact the undergrad.advising@ucdenver.edu for more details. Prereq: MGMT 3830 or MGMT 4110 with a C or higher or department consent. Restrictions: Restricted to undergraduate majors within the Business School. Cross-listed with MGMT 6824. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4825 - Sustainable Change Leadership: Turning Business Into a Force for Good

This course develops leadership from the perspective of managing the people side of change required to transform a traditional business to one that is not only financially successful but also a genuine "force for good" for our natural and social environment. The BLab Impact Assessment tool is used to measure, monitor, and link sustainable business practices to drive continuous improvement and innovation. Students will conduct hands-on, practical work with local businesses to develop change leadership skills as they relate to sustainability. NOTE: this course will satisfy the BGen requirement (experiential learning requirement). Restriction: Restricted to undergraduate Business majors with junior standing or higher. Cross-listed with MGMT 6825. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4830 - Business and Sustainability

Business activity can have significant environmental and societal impacts. This course examines some of the ways that companies and consumers are reducing their impact on communities and the environment. Sustainability issues will be considered from a management, finance, marketing, and consumer perspective. Climate change and renewable energy will be featured topics in the class. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with MGMT 3830, BUSN 6830. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4832 - Law & Negotiation in the Sports and Entertainment Industry

This course provides an overview of major legal issues in the sports and entertainment industries. Students develop the skills required to negotiate contracts in these industries. Topics include contracts, copyright, trademark, employment and tort law principles relevant in the sports and entertainment fields. Prereq: MGMT 3000 with a grade of C (2.0) or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4834 - Global Sports & Entertainment Management

Through 2 weeks of visiting organizations with industry elite in London a broader perspective on the sports and entertainment industry is gained. Students will be asked to do advance reading, participate in discussions, keep a journal and write a reflection paper at the end of the experience. Site visits (to be confirmed) include: Arsenal Football Club, Premier League, the O2 Arena, NHL and NBA regular season games in London, 2012 Olympics Committee, Formula One, Hollywood Studio-International Finance Office, Theatre, Lord's Cricket Ground, All England Lawn Tennis Club/Wimbledon and the Office of the Minister of Sport. Prereq: MGMT 3000. Cross-listed with MGMT 6834, MKTG 4834, and MKTG 6834. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4840 - Independent Study

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

MGMT 4900 - Project Management and Practice

Covers the factors necessary for successful management of system development or enhancement projects. Both technical and behavioral aspects of project management are discussed. The focus is on management of development for enterprise-level systems. Topics include: managing the system life cycle; requirements determination, logical design, physical design, testing, implementation; system and database integration issues; network and client-server management; metrics for project management and system performance evaluation; managing expectations: superiors, users, team members and others related to the project;

determining skill requirements and staffing the project; cost-effectiveness analysis; reporting and presentation techniques; effective management of both behavioral and technical aspects of the project; change management. Note: Successful completion of this course meets the educational requirements to sit for both the PMP and CAPM exams. Prereq: Students must be a junior status and have completed either: 1. ISMG 3000 or ACCT 4054 and MGMT 3000 and MKTG 3000, OR 2. ISMG 3000 and ISMG 3500 and ISMG 3600. Restriction: Restricted to undergraduate students in the Business School. Cross-listed with ISMG 4900. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 4950 - Special Topics in Management

A number of different topics in management are offered under this course number. Consult the 'Schedule Planner' for current course offerings. Prerequisites vary depending on the topic and instructor requirements. Cross-listed with MGMT 5800. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MGMT 5800 - Special Topics in Management

A number of different topics in management are offered under this course number. Consult the Schedule Planner for current course offerings. Prerequisites vary depending on the topic and instructor requirements. Cross-listed with MGMT 4950. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MGMT 5939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. Prereq: 21 semester hours and 3.5 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MGMT 6020 - Leadership in Difficult Times

The test of a leader often is their ability to lead their organizations through difficult times and crises. Such situations could be downsizing, product defects, ethical violations, a terrorist attack or a natural disaster. Successful management of these situations can strengthen and renew the organization. Inability to manage these situations can tarnish the organization's reputation and threaten its survival. This course examines leadership under stress and provides frameworks for categorizing and analyzing these difficult situations. The course also addresses strategies that leaders can use to enable their organizations to manage, recover and learn from these difficult experiences. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6028 - Travel Study Topics

Join your classmates in an international travel study course to understand the business operations of another culture. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MGMT 6040 - Managing Global Talent

This course has two objectives: (1) to understand the impact of cultural differences in the management of people in multinational firms; and (2) to compare and contrast critical human resource issues in the contexts of domestic and international operations. Topics include recruitment, staffing, training, performance appraisal, compensation, and labor and management relations in markets around the world. (This course qualifies as an international elective for the MS in International Business program). Restriction: Restricted to graduate Business majors and NDGR majors with a sub-plan of NBA or NBD, within the Business School. Cross-listed with INTB 6040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6320 - Leading Organizational Change

Instruction in the analysis, diagnosis, and resolution of problems in organizing people at work. Models of organizational change are examined. Group experiences, analysis of cases and readings are stressed. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6360 - Designing Effective Organizations

Examines how to design organizations within the context of environmental, technological, and task constraints. The emphasis is on learning how to recognize and correct structural problems through the analysis of existing organizations in which the students are involved. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6380 - Managing People for Competitive Advantage

Focuses on the management of human resources in organizations. Oriented toward the practical application of human resources management principles in areas such as: equal employment opportunity, affirmative action, human resources planning, recruitment, staffing, benefits and compensation, labor relations, training, career management, performance management, and occupational health and safety. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6420 - Ethics: A Formula for Success

Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by "doing the right thing." Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Cross-listed with MGMT 3420, ISMG 6885, and ISMG 4785. Restriction: Restricted to graduate business school students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6610 - Business Strategy Lab

Gain strategy experience collaborating with and consulting to Senior Executives of a client company. This is a hands on, project-based course. Students will analyze a strategic initiative as defined by and with the organization's leadership and provide their client with research, insights and actionable strategic ideas. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6710 - HR: Talent MGT

Students analyze data/metrics, develop and deliver evidenced based solutions to multiple talent challenges presented in a real-world case study with a focus on managing a Talent Pipeline consisting of Performance Based Hiring, Development, Engagement, Performance, and Retention. Prereq: MGMT 6380. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6720 - Human Resources Management: Training

Covers training methods, theories, research findings. Students design and deliver their own training program, including collecting and analyzing metrics to gauge training success. Co-req: MGMT 6380. Cross-listed with MGMT 4430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6730 - Human Resources Management: Performance Management

Focuses on the design and implementation of human resources management systems to assess and enhance employee performance. Areas of study include performance measurement, rater training, goal setting and feedback. Prereq: MGMT 6380. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6740 - Human Resources Management: Compensation

Develop and administer pay systems considering economic and social pressures, traditional approaches and strategic choices in managing compensation. Current theory research and practice. Students design a compensation strategy and a system that translates that strategy

into reality. Prereq: MGMT 6380 and BUSN 6530. Cross-listed with MGMT 4450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6750 - HRM: Investing in People: HR Analytics

Managing talent-organization and deployment-and connections between talent and strategy in organizations. Rooted in a systematic, logical approach that challenges traditional ideas. Stresses the logical connections between progressive HR practices and firm performance and the use of data to demonstrate financial impact of the connections. Max hours: 3 Credits.

Semester Hours: 3 to 3

MGMT 6760 - Employee Benefits and Workforce Risk Management

The course surveys an array of popular employee benefit programs to attract, protect, and retain valued employees. It also focuses on risk management programs that invest in human capital and address the downside risks of employing a workforce. Cross-listed with MGMT 4460 and RISK 4409/6409. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6781 - Human Resources Management: Career and employment coaching

Focuses on enhanced approaches to discovering employment opportunities and providing career coaching, with an emphasis on unemployed veterans. Topics include discovering the unique capabilities a job-seeking veteran possesses, addressing the barriers to employment he or she may face, and methods the job seeker can use to educate prospective employers about the contributions to organizational success he or she can make. Cross-listed with MGMT 4481. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6782 - Human Resources Management: Connecting talent with business needs

Focuses on methods for connecting businesses and public-sector organizations with job seekers who possess the capabilities that will fuel profitable growth and mission success. Topics include networking to establish relationships with hiring decisions makers, exploration conversations to identify an organization's success factors, and identifying job seekers (with a special emphasis on unemployed veterans) with the requisite skills, knowledge, traits, and aptitudes. Cross-listed with MGMT 4482. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6800 - Special Topics in Management

Current topics in management will be occasionally offered. Consult the 'Schedule Planner' for specific offerings or contact an advisor for information. Repeatable. Max Hours: 6 Credits.

Semester Hours: 3 to 3

MGMT 6801 - Career Strategies

The downsizing, restructuring, and re-engineering so prevalent in U.S. industries and companies have strongly affected the job and career market. Every individual must sharpen his/her competencies and skills in order to compete effectively in the changing job market. This course is designed to assist students in understanding and operating in this difficult job market. Using many of the concepts that organizations use in their strategy formulation process, and coupled with individual techniques and skills proven effective in job searches and career planning, this course prepares students to deal with the issues involved in finding a job and pursuing a career. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6803 - Visionary Leadership

Examines the challenges faced by visionary leaders and the approaches used by these individuals (creation, articulation, and implementation of vision) to transform organizations. Participants utilize these approaches employed by effective leaders to develop plans for their own organizational success. Group experiences, applied readings, and videos are used to clarify the opportunities available. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6804 - Bargaining and Negotiation

Designed as a seminar in bargaining, negotiation and interpersonal conflict management. Through simulations, role plays and personal experience, students practice and develop their negotiation skills and see how negotiations differ depending on the type of situation encountered. Specific topics covered include: the nature of negotiation, the role of the negotiation context, interdependence and power, strategies and tactics of distributive and integrative bargaining, negotiation ethics and interpersonal conflicting resolution. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6806 - Corporate Entrepreneurship

Competitive performance in a global economy requires continuous innovation and new business growth. The creation and development of new ventures is a primary strategy for internally-generated growth. Managing innovation and new ventures requires attitudes, knowledge, and practices different from those usually required for the management of mature business units. This course provides the perspective, knowledge, and specific skills required for successful entrepreneurial management. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6808 - Leadership Development

Instruction in the design and practice of leadership development. Case studies of effective organizations will be examined and a variety of assessment and development activities will be completed as part of the course. Students will learn how to develop others while experiencing the development techniques first hand. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MGMT 6820 - Management Field Studies

The objective of this course is to provide an opportunity for the in-depth examination of an actual management problem in a local organization. Much like an independent study conducted under faculty guidance, each student will execute a unique project suited to his or her interests. Priority is given to MGMT students. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MGMT 6821 - Managing for Sustainability

This course will consider how companies are using social responsibility as a competitive advantage. The so-called green revolution is calling for organizations to take on increasing responsibility for environmental conservation, employee well being, and community development. This course considers how organizations can work with various stockholders (employees, customers, communities, society-at-large) to develop and promote mutually beneficial products and solutions to key social needs and concerns. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MGMT 6822 - Business Ethics and Corporate Social Responsibility

Covers business ethics and corporate social responsibility in the global contexts of employment, marketing, product liability, the environment and other areas. Students compare ethical theories, including utilitarianism, Kantian, Rawlsian, stockholder, stakeholder and social contract and apply some or all of these theories to actual and hypothetical case studies. The doctrine of corporate social responsibility is defined and explored and diverging views of corporate social responsibility are discussed. Examples of how corporate social responsibility can increase a company's goodwill and net income are analyzed. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MGMT 6823 - The Sustainable Business Opportunity

This course examines the negative impact of a rapidly growing global economy on the natural and human environment. It shows that the need to create a more sustainable global economy represents a huge opportunity for business and how sustainability-based strategies drive innovation, competitive advantage and improved financial performance. It will examine both environmental aspects of sustainability like green supply chains, lifecycle analysis, energy and

water efficiency, as well as initiatives that nurture and enhance the value of our human resources such as community development, employee and customer relations, employee wellness, telecommuting, and other stakeholder engagement in sustainability. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6824 - Sustainable Business/CSR Field Study

Gain practical, hands-on experience with aspects of sustainable business and/or corporate social responsibility. Work with a local company/non-profit/or government organization under the direction of an executive to conduct a sustainability-focused project which is important to the organization's sustainability initiative. Prereq: Completion of one or more sustainability focused courses or permission of instructor. Cross-listed with MGMT 4824. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6825 - Sustainable Change Leadership: Turning Business Into a Force for Good

This course develops leadership from the perspective of managing the people side of change required to transform a traditional business to one that is not only financially successful but also a genuine "force for good" for our natural and social environment. The B Lab Impact Assessment tool is used to measure, monitor, and link sustainable business practices to drive continuous improvement and innovation. Students will conduct hands-on, practical work with local businesses to develop change leadership skills as they relate to sustainability. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Cross-listed with MGMT 4825. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6826 - Business and the Natural Environment

Considers the impact of economic activity on the natural environment and the regulatory, market and corporate voluntary responses to reducing this impact. Topics: externalities, life cycle assessment, closed-loop systems, DfE (Design for the Environment), corporate sustainability reporting, and effective corporate sustainability strategies. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6827 - Global Climate Change

Global climate change may be one of the most important challenges facing business in the 21st century. This course will introduce the potential impacts of climate, then discuss possible regulatory responses to and business risks and opportunities that may emerge if climate change occurs. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6830 - Sports and Entertainment Management

This course is designed as a speaker series of sports and entertainment industry elite focusing on: industry trends, strategic planning, managing revenue streams, managing media, managing for effectiveness, managing post-merger integration, leadership and leading change. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6832 - Law and Negotiation in the Sports/ Entertainment Industries

Provides an overview of major legal issues in the sports and entertainment industries. Students develop the skills required to negotiate contracts in these industries. Topics include contracts with athletes (agency, player and sponsorship), stadium financing and sports franchises, labor law and collective bargaining agreements, entertainment contracts in the music, film and live theater fields and copyright, trademark and tort law principles in the sports and entertainment industries. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6834 - London Calling: Global Sports and Entertainment Management

Through 2 weeks of visiting organizations and talking with industry elite in London a broader perspective on the Sports and Entertainment Industry is gained. Students will be asked to do advanced reading, participate in discussions, keep a journal and write a reflection paper at the end of the experience. Site visits (to be confirmed) include: Arsenal Football Club, Premier League, the O2 Arena, NHL and NBA regular season games in London, 2012 Olympics Committee, Formula One, Hollywood Studio-International Finance Office, Theatre, Lord's Cricket Ground, All England Lawn Tennis Club/Wimbledon and the office of the Minister of Sport. Cross-listed with MGMT 4834, MKTG 4834, and MKTG 6834. Restrictions: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MGMT 6840 - Independent Study

Instructor approval required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

MGMT 6950 - Master's Thesis

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

Marketing

MKTG 1000 - Introduction to Marketing

Provides an introduction and overview of marketing. Discusses market and buyer analysis. Includes product planning, pricing, promotion and distribution of goods and services. For non-

business majors only. Does not satisfy the MKTG 3000 business requirement. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 2939 - Internship

Introductory supervised experiences involving the applications, concepts and skills in an employment situation. Prereq: sophomore standing Max hours: 1 Credit. **Semester Hours:** 1 to 1

MKTG 3000 - Principles of Marketing

Focuses on the basic marketing concepts of Buyer Behavior, Marketing Research, Marketing Planning and Implementation and the marketing process of product, price, distribution and promotion. This is a business core course therefore a grade of a 'C' or better must be earned to satisfy graduation requirements. Restriction: Restricted to undergraduate students at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 3100 - Marketing Research

Provides practical experience in research methodologies, planning an investigation, designing a questionnaire, selecting a sample, interpreting results and making a report. Techniques focus on attitude surveys, behavioral experiments, and qualitative research. Prereq: DSCI/BANA 2010 with a 'C-' or higher and MKTG 3000 with a grade of 'C' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 3200 - Consumer Behavior

Focuses on improving the student's understanding of consumer and organizational buying behavior as a basis for better formulation and implementation of marketing strategy. Blends concepts from the behavioral sciences with empirical evidence and introduces buyer research techniques. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 3300 - Social Media in Business

Social media has become a central component of many business activities including marketing, HR, product management and the supply chain. In this course, we examine the organizational use of social media technologies such as blogs and social networks, as well as the use of social media analytics to drive business strategy. Prereq: MKTG 3000 with a grade of C or higher Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ISMG 3300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 3939 - Internship

Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MKTG 4000 - Advertising

Analyzes principles and practices in advertising from a managerial viewpoint. Considers the reasons to advertise, product and market analysis as the planning phase of the advertising program, media selection, creation and production of advertisements, copy testing, and development of advertising budgets. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4050 - Applied Marketing Management

The course is designed to enhance the student's ability to formulate and implement a marketing plan and to better understand the relationship of marketing to other business functions. Emphasized application of marketing concepts through the use of cases, simulations or projects. Prereq: MKTG 3000 with a grade of 'C' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4051 - Honors Applied Marketing Management

Offered as the second course in a sequence following the principles of marketing course (MKTG 3000) it is therefore designed to enhance the student's ability to formulate and implement a marketing plan and to better understand the relationship of marketing to other business functions. It will emphasize application of marketing concepts through the use of cases, simulations or projects. This Honors course is modeled after understanding of the concepts covered. Note: MKTG 4051 is open only to marketing majors who have a cumulative GPA of 3.2 or higher. Students taking MKTG 4051 cannot receive credit for MKTG 3050 or MKTG 4050. Prereq: MKTG 3000, cumulative GPA of 3.2 or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4200 - International Marketing

Studies managerial marketing policies and practices of firms marketing their products in foreign countries. Analytical survey of institutions, functions, policies, and practices in international marketing. Relates marketing activities to market structure and environment. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a

junior standing or higher. Cross-listed with INTB 4200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4220 - Asian Business Development and Marketing

This course investigates methods of Business Development and Marketing in the Asian Business Environment. It seeks to examine and explain methods of determining market potential and techniques tapping this market potential in this dynamic and rapidly growing business environment the course uses a combination of experienced guest speakers, Asian business cases and projects to develop the marketing skills in students to successfully compete in Asia. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4250 - Sports Marketing

This course is designed to understand and evaluate the role and functions of marketing in sports organizations. The course seeks to evaluate the marketing function in sports as well as understand the behavior of fans as consumers, celebrity product endorsements, sponsorship of sporting events for all sport providers, sports intermediaries and channels and advertising and promotion in the sports world. The course is taught using lectures, guest speakers, cases and examinations. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4251 - Music and Media Marketing

This course explores strategies, tactics and best practices utilized in the marketing of music, performing and dramatic arts. From recording artists and movie studios to repertory theater companies and symphony orchestras, artists and organizations need sound marketing strategies to engage audiences, sell tickets, and market merchandise to maintain profitable and sustainable operations. Restriction: Restricted to undergraduate Business Students with Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4252 - The Business of Sports

This course focuses on strategic business issues in the sports industry. It covers business issues for both spectator sports and individual participant Sports. Spectator sports include football, basketball, hockey, baseball, extreme competitive sports, Olympic sports etc.). Participant sports include outdoor adventure Sports (e.g., Hiking, whitewater rafting, Biking), skiing, golf, tennis, and youth sports. Topics include industry trends, strategic planning, management challenges, financing in sports, and major legal issues in sports. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4580 - International Transportation

Analysis of international transportation (primarily sea and air) in world economy. Detailed study of cargo documentation and freight rate patterns. Included are liability patterns, logistics, economics, and national policies of transportation. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4620 - Customer Service Strategies

This course is designed to help students identify and effectively use managerial concepts of customer service. Students will develop an understanding of the concepts as well as knowledge of the strategies that will lead to higher levels of customer satisfaction, loyalty and ultimately customer retention. Students will have the opportunity to gain firsthand knowledge of these concepts and strategies through lectures, guest speakers, cases and projects. Prereq: MKTG 3000 with a C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4700 - Personal Selling and Sales Management

Introduces the student to principles of personal selling and issues in managing the field sales force. Focuses on models of personal selling, recruiting, selection, training, compensation, supervision, and motivation, as well as organizing the field sales force, sales analysis, forecasting and budgeting. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4720 - Internet Marketing

Distinctly influences the way marketers conduct marketing activities. The Internet media promises to establish marketing theories, identifies obsolete situations, explores how marketing functions have irreversibly changed as a result of the internet, and outlines basic marketing strategies for successful online marketing. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Cross-listed with ENTP 4720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4730 - New Product Development for Consumer and Sports Products

The creation of new products is essential in today's business environment. It is conducive to organizational growth and long-term survival. This course addresses the new product development process in depth. It introduces students to key concepts and issues. It also provides a series of practices which will help students deliver higher value and be more competitive. Prereq: MKTG 3000 with a C or higher. Restriction: Restricted to undergraduate

Business majors at a junior standing or higher. Cross-listed with ENTP 4730. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4760 - Customer Relationship Management

This marketing-theory driven course examines customer relationship management (CRM) as a key strategic process for organizations. Composed of people, technology and processes, effective CRM optimizes the selection or identification, acquisition, growth and retention of desired customers to maximize profit. Besides presenting an overview of the CRM process, its strategic role in the organization and its place in marketing, students have an opportunity to create simulated CRM database using popular software package that help to illustrate what CRM can do, its advantages and limitations. Prereq: MKTG 3000 with a grade of C or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Cross-listed with ISMG 4760. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4780 - Preparing Business Plan

Turn a new business idea into a viable new business by developing a comprehensive business plan including: analysis of the potential demand for the product or service and potential customers; identify competitive advantages and marketing strategies; generate pro forma financial projections; and, design the management team needed. Prereq: ENTP 3000 AND either ENTP 3500 with a grade of 'C-' or higher or BLAW 4120 or ENTP 3120 with a grade of 'C' or higher. For non-business majors only. Can be applied to Entrepreneurship Certificate. Business majors enroll in either MGMT 4780 or MKTG 4780. Come to first class meeting with a carefully considered business idea. Cross-listed with MGMT 4780 and ENTP 3780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4800 - Marketing Seminar

Offered to provide consideration of a wide variety of topical issues in marketing, such as, services marketing, pricing, product development or creative marketing strategies. Prereq: MKTG 3000. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4834 - Global Sports & Entertainment Management

Through 2 weeks of visiting organizations and talking with industry elite in London a broader perspective on the Sports and Entertainment Industry is gained. Students will be asked to do advanced reading, participate in discussions, keep a journal and write a reflection paper at the end of the experience. Site visits (to be confirmed) include: Arsenal Football Club, Premier League, the O2 Arena, NHL and NBA regular season games in London, 2012 Olympics Committee, Formula One, Hollywood Studio-International Finance Office, Theatre, Lord's Cricket Ground, All England Lawn Tennis Club/Wimbledon and the office of the Minister of Sport. Cross-listed with MGMT 4834, MGMT 6834, and MKTG 6834. Prereq: MGMT 3000.

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 4840 - Independent Study

Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

MKTG 4950 - Special Topics

Courses offered on an irregular basis for the purpose of presenting new subject matter in marketing. Prerequisites vary depending upon the particular topic and instructor requirements. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MKTG 5939 - Internship

Supervised experiences involving the applications of concepts and skills in an employment situation. Prereq: 21 semester hours and 3.5 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MKTG 6010 - Marketing Strategy

Focuses on marketing strategy and marketing planning. Addresses the formulation and implementation of marketing plans within the context of the overall strategies and objectives of both profit and not-for-profit organizations. There is heavy emphasis on group projects and presentations. Note: This course is intended to be taken near the end of your program. Prereq: BUSN 6560 completed with a C or better. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6020 - Marketing Challenges at the Global Frontier

Explores problems, practices, and strategies involved in marketing goods and services internationally. Emphasized analysis of uncontrollable environmental forces, including cultures, governments, legal systems, and economic conditions, as they affect international marketing planning. Emphasis on practice through the use of projects and speakers. Coreq: BUSN 6560. Instructor may waive coreq for business students. Restriction: Restricted to graduate business students or NDGR majors and a sub-plan of NBA or NBD. Note: students cannot receive credit for both MKTG 6020 and INTB 6026. Cross-listed with INTB 6026. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6030 - Sales and Sales Force Management

Focuses on issues in personal selling and managing the field sales force. Deals with organization sales analysis, forecasting, budgeting and operating, with particular emphasis on the selling

task, recruiting, selection, training, compensation, supervision and motivation. Coreq: BUSN 6560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6040 - Services Marketing for Traditional and Creative Industries

Service industries such as health care, finance, information, entertainment, retailing, government, and professional services comprise 80% of the total employment and GDP of the US and an increasing share of GDP in both other developed and emerging economies. This course provides students with the skills to design and deliver high quality services, improve customer satisfaction, and effectively manage service organizations. It also addresses how small, medium, and large firms can develop marketing plans and strategies in the current service environment. A variety of teaching methods may be used to demonstrate these concepts, such as cases, projects, field experiences, and/or guest speakers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6050 - Market Research Analytics I

The objectives relate to effective marketing information management and include: (1) developing an understanding of the techniques and procedures that can be used to generate timely and relevant marketing information; (2) gaining experience in developing and analyzing information that is decision oriented; and (3) being able to make recommendations and decisions based on relevant and timely information. Computer analysis and projects are employed. Coreq: BUSN 6560 or 6530 or BANA 6610. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6051 - Market Research Analytics II

This course focuses on advanced topics and applications in marketing research. A variety of teaching techniques will be used. Prereq: MKTG 6050. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6060 - Consumer Intelligence--Psychology and Behavior

Why do consumers buy? How can marketing activities influence buyer behavior? Answers to these questions are key to marketing success & business fortune. In this course, we explore how to understand the heart & soul of consumers & examine the strategic implications of consumer psychology. Course participants conduct a market segmentation project that identifies & dissects various buyer groups within a chosen market. Restriction: Restricted to graduate business students or NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6070 - Brand Identity & Marketing Communication Strategy

A brand's identity has a substantial influence on an organization's financial wealth. But brand identity is not simply the result of a great product or a creative ad. Utilizing many real examples, historic approaches, and current trends, this course explores how integrated marketing communications help build a brand identity that reverberates with consumers. Participants create an integrated marketing communications campaign. Coreq: BUSN 6560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6080 - Marketing in Emerging Markets

Explores problems, practices and strategies involved in marketing goods and services in emerging markets. Emphasizes analysis of uncontrollable environmental forces, including cultures, government, legal, systems and economic conditions as they affect marketing planning. Coreq: BUSN 6560. Note: students cannot receive credit for both MKTG 6080 and INTB 6082. Cross-listed with INTB 6082. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6090 - Big Data Customer Relationship Management

Involves the management of customer relationships to maximize customer service and its associated benefits at minimal cost. Includes services marketing concepts and techniques, IT applications, and software. Designed to acquaint students with practices and issues in state-of-the-art customer relationship management systems in an array of different types of organizations. The course initially focuses on the nature of customer relationship management (CRM) the interaction between strategic management planning, corporate culture and CRM. Other topics examined include successful models of CRM, managing the employee or CRM interface, marketing research, and CRM, and customer trust, loyalty, CRM customer service levels, customer service levels, customer profitability or metrics, selecting and integrating CRM software, CRM integration and timing of CRM roll-out. Coreq: BUSN 6560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6091 - Strategic Product Marketing

Familiarizes students with key theories and practices regarding products. Successful development of a new product, or extending the life cycle of an existing product. Outlines and necessitates the understanding of product development, key concepts related to successful product management over the course of its life cycle including the way the product function adds synergy to other marketing activities and, in turn, benefits from them. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6092 - Digital Media Marketing - Tools and Analytics

Explores how the marketing function has irreversibly changed as a result of the internet and to lay out basic marketing strategies for successful online marketing. Coreq: BUSN 6560. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6093 - Hot Topics in Digital Marketing

Students attend The Digital Marketing Summit Conference in Denver, CO. Conference speakers include Leaders in the field of Digital Marketing. Participants will learn about the latest & greatest hot trends in Digital Marketing going on NOW! This conference also includes networking sessions with national industry Leaders and Denver's "Digiterati" community. Numerous state of the art topics include Content Marketing, Search & SEO, Social Media, Mobile, Social Intelligence Data, Wearables, and Engagement. The course builds on this content in a HYBRID format in which participants continue to engage in online learning & discussion, while applying these concepts to create their own unique digital programs. The Digital Conference constitutes the classroom portion of the course and the remainder is completed via additional reading & application under the direction of the course Professor. Enrollment is limited so make plans early. Contact the Director of the Marketing Discipline (Vicki.lane@ucdnever.edu) to reserve your spot. Special conference fees apply. Restriction: Restricted to graduate majors within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6094 - Marketing Issues in the Chinese Environment

This course assesses numerous marketing and marketing related topics in the Chinese environment with the objective of helping the graduate student develop managerial and marketing expertise. In specific, the course pinpoints key developments in the Chinese business environment, develops expertise in conducting market opportunity analysis, assesses market entry conditions and strategies and applies marketing mix strategies in the context of the Chinese environment. Note: It is recommended for students to take BUSN 6560 or INTB 6000 prior to this course. Cross-listed with INTB 6094. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6200 - Marketing Intelligence and Metrics

Every manager knows that effective marketing is critical to successfully competing in today's dynamic business environments. Unfortunately, most managers are not clear on how to assess the financial impact of their firms' marketing vehicles, programs or systems. To provide the needed clarity, this course offers a toolkit of skills that will help in three areas, 1) identifying what to assess, 2) making accurate assessments, and 3) applying the results to future decisions. Having a holistic understanding of market-based action-outcomes is essential for both marketing professionals and all managers with customer-based, profit and loss responsibility, especially those looking to give their careers a long-term competitive edge. Coreq: BUSN 6560. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6700 - Marketing Travel Study

This is a 2-week travel course, designed to focus on the marketing of the specific country we visit. In the past the travel course has been to Spain and Costa Rica, but the country of destination may be different every time (usually offered every other year). While in the country, students will visit companies (such as advertising agencies, marketing research firms, local grocery stores, marketing departments of multinational corporations, etc.), have lectures/discussions on marketing in that country and work on a marketing plan for a local company or not-for-profit organization. Prereq: BUSN 6560 with a C or higher. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6800 - Topics in Marketing

Courses offered irregularly for the purpose of presenting new subject matter in marketing. Consult the current 'Schedule Planner' for semester offerings. Prereq: BUSN 6560. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MKTG 6820 - Sports & Entertainment Marketing

This course focuses on techniques for formulating marketing plans for various types of sports organizations. The course deals with marketing issues particularly germane to sports organizations such as: fans as consumers, fan loyalty, sports pricing, servicescapes, player development and sports sponsorships. This course includes lectures, guest speakers, cases, examinations and student group projects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6822 - "Fan"tastical Consumers of American Sports and Entertainment

This course explores the study of consumer behavior via the lens of American Sports and Entertainment. Class occurs while students attend a variety of sports and entertainment performances. Students engage in experiential learning via participant and observation research techniques as they attend live performances of American sports and entertainment. The class will attend and study consumers and fans in a variety of venues, (e.g., Baseball, LaCrosse, Fun Run, Hike, Golf, Symphony, Rock Concert Festival, Jazz Concert Festival, American Ninja Warrior filming, Broadway Play, Cirque de Solei, and Museum exhibition). These performances primarily take place in downtown centers, e.g., Pepsi Center, Denver Performing Arts Complex, Coors Field, Sports Authority Field at Mile High, Walk or run through various Denver parks, 16th St. Mall, The Civic Center, the Denver Art Museum. Students will engage in observational and immersive consumer behavior research techniques as part of their experience. They will complete assignments relevant for consumer understanding and business practice. Special fee. Co-Req: BUSN 6560. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6824 - Sales and Negotiation for Consumer, Services, Sports, and Entertainment Industries

This course focuses on developing sales skills and techniques for success in the sports and entertainment industries. Students also develop the skills required to negotiate contracts in these industries. Coreq: BUSN 6560. Restriction: Restricted to graduate business students or NDGR majors and a sub-plan of NBA or NBD. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6826 - The Sports and Entertainment Industry

This course is designed as a speaker series of sports and entertainment industry elite focusing on: industry trends, strategic planning, management challenges, financing in sports and entertainment business (e.g., stadium/venue financing, sports team valuation, entertainment event guarantee estimation, player/artist salary issues, franchises, and managing disparate revenue streams), and major legal issues in the sports and entertainment industries (entertainment contracts, copyright, trademark and tort law). Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6830 - Marketing & Global Sustainability

Marketing & Global Sustainability focuses on the role of marketing in sustainable for-profit and not-for-profit companies from a global perspective. The course examines sustainable business practices and trends; green brands, green labels, and greenwashing; socially-conscious and "green" customer segments; innovating for sustainable new products and services; sustainable retailing and supply chains; and sustainability as a competitive advantage. The course will employ a variety of pedagogical techniques including lectures, discussion, guest speakers, case studies, and projects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6834 - Global Sports & Entertainment Management

Through 2 weeks of visiting organizations and talking with industry elite in London a broader perspective on the Sports and Entertainment Industry is gained. Students will be asked to do advanced reading, participate in discussions, keep a journal and write a reflection paper at the end of the experience. Site visits (to be confirmed) include: Arsenal Football Club, Premier League, the O2 Arena, NHL and NBA regular season games in London, 2012 Olympics Committee, Formula One, Hollywood Studio-International Finance Office, Theatre, Lord's Cricket Ground, All England Lawn Tennis Club/Wimbledon and the office of the Minister of Sport. Cross-listed with MGMT 4834, MGMT 6834, and MKTG 4834. Restriction: Restricted to graduate business school students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MKTG 6840 - Independent Study

Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Prereq: Permission of instructor. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

Master of Integrated Sciences

MINS 5000 - Topics

With prior approval by a candidate's advisor, an MIS candidate may enroll in an upper division course in science, computer science, mathematics, and complete additional work for graduate credit. Prereq: MIS candidate with 12 hours of upper division (4000 level) or graduate level work completed. Term offered: fall, spring, summer. Repeatable. Max Hours: 8 Credits.

Semester Hours: 3 to 4

MINS 5200 - Research Methods in Interdisciplinary Science

This course introduces methods used in interdisciplinary research in the physical and natural sciences, mathematics, and computer science and prepares students for developing research-based Master's project/thesis proposals. Topics include the scientific method and ethics, experimental design, data collection and analysis, literature searches, evaluation of scientific literature, scientific writing, and oral presentation. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MINS 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MINS 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MINS 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MINS 5950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: advisor approval. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

MINS 5960 - Master's Project

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: advisor approval. Term offered: fall, spring, summer. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 4

Math Content Knowledge for Ed

MCKE 3041 - Number and Operation

First of three courses designed for prospective elementary teachers. Emphasis placed on the real number system and arithmetic operations. Explorations focus on place value, additive and multiplicative reasoning, the division algorithm and rational numbers. Content presented using problem solving and exploration. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 3042 - Algebra, Probability and Data Analysis

Second of three courses designed for prospective elementary teachers. Emphasis placed on algebra, probability, and data analysis. Explorations focus on representing, analyzing, generalizing, formalizing, and communicating patterns and probabilities. Content presented using problem solving and exploration. Note: This course assumes that students have taken MCKE 3041. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 3043 - Geometry and Measurement

Third of three courses designed for prospective elementary teachers. Emphasis placed on developing spatial reasoning skills in geometry and measurement. Explorations focus on two- and three-dimensional shapes, their properties, measurements, constructions, and transformations. Note: This course assumes that students have taken MCKE 3041. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MCKE 5004 - Statistics and Probability

Studies the collection, presentation, and analysis of data; and elements and applications of counting discrete probability. Includes real world applications and technology. Concepts are linked to other scientific, mathematical, and pedagogical domains. This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Prereq: permission of project director. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5005 - Geometry

Systematic study of advanced geometric concepts: history of geometry and measurement, patterns among shapes, 2- and 3-dimensional shapes, constructions, symmetry or transformational geometry. Includes applications and activity-oriented instruction. Concepts are linked to other scientific, mathematical, and pedagogical domains. This course is not applicable toward any degree in the College of Liberal and Sciences. Prereq: permission of project director. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MCKE 5006 - Mathematics of Change

Systematic study of the application of calculus to the analysis of changing systems in real world applications. Emphasizes the connections that exist between calculus and aspects of middle school curricula. Concepts are linked to other scientific, mathematical, and pedagogical domains. This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 5000 or equivalent. Prereq: Graduate standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5007 - Discrete Math--Counting the Possibilities

Systematic study of basic techniques in discrete mathematics and their various applications: permutations and combinations, inclusion or exclusion, pigeonhole principle, graph theory, and recursive pattern solving. Applications to topics such as network analysis and voting theory are stressed. Concepts are linked to other scientific, mathematical, pedagogical domains. This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 5000 or equivalent. Prereq: Graduate standing. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MCKE 5008 - Discovery and Use of the History of Math

Systematic study of the people, events, ideas and issues from the history of mathematics, focusing on historical topics that are central to the discipline and teaching of mathematics and emphasizing web research of historical topics of interest. Concepts are linked to other scientific, mathematical, and pedagogical domains. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Prereq: permission of the project director. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MCKE 5009 - Math Modeling--Using and Applying Math

Systematic study of math modeling using algebra, geometry, discrete mathematics, rates of change, and statistics to solve real-world problems in areas such as finance, biology, economics, and physics. Concepts are linked to other scientific, mathematical, societal, and pedagogical domains. This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 5009 or equivalent. Prereq: Graduate standing. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MCKE 5018 - Topics in Mathematics Education for Teachers

Topics vary from semester to semester. Designed for professional mathematics teachers. This course will not count towards a degree in Applied Mathematics. Consent of the instructor required for enrollment. Repeatable. Max Hours: 50 Credits. **Semester Hours:** 0.3 to 50

MCKE 5140 - Introduction to Modern Algebra

Studies the fundamental algebraic structures used in modern mathematics. Topics include groups, rings, fields, and polynomials. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 3000 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 4140. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5210 - Higher Geometry I

Studies the foundations of modern geometry by examining axiomatic systems for various geometrics, with an emphasis on non-Euclidean hyperbolic geometry. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 3000 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 3210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5310 - Introduction to Real Analysis I

Calculus of one variable, the real number system, continuity, differentiation, integration theory, sequence and series. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 2421 and MATH 3000 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 4310. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5408 - Applied Graph Theory

Introduces discrete structures and applications of graph theory to computer science, engineering, operations research, social science, and biology. Topics include connectivity, coloring, trees, Euler and Hamiltonian paths and circuits, matching and covering problems,

shortest route and network flows. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 3000 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 4408. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5409 - Applied Combinatorics

Major emphasis is on applied combinatorics and combinatorial algorithms, with applications in computer science and operations. Topics include general counting methods, generating functions, recurrence relations, inclusion-exclusion, and block designs. Note: This course is not applicable toward any degree in the College of Liberal Arts and Sciences. Note: this course assumes that students have completed MATH 3000 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 4409. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MCKE 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Math Education

MTED 3040 - Mathematics for Elementary Teachers

Key mathematical concepts for K-6 teachers informed by NCTM & Common Core State Standards, such as place-value number systems, rational, proportional, & algebraic reasoning, geometrical concepts, & statistical/probability ideas. Students' meaningful, enjoyable learning is promoted via problem solving activities. Cross-listed with MTED 5400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 4002 - Elementary Mathematics Teaching I

Prepares elementary teachers to teach mathematics to PreK-6 students while applying principles of the National Council of Teachers of Mathematics to mathematical learning. Teachers explore ways to help all elementary students become flexible and resourceful mathematical problem solvers. Cross-listed with MTED 5002. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 4003 - Elementary Mathematics Teaching II

Develops the mathematical and pedagogical understandings and competence of elementary teachers, focusing on instructional assessment, principles, and practices. Cross-listed with MTED 5003. Prereq: MTED 4002. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 4300 - Curriculum and Methods for Teaching Mathematics

Fosters teachers' use of task-based mathematics pedagogy, including orchestrating students' mathematical discourse, to develop mathematics classrooms in which the teacher builds from students' current understandings, accommodates for students' differences, and has high expectations for all students. Cross-listed with MTED 5300. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 4301 - Assessment and Equity in Mathematics Instruction

Examines mathematics assessment and equity from both a teacher's and a student's perspective. Focuses on assessment as a process, during which a teacher gathers evidence of students' mathematical knowledge and understanding and then uses that evidence to make instructional decisions. Restriction: Professional Year Admission required. Cross-listed with MTED 5301. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5002 - Elementary Mathematics Teaching I

Prepares elementary teachers to teach mathematics to PreK-6 students while applying principles of the National Council of Teachers of Mathematics to mathematical learning. Teachers explore ways to help all elementary students become flexible and resourceful mathematical problem solvers. Cross-listed with MTED 4002. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5003 - Elementary Mathematics Teaching II

Develops the mathematical and pedagogical understandings and competence of elementary teachers, focusing on instructional assessment, principles, and practices. Cross-listed with MTED 4003. Prereq: MTED 4002 or MTED 5002. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5030 - Theories Of Mathematics Learning

Develops educators' knowledge of foundational theories and conceptual frameworks in mathematics education. MTED 5030 and 7030 are cross-listed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5040 - Mathematics Teaching - Theory and Practice

Develops educators' research-based understandings and practices of PreK-12 mathematics teaching and learning. MTED 5040 and 7040 are cross-listed. Repeatable. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MTED 5050 - Critique Of Mathematics Education Research

Develops educators' understanding of various research studies in mathematics education, including research focusing on mathematics teaching and learning, attending to students' mathematical reasoning, and teaching mathematics for social justice and equity. Increases educators' competence, confidence and enthusiasm in critiquing research. MTED 5050 and 7050 are cross-listed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5060 - Developmental Pathways In Students' Mathematical Thinking

Fosters educators' development of research-based ways of determining (a) what to look for, (b) how to look for, (c) how to synthesize and report on, and (d) how to incorporate in pedagogy data-grounded inferences about children's mathematical thinking. MTED 5060 and 7060 are cross-listed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5070 - (Re)Humanizing the Teaching and Learning of Mathematics

Expands educators' conceptions of society's role in determining what counts as mathematics to be taught and learned. Develops understanding of historical and systemic marginalization in mathematics education. Increases abilities to address issues of privilege and oppression that impact students' opportunities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5300 - Curriculum and Methods for Teaching Mathematics

Fosters teachers' use of task-based mathematics pedagogy, including orchestrating students' mathematical discourse, to develop mathematics classrooms in which the teacher builds from students' current understandings, accommodates for students' differences, and has high expectations for all students. Cross-listed with MTED 4300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5301 - Assessment and Equity in Mathematics Instruction

Examines mathematics assessment and equity from both a teacher's and a student's perspective. Focuses on assessment as a process, during which a teacher gathers evidence of students' mathematical knowledge and understanding and then uses that evidence to make instructional decisions. Prereq: Concurrent enrollment in an internship or permission of instructor. Cross-listed with MTED 4301. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5400 - Mathematics for Elementary Teachers

Key mathematical concepts for K-6 teachers informed by NCTM & Common Core State Standards, such as place-value number systems, rational, proportional, & algebraic reasoning, geometrical concepts, & statistical/probability ideas. Students' meaningful, enjoyable learning

is promoted via problem solving activities. Cross-listed with MTED 3040. Max hours: 3 Credits.
Semester Hours: 3 to 3

MTED 5619 - Expanding Conceptions of Number: Quantity and Operation

Teachers' learning will focus on quantities and operations in place value number systems, how students understand such systems, and how teaching may promote students' progress. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5620 - Developing Fractional & Proportional Reasoning

Teachers' learning will focus on quantities and operations involved with ratio, fraction, and proportion; and on how students understand ratio, fraction and proportion; and how teaching may promote students' progress. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5621 - A World of (Different) Numbers: Quantity and Operation

Develops K-12 teachers' understanding of number systems and the ability to foster students' understanding. Focuses on number, quantity, and operation. Applicable to teaching students at all grade levels in line with the K-12 Common Core Standards. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5622 - Expanding Conceptions of Algebra

Develops K-12 teachers' understanding of algebra concepts and the ability to foster students' understanding. Focuses on equivalence, variable, covariation, and function. Applicable to teaching students at all grade levels in line with the K-12 Common Core Standards. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5623 - Geometrical Ways Of Reasoning

Develops K-12 teachers' geometrical reasoning and the ability to foster students' reasoning. Addresses transformation, measurement, classification, objects, imagery, formulas, and investigation. Applicable to teaching students at all grade levels in line with the K-12 Common Core Standards. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 5840 - Math Education Independent Study

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

MTED 7030 - Theories Of Mathematics Learning

Develops educators' knowledge of foundational theories and conceptual frameworks in mathematics education. MTED 5030 and 7030 are cross-listed. Max hours: 3 Credits.

Semester Hours: 3 to 3

MTED 7040 - Mathematics Teaching - Theory and Practice

Develops educators' research-based understandings and practices of PreK-12 mathematics teaching and learning. MTED 5040 and 7040 are cross-listed. Repeatable. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MTED 7050 - Critique Of Mathematics Education Research

Develops educators' understanding of various research studies in mathematics education, including research focusing on mathematics teaching and learning, attending to students' mathematical reasoning, and teaching mathematics for social justice and equity. Increases educators' competence, confidence and enthusiasm in critiquing research. MTED 5050 and 7050 are cross-listed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 7060 - Developmental Pathways In Students' Mathematical Thinking

Fosters educators' development of research-based ways of determining (a) what to look for, (b) how to look for, (c) how to synthesize and report on, and (d) how to incorporate in pedagogy data-grounded inferences about children's mathematical thinking. MTED 5060 and 7060 are cross-listed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTED 7840 - Math Education Independent Study

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

Mathematics

MATH 1009 - Computer-Based Algebraic Problem Solving

A laboratory-based problem solving course focused on personal computing applications. Topics include general problem solving techniques, deductive reasoning, elementary probability, computer algebraic software, optimization, graphical analysis, systems of equations, spreadsheets, functions, descriptive statistics, linear programming and elementary programming logic. Prereq: basic high school algebra and some familiarity with Microsoft Windows. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 1010 - Mathematics for the Liberal Arts

Designed to give liberal arts students the skills required to understand and interpret quantitative information that they encounter in the news and in their studies, and to make

quantitatively-based decisions in their lives. Topics include a survey of logic and analysis of arguments, identifying fallacies in reasoning, working with numbers and units, linear and exponential relations and essentials of probability and statistics. The emphasis is on applications with case studies in economics, finance, environmental sciences, health, music and science. Note: This course assumes that students have knowledge equivalent to three years of high school mathematics (two years of algebra). Requisite: In order to promote student success, any student who has an ACT MATH score less than 19 (or equivalently an SAT MATH score less than 520) AND a H.S. GPA of less than 3.25 will be required to enroll in the one credit hour co-requisite workshop MATH 1011. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1 **Semester Hours:** 3 to 3

MATH 1011 - Math for Liberal Arts Workshop

Prepares students for college-level mathematics. Students receive one-on-one and small-group instruction on mathematics topics related to college level mathematics success. Coreq: MATH 1010. Term offered: fall, spring. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MATH 1060 - Finite Mathematics

This course is designed to introduce students to mathematics topics commonly encountered by business students. This course meets the universities CORE mathematics requirement. The topics include linear equations and inequalities, linear, quadratic, exponential and logarithmic functions, simple, compound and continuous interest, future and present value annuities, amortization, systems of equations, linear programming, logic, sets and probability. Graphing technology is used extensively and business applications are emphasized throughout. Terms offered: Fall and Spring. Max Hours: 3 Credits.

MATH 1070 - College Algebra for Business

Covers the same mathematical topics as College Algebra, MATH 1110, but with business applications. Note: Graphics calculator required. Note: Students may not receive credit for this course if they have already received credit for MATH 1110 or MATH 1130. Note: 24 on ACT-Math, 560 on SAT-Math or above average performance in intermediate algebra, algebraic literacy or integrated math are strongly recommended as preparation for this course. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 3 to 3

MATH 1080 - Calculus for Social Sciences and Business

A one-semester course in single-variable calculus. Topics include limits, derivatives, differentiation rules, integration and integration rules. Emphasis is on applications to business and social sciences. Note: No knowledge of trigonometry is required. Those planning to take more than one semester of calculus should take MATH 1401 instead of MATH 1080. MATH

1070 or MATH 1110 with a C- or higher is required for students to register for this course. No co-credit with MATH 1401. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 1108 - Stretch College Algebra-Part 1

This course is the first half of a two-semester sequence (consisting of MATH 1108 followed by MATH 1109). The two-semester course sequence is equivalent to MATH 1110 (College Algebra). The topics in algebra are designed for students who intend to take the calculus sequence. An in-depth study of functions, linear and quadratic equations, circles, inequalities, domain & range, piecewise and transformation of functions, mathematical modeling and select other topics are explored. Desmos graphing technology is used extensively and students will review algebraic skills such as factoring and completing the square, graphing techniques and function properties where needed. Applications are emphasized. Note: No co-credit with MATH 1070, MATH 1110 or MATH 1130. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 1109 - Stretch College Algebra-Part 2

This course is the second half of a two-semester sequence (consisting of MATH 1108 followed by MATH 1109). The two semester course sequence is equivalent to MATH 1110 (College Algebra). The topics in algebra are designed for students who intend to take the calculus sequence. Data scatter plots and curve fitting, solving equations, polynomial functions, rational functions, exponential and logarithmic functions and selected other topics are explored. Desmos graphing technology is used extensively and students enrolled in MATH 1109 will review algebraic skills such as solving linear and quadratic equations, factoring and completing the square, graphing techniques and function properties where needed. Applications are emphasized. Note: No co-credit with MATH 1070, MATH 1110 or MATH 1130. Prerequisite: MATH 1108 with a C- or higher. Max hours: 3 Credits.

MATH 1110 - College Algebra

Topics in algebra designed for students who intend to take the calculus sequence. Functions, domains, ranges, graphs, data scatter plots and curve fitting, solving equations and systems of equations, polynomial, rational, exponential and logarithmic functions and other topics. Applications are emphasized. Note: Students may not receive credit for this course if they have already received credit for MATH 1070 or MATH 1130. Prereq: MATH 1109 or MATH 1070 or MATH 1110 or MATH 1120 or MATH 1130 or MATH 1401 with a C- or higher OR entry into the MA10 or MA30 or MA01 Student Group OR ALEKS PPL score 46-100. If you have any questions or concerns about this requisite, please notify MATH.Placement@ucdenver.edu. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 4 to 4

MATH 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: Fall. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

MATH 1120 - College Trigonometry

Topics in trigonometry, analytic geometry, and elementary functions designed for students who intend to take the calculus sequence. Angles and trigonometry functions of acute angles, analytic trigonometry, fundamental trigonometric functions and identities including hyperbolic trigonometry, parametric equations, and polar coordinate system. Graphic calculators and/or computer algebra systems are used extensively. Applications are emphasized. Prereq: MATH 1109 or MATH 1070 or MATH 1110 or MATH 1120 or MATH 1130 or MATH 1401 with a C- or higher OR entry into the MA30 or MA01 Student Group OR ALEKS PPL score 61-100. If you have any questions or concerns about this requisite, please notify MATH.Placement@ucdenver.edu. Students with a grade of B- or better in MATH 1110 or MATH 1070 pass the course at a much higher rate. No co-credit with MATH 1130. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 3 to 3

MATH 1130 - Precalculus Mathematics

Condensed treatment of the topics in MATH 1110 and 1120. Prereq: : MATH 1120 or MATH 1130 or MATH 1401 with a C- or higher OR entry into the MA30 or MA01 Student Group OR ALEKS PPL score 61-100. If you have any questions or concerns about this requisite, please notify MATH.Placement@ucdenver.edu. No co-credit with MATH 1070, 1110 or 1120. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 4 to 4

MATH 1376 - Programming for Data Science

The course provides an introduction to scientific computing using Python. Topics will include programming skills such as assignment, control statements, loops, vectorized operations, and parallel computing. Applications will focus on mathematical and data science topics such as optimization, data simulation, and model fitting. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 1401 - Calculus I

First course of a three-semester sequence (MATH 1401, 2411, 2421) in calculus. Topics covered include limits, derivatives, applications of derivatives, and the definite integral. Note: No co-credit with MATH 1080. Prereq: MATH 1109 or MATH 1070 or MATH 1110 with a C- or higher and MATH 1120 with a C- or higher or MATH 1130 with a C- or higher or MATH 1401 with a C- or higher OR entry into the MA01 Student Group OR ALEKS PPL score 76-100. If you have any

questions or concerns about this requisite, please notify MATH.Placement@ucdenver.edu. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

MATH 1840 - Independent Study.

Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

MATH 2411 - Calculus II

The second of a three-semester sequence (MATH 1401, 2411, 2421) in calculus. Topics covered include exponential, logarithmic, and trigonometric functions, techniques of integration, indeterminate forms, improper integrals and infinite series. Prereq: C- or better in MATH 1401. Note: Students with a grade of B- or better in MATH 1401 pass this course at a much higher rate. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 4 to 4

MATH 2421 - Calculus III

The third of a three-semester sequence in Calculus (MATH 1401, 2411 and 2421). Topics include vectors, vector-valued functions, partial differentiation, differentiation, multiple integration, and vector calculus. Prereq: C- or better in MATH 2411. Note: Students with a grade of B- or better in MATH 2411 pass this course at a much higher rate. Term offered: fall, spring, summer. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1 **Semester Hours:** 4 to 4

MATH 2511 - Discrete Structures

Covers the fundamentals of discrete mathematics, including: logic, sets, functions, growth of functions, algorithms, matrices, mathematical reasoning, proofs, induction, relations, graphs, trees and combinatorics. There is an emphasis on how discrete mathematics applies to computer science in general, and algorithm analysis in particular. Prereq: CSCI 2421. Cross-listed with CSCI 2511. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 2810 - Topics

Topics in mathematics with various subtitles reflecting course content. Prereq: permission of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

MATH 2830 - Introductory Statistics

Basic statistical concepts, summarizing data, probability concepts, distributions, confidence intervals, hypothesis testing. Note: This course assumes that students have knowledge equivalent to three years of high school mathematics (two years of algebra), intermediate

algebra, or Algebraic Literacy at a Colorado Community College at the start of class. Students who have a grade of B- or better in one of these courses pass at a much higher rate. Term offered: fall, spring, summer. Requisite: In order to promote student success, any student who has an ACT MATH score less than 19 (or equivalently an SAT MATH score less than 520) AND a H.S. GPA of less than 3.25 will be required to enroll in the one credit hour co-requisite workshop MATH 2831. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-MA1. **Semester Hours:** 3 to 3

MATH 2831 - Introductory Statistics Workshop

Prepares students for college-level mathematics. Students receive one-on-one and small-group instruction on mathematics topics related to college level mathematics success. Co-req: MATH 2830. Term offered: fall, spring. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MATH 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MATH 3000 - Introduction to Abstract Mathematics

Students learn to prove and critique proofs of theorems by studying elementary topics in abstract mathematics, including logic, sets, functions, equivalence relations and elementary combinatorics. Coreq: MATH 2421 or MATH 3191. Note: This course assumes that students have taken MATH 2411 or equivalent. Students who have a grade of B- or better in MATH 2411 pass at a much higher rate. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3191 - Applied Linear Algebra

Topics include systems of equations, Gaussian elimination with partial pivoting, LU--decomposition of matrices, matrix algebra, determinants, vector spaces, linear transformations, eigen values and applications. Note: No co-credit with MATH 3195. Prereq: C- or better in MATH 2411. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3195 - Linear Algebra and Differential Equations

Presents the essential ideas and methods of linear algebra and differential equations, emphasizing the connections between and the applications of both subjects. The course is designed for students in the sciences and engineering. Note: No co-credit with MATH 3200 and

MATH 3191. Prerequisite: MATH 2411 with a C- or higher. Term offered: fall, spring, summer. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MATH 3200 - Elementary Differential Equations

First and second order differential equations, Laplace transforms, systems of equations, with an emphasis on modeling and applications. Note: No co-credit with MATH 3195. Prerequisite: MATH 2411 with a C- or higher, Co-requisite MATH 3191. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3210 - Higher Geometry I

Studies the foundations of modern geometry by examining axiomatic systems for various geometrics, with an emphasis on non-Euclidean hyperbolic geometry. Prereq: C- or better in MATH 3000. Cross-listed with MCKE 5210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3250 - Problem Solving Tools

Students learn and refine both problem solving techniques and computer programming skills. Examples, exercises, and projects are taken from a wide range of mathematical topics including algebra, calculus, linear algebra and probability. Note: This course will not count toward a graduate degree in applied mathematics. Prereq: MATH 2411. Coreq: either MATH 3191 or MATH 3195. Cross-listed with MCKE 5250. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3301 - Introduction to Optimization in Operations Research

Introduces a mathematical approach for decision-making in practice based on optimization. Students will learn to model, analyze and solve a variety of problems from deterministic operations using both continuous and discrete mathematical programming algorithms and software. Note: this course assumes that students have taken MATH 3191 or MATH 3195 or equivalent. Students who have received a grade of B- or better in MATH 3191 or 3195 pass this course at a much higher rate. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3302 - Simulation in Operations Research

Elementary stochastic processes and standard nondeterministic operations research models solved by simulation: Markov chains, Poisson process, Monte Carlo and discrete-event simulation, queuing theory, and inventory models. Note: This course assumes that students have programming experience (e.g. MATLAB), and have taken MATH 3191 and MATH 3800 or 4810 or equivalent. Students who have a grade of B- or better in MATH 3191 and MATH 3800 or 4810 pass this course at a much higher rate. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3376 - Data Wrangling & Visualization

The course provides an introduction to obtaining, restructuring, and visualizing complex data sets. Students will learn to manipulate many data types, store data in a variety of structures, and construct static and dynamic plots in a variety of contexts. Students earning a B- or better in Math 1376 or 4387 are more likely to be successful in this course than students earning lower grades. Prereq: MATH 1376 or MATH 4387 with a C- or higher and MATH 2830 or MATH 3382 with a C- or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3382 - Statistical Theory

Probability, random variables, properties of distributions, bootstrap methods, maximum likelihood and method of moments estimation, properties of estimators, classical methods for confidence intervals and hypothesis testing. Prereq: MATH 2421 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3440 - Introduction to Symbolic Logic

Covers truth functional and quantificational logic through polyadic first order predicate calculus and theory of identity. Attention is given to such problems in metatheory as proofs of the completeness and consistency of systems of logic. Cross-listed with PHIL 3440. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3511 - Mathematics of Chemistry

Multivariate functions, probability and statistics for chemistry, matrices and vectors, mathematics of reaction kinetics and symmetry point groups. Course covers mathematics needed for CHEM 4511 and 4521. Can also be an elective for the mathematics minor. Prereq: MATH 2411, CHEM 2031 or CHEM 2081, CHEM 2061 or CHEM 2091. Term offered: fall. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MATH 3800 - Probability and Statistics for Engineers

Basic probability theory, discrete and continuous random variables, point and interval estimation, test of hypotheses, and simple linear regression. Note: no co-credit with MATH 4810. Note: This course assumes that students have taken MATH 2411 and have either previously taken MATH 2421 or are taking MATH 2421 the same semester as MATH 3800. Students who have a grade of B- or better in MATH 2411 pass this course at a much higher rate. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MATH 4010 - History of Mathematics

A history of the development of mathematical techniques and ideas from early civilization to the present, including the inter-relationships of mathematics and sciences. Prereq: MATH 2411 with a C- or higher. Coreq: MATH 3000 or 3191. Cross-listed with MATH 5010. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4012 - An Advanced Perspective on Number and Operation

"Advanced study of number and operation, including why the various procedures from arithmetic work and connections to algebraic reasoning. Focuses on using rigorous mathematical reasoning and multiple representations to explain concepts. Note: For undergraduate majors, this course only counts toward the mathematics education option. Note: This course assumes that students have taken MATH 3000 or an equivalent course. Students who have a grade of B- or better in MATH 3000 pass this course at a much higher rate. Cross-listed with MATH 5012. Max hours: 2 Credits. **Semester Hours:** 2 to 2

MATH 4013 - An Inquiry-Based Approach to Geometry

An inquiry-based approach to middle-level and Euclidean geometry. Topics include: polygons and the angle relationships, constructions, Pythagorean theorem and perimeter, area and volume, similarity and congruence, circles. Note: For undergraduate majors, this course only counts toward the mathematics education option. Note: This course assumes that students have taken MATH 3000 or an equivalent course. Students who have a grade of B- or better in MATH 3000 pass this course at a much higher rate. Cross-listed with MATH 5013. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MATH 4014 - Statistical Knowledge for Teaching

A problem-based statistics seminar aimed at secondary teachers. Topics include: the central limit theorem, the law of large numbers, probability, measures of central tendency and variability, sampling distributions, regression, and hypothesis testing. Note: For undergraduate majors, this course only counts toward the mathematics education option. Note: This course assumes that students have taken MATH 3800 or an equivalent course. Students who have a grade of B- or better in MATH 3800 pass this course at a much higher rate. Cross-listed with MATH 5014. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MATH 4015 - Capstone Course for Secondary Teachers

High school mathematics from an advanced perspective: analyses of alternative definitions, extensions and generalizations of familiar theorems; discussions of historical contexts in which concepts arose; applications of mathematics. Note: For undergraduate majors, this course only counts toward the mathematics education option. Note: this course assumes that students

have taken MATH 3210, 4310 and 3140 or equivalent. Cross-listed with MATH 5015. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4027 - Topics in Mathematics

Special topics in mathematics will be covered; consult 'Schedule Planner' for current topics and prerequisites. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

MATH 4110 - Theory of Numbers

Every other year. Topics include divisibility, prime numbers, congruencies, number theoretic functions, quadratic reciprocity, and special diophantine equations, with applications in engineering. Prereq: Grade of C- or better in MATH 3000. Note: Students who have a grade of B- or better in MATH 3000 pass this course at a much higher rate. Cross-listed with MATH 5110. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4140 - Introduction to Modern Algebra

Studies the fundamental algebraic structures used in modern mathematics. Topics include groups, rings, fields and polynomials. Note: This course assumes that students have taken MATH 3000 or equivalent and either MATH 3191 or MATH 3195. Students who have a grade of B- or better in these courses pass at a much higher rate. Cross-listed with MCKE 5140. Prereq: MATH 3000 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4201 - Topology

Metric spaces and topological spaces, compactness, separation properties, and connectedness. Note: This course assumes that students have taken MATH 3000. Students who have a grade of B- or better in MATH 3000 pass this course at a much higher rate. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4220 - Higher Geometry II

Studies affine and projective geometries. Coordinates are introduced in this framework. Planes and higher dimensional spaces are examined. Note: This course assumes that students have taken MATH 3191. Students who have a grade of B- or better in MATH 3191 pass this course at a much higher rate. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4310 - Introduction to Real Analysis I

Calculus of one variable, the real number system, continuity, differentiation, integration theory, sequence and series. Prereq: Prereq: Grade of C- or better in MATH 2421 and 3000. Note: Students who have a grade of B- or better in MATH 2421 and 3000 pass this course at a much

higher rate. Cross-listed with MCKE 5310. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

MATH 4320 - Introduction to Real Analysis II

Convergence, uniform convergence; Taylor's theorem; calculus of several variables including continuity, differentiation and integration; Picard's theorem in ordinary differential equations and Fourier series. Prereq: MATH 4310 with a C- or higher. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4387 - Applied Regression Analysis

Topics include simple and multiple linear regression, model diagnostics and remediation, and model selection. Emphasis is on practical aspects and applications of linear models to the analysis of data in business, engineering and behavioral, biological and physical sciences. Prereq: Grade of C- (1.7) or better in MATH 3191 and in MATH 3800 or 4820 or 3382. Note: Students who have a grade of B- or better in MATH 3191, an A in MATH 3800 or a B- or better in MATH 4820 pass this course at a much higher rate. Cross-listed with MATH 5387. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4390 - Game Theory

Zero-sum and non-zero-sum games; Nash equilibrium and the principle of indifference; Shapley value and other concepts of fair division; Evolutionary game theory, ESS, and evolutionary population dynamics. Applications in economics, business, and biology. Note: This course assumes that students have programming experience (e.g. MATLAB), and have taken MATH 2421, 3191 and 3200 or MATH 3195, MATH 3800 or 4810, or equivalent. Students who have a grade of B- or better in these courses pass this course at a much higher rate. Cross-listed with MATH 5390. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4394 - Experimental Designs

Designs covered will include: completely randomized, complete block, split plot, incomplete block, factorial and fractional factorial designs. Additionally, power and study design for non-experimental studies will be covered. Prereq: Grade of C- or better in MATH 4387 or 5387. Cross-listed with MATH 5394. Term offered: spring of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4408 - Applied Graph Theory

Introduces discrete structures and applications of graph theory to computer science, engineering, operations research, social science, and biology. Topics include connectivity, coloring, trees, Euler and Hamiltonian paths and circuits, matching and covering problems, shortest route and network flows. Prereq: MATH 2511 or CSCI 2511 or MATH 3000 with a C- or

higher. Note: This course assumes that students have taken MATH/CSCI 2511 or MATH 3000. Students who have a grade of B- or better in MATH/CSCI 2511 or MATH 3000 pass this course at a much higher rate. Cross-listed with CSCI 4408 and MCKE 5408. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4409 - Applied Combinatorics

Every other year. Major emphasis is on applied combinatorics and combinatorial algorithms, with applications in computer science and operations. Topics include general counting methods, generating functions, recurrence relations, inclusion-exclusion, and block designs. Prereq: MATH 3000 with a C- or higher. Note: This course assumes that students have taken MATH 3000. Students who have a grade of B- or better in MATH 3000 pass this course at a much higher rate. Cross-listed with MCKE 5409. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4450 - Complex Variables

Infrequent. Topics include complex algebra, Cauchy-Riemann equations, Laurent expansions, theory of residues, complex integration, and introduction to conformal mapping. Note: This course assumes that students have taken MATH 2421 and MATH 3000. Students who have a grade of B- or better in MATH 2421 and MATH 3000 pass this course at a much higher rate. Term offered: spring of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4650 - Numerical Analysis I

Methods and analysis of techniques used to resolve continuous mathematical problems on the computer. Solution of linear and nonlinear equations, interpolation and integration. Prereq: MATH 3191 or MATH 3195 with a C- or higher. Cross-listed with CSCI 4650, 5660, and MATH 5660. Term offered: fall, spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4660 - Numerical Analysis II

Numerical differentiation and integration, numerical solution of ordinary differential equations, and numerical solutions of partial differential equations as time allows. Prereq: MATH 3191 or MATH 3195 with a C- or higher and MATH 3200 with a C- or higher.. Cross-listed with MATH 5661, CSCI 4660 and 5661. Term offered: spring of odd years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4733 - Partial Differential Equations

Infrequent. Initial/Boundary value problems for first-order, wave, heat and Laplace Equations; maximum principles; Fourier Series and applications. Note: This course assumes that students have taken MATH 2421 and MATH 3200, and either have taken MATH 3000 or have experience with partial differential equations in engineering or physics. Students who have a grade of B- or

better in MATH 2421 and MATH 3200 pass this course at a much higher rate. Cross-listed with MATH 5733. Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4779 - Math Clinic

The clinic is intended to illustrate the applicability and utility of mathematical concepts. Research problems investigated originate from a variety of sources--industry, government agencies, educational institutions, or nonprofit organizations. Prereq: consult Schedule Planner or instructor. Cross-listed with MATH 5779. Term offered: fall, spring. Repeatable. Max Hours: 99 Credits. **Semester Hours:** 3 to 3

MATH 4791 - Continuous Modeling

Every other year. Surveys mathematical problems that arise in natural sciences and engineering. Topics may include population models, epidemic models, mechanics, heat transfer and diffusion, tomography, pharmaco-kinetics, traffic flow, fractal models, wave phenomena, and natural resource management. Most models discussed are based on differential and integral equations. Emphasis is formulation and validation of models as well as methods of solution. Note: This course assumes that students have taken MATH 3191 and MATH 3200. Students who have a grade of B- or better in MATH 3191 and MATH 3200 pass this course at a much higher rate. Cross-listed with MATH 5791. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4792 - Probabilistic Modeling

Every other year. Markov chains; Poisson processes, continuous time Markov chains, elementary topics in queuing theory, and some mathematical aspects of Monte Carlo simulation, including random variate generation, variance reduction, and output analysis. Note: This course assumes that students have taken MATH 4810 or 5310 and have some programming experience. Students who have a grade of B- or better in MATH 4810 or 5310 pass this course at a much higher rate. Cross-listed with MATH 5792. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4793 - Discrete Math Modeling

Every other year. Focuses on the use of graph theory and combinatorics to solve problems in a wide variety of disciplines. Applications are selected from computer science, communication networks, economics, operations research, and the social, biological and environmental sciences. Note: This course assumes that students have taken MATH 3191 and MATH 4408. Students who have a grade of B- or better in MATH 3191 and MATH 4408 pass this course at a much higher rate. Cross-listed with MATH 5793. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4794 - Optimization Modeling

Every other year. Principles of model formulation and analysis are developed by presenting a wide variety of applications, both for natural phenomena and social systems. Examples of optimization models to represent natural phenomena include principles of least time and energy. Examples in social systems include resource allocation, environmental control and land management. Specific applications vary, but are chosen to cover a wide scope that considers dichotomies, such as discrete vs. continuous, static vs. dynamic, and deterministic vs. stochastic. Some computer modeling language (like GAMS) is taught. Note: This course assumes that students have taken MATH 2421 and MATH 3191. Students who have a grade of B- or better in MATH 2421 and MATH 3191 pass this course at a much higher rate. Cross-listed with MATH 5794. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4810 - Probability

Examines elementary theory of probability, including independence, conditional probability, and Bayes' theorem; random variables, expectations and probability distributions; joint and conditional distributions; functions of random variables; limit theorems, including the central limit theorem. Note: No co-credit with MATH 3800. Note: This course assumes that students have taken MATH 3191 or equivalent and have either previously taken MATH 2421 or are taking MATH 2421 the same semester as MATH 4810. Students who have a grade of B- or better in MATH 3191 pass this course at a much higher rate. Cross-listed with MATH 5310. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4820 - Introduction to Mathematical Statistics

Sampling distributions, maximum likelihood and method of moments estimation, properties of estimators, classical methods for confidence intervals and hypothesis testing, simple linear regression. Prereq: Grade of C- or better in MATH 3800 or MATH 4810 (preferred). Note: Students who have a grade of A in MATH 3800 or a B- or better in MATH 4810 pass this course at a much higher rate. Cross-listed with MATH 5320. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4830 - Applied Statistics

Review of estimation, confidence intervals and hypothesis testing; Anova; categorical data analysis; non-parametric tests; linear and logistic regression. No co-credit with MATH 4387 or 5387 and doesn't count for Math degrees. Cross-listed with MATH 5830. Prereq: MATH 2830 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 4840 - Independent Study

Variable credit depending on the student's needs. Offered for the advanced student who desires to pursue a specific topic in considerable depth. Note: Supervision by a full-time faculty member is necessary, and the dean's office must concur. Students may register for this course

more than once with departmental approval. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

MATH 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MATH 5010 - History of Mathematics

A history of the development of mathematical techniques and ideas from early civilization to the present, including the inter-relationships of mathematics and sciences. Note: this course assumes that students have mathematical knowledge equivalent to MATH 1401. Prereq: Graduate standing. Not open to students who have had MATH 4010. No credit for applied math graduate students. Cross-listed with MATH 4010. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5012 - An Advanced Perspective on Number and Operation

Advanced study of number and operation, including why the various procedures from arithmetic work and connections to algebraic reasoning. Focuses on using rigorous mathematical reasoning and multiple representations to explain concepts. Note: Does not count toward graduate degrees in applied mathematics. Note: this course assumes that students have taken MATH 3000 or an equivalent course. Prereq: Graduate standing. Cross-listed with MATH 4012. Max hours: 2 Credits. **Semester Hours:** 2 to 2

MATH 5015 - Capstone Course for Secondary Teachers

High school mathematics from an advanced perspective: analyses of alternative definitions, extensions and generalizations of familiar theorems; discussions of historical contexts in which concepts arose; applications of mathematics. Note: Does not count toward a graduate degree in applied mathematics. Note: this course assumes that students have taken MATH 3210, 4310 and 3140 or equivalent. Prereq: Graduate standing. Cross-listed with MATH 4015. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5017 - Topics in Mathematics for Teachers

Topics vary from semester to semester. Designed for professional mathematics teachers. Note: This course will not count toward a degree in applied mathematics. Prereq: permission of instructor. Repeatable. Max Hours: 50 Credits. **Semester Hours:** 0.3 to 50

MATH 5027 - Topics in Applied Mathematics

Selected topics in mathematical problems arising from various applied fields such as mechanics, electromagnetic theory, economics and biological sciences. Prereq: Graduate standing in Applied Mathematics, or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5070 - Applied Analysis

Metric spaces, uniform convergence, elements of Banach spaces, elements of functions of complex variable. Problem solving and independent proof writing. Review of selected advanced topics in analysis for the PhD preliminary examination. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of two semesters of undergraduate real analysis (e.g., MATH 4310 and MATH 4320). Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5110 - Theory of Numbers

Every other year. Topics include divisibility, prime numbers, congruences, number theoretic functions, quadratic reciprocity, and special diophantine equations, with applications in engineering. Prereq: Graduate Standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate-level course in mathematical proof (e.g. MATH 3000). Cross-listed with MATH 4110. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5135 - Functions of a Complex Variable

Infrequent. The complex plane, infinite series and products, elementary special functions, Cauchy-Riemann equations, conformal mapping, complex integration, Cauchy integral theory, and residue theory. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have mathematical knowledge equivalent to two semesters of undergraduate-level real analysis (e.g. MATH 4310, MATH 4320) or to a semester of graduate-level real analysis (e.g., MATH 5070). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5310 - Probability

Examines elementary theory of probability, including independence, conditional probability, and Bayes' theorem; random variables, expectations and probability distributions; joint and conditional distributions; functions of random variables; limit theorems, including the central limit theorem. Prereq: Graduate standing in Applied Mathematics or Statistics. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of differential and integral calculus (e.g., MATH 2411). Cross-listed with MATH 4810. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5320 - Introduction to Mathematical Statistics

Sampling distributions, maximum likelihood and method of moments estimation, properties of estimators, classical methods for confidence intervals and hypothesis testing, simple linear regression. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of an undergraduate-level course in probability (e.g., MATH 3800 or 4810). Cross-listed with MATH 4820. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5350 - Mathematical Theory of Interest

Rates of interest, term structure of interest rates, force of interest, yield rate, principal, equation of value, annuity, perpetuity, stocks, bonds, other financial instruments. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate-level course in probability (e.g., MATH 4810). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5351 - Actuarial Models

Severity models, frequency models, aggregate models, risk measures, ruin theory, construction and selection of empirical models, credibility, simulation. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of undergraduate-level courses in probability and statistics (e.g. MATH 4810, MATH 4820, MATH 3382). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5387 - Applied Regression Analysis

Topics include simple and multiple linear regression, model diagnostics and remediation, and model selection. Emphasis is on practical aspects and applications of linear models to the analysis of data in business, engineering and behavioral, biological and physical sciences. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of an undergraduate-level course in statistics (e.g., MATH 4820). No co-credit with MATH 4830/5830. Cross-listed with MATH 4387. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5390 - Game Theory

Zero-sum and non-zero-sum games; Nash equilibrium and the principle of indifference; Shapley value and other concepts of fair division; Evolutionary game theory, ESS, and evolutionary population dynamics. Applications in economics, business, and biology. Note: this course assumes that students have the equivalent of MATH 2421, 3191 and 3800 or 4810. Prereq: Graduate standing in Applied Mathematics. Cross-listed with MATH 4390. Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5394 - Experimental Designs

Designs covered will include: completely randomized, complete block, split plot, incomplete block, factorial and fractional factorial designs. Additionally, power and study design for non-experimental studies will be covered. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of an undergraduate-level course in regression analysis (e.g., MATH 4387). Cross-listed with MATH 4394. Term offered: spring of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5432 - Computational Graph Theory

Infrequent. Algorithmic techniques in graph theory and other discrete mathematics areas. Typical topics include: branch-bound algorithms, matching, colorings, domination, min-plus algebra, simulated annealing and related heuristics, NP-completeness theory. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate-level course in graph theory (e.g., MATH 4408). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5490 - Network Flows

Every other year. Begins with the classical min-cost flow problem, defined on an ordinary network. Other problems, such as shortest path, are also shown in this class. Both theory and algorithms are presented. Extensions include generalized networks, nonlinear costs, fixed charges, multi-commodity flows and additional applications, such as in communications networks. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Term offered: spring of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5576 - Mathematical Foundations of Artificial Intelligence I

Infrequent. A fundamentals course that complements other approaches, such as in engineering, psychology, and business administration. Here the emphasis is on the mathematical foundations. Topics include logical inference, problem solving, heuristic search, neural nets, analogical reasoning and learning. Models and paradigms also consider different measures of uncertainty. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate course in data structures (e.g., CSCI 2511) and a course in linear algebra (e.g., MATH 3191). Cross-listed with MATH 4576. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5593 - Linear Programming

A linear program is an optimization problem that seeks to minimize or maximize a linear function subject to a system of linear inequalities and equations. This course begins with examples of linear programs and variations in their representations. Basic theoretical foundations covered include polyhedra, convexity, linear inequalities and duality. Two classes of solution algorithms are given: simplex methods and interior point methods. The primary

emphasis of this course is on mathematical foundations, and applications are used to illustrate the main results. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of a course in linear algebra (e.g., MATH 3191). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5660 - Numerical Analysis I

Methods and analysis of techniques used to resolve continuous mathematical problems on the computer. Solution of linear and nonlinear equations, interpolation and integration. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of differential and integral calculus (e.g., MATH 2411) and linear algebra (e.g., MATH 3191 or 3195). Programming experience is strongly recommended. Cross-listed with CSCI 4650, 5660, and MATH 4650. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5661 - Numerical Analysis II

Numerical differentiation and integration, numerical solution of ordinary differential equations, and numerical solutions of partial differential equations as time allows. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of linear algebra and differential equations (e.g., MATH 3195 or both MATH 3191 and 3200) and programming experience or a first course on numerical analysis (e.g., MATH 4650). Cross-listed with MATH 4660, CSCI 4660 and 5661. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5718 - Applied Linear Algebra

Topics include: Vector spaces, practical solution of systems of equations, projections, eigenvalues and eigenvectors, unitary transformations, Schur QR, singular value decompositions, similarity transformations, Jordan forms, and positive definite matrices. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate-level course in linear algebra (e.g., MATH 3191). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5733 - Partial Differential Equations

Infrequent. Initial/Boundary value problems for first-order, wave, heat and Laplace Equations; maximum principles; Fourier Series and applications. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate sequence in calculus (e.g., through MATH 2421) and differential equations (e.g., MATH 3200 or 3195). Cross-listed with MATH 4733. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5779 - Math Clinic

The clinic is intended to illustrate the applicability and utility of mathematical concepts. Research problems investigated originate from a variety of sources--industry, government agencies, educational institutions, or nonprofit organizations. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Cross-listed with MATH 4779. Term offered: fall, spring. Repeatable. Max Hours: 99 Credits. **Semester Hours:** 3 to 3

MATH 5791 - Continuous Modeling

Every other year. Surveys mathematical problems that arise in natural sciences and engineering. Topics may include population models, epidemic models, mechanics, heat transfer and diffusion, tomography, pharmaco-kinetics, traffic flow, fractal models, wave phenomena, and natural resource management. Most models discussed are based on differential and integral equations. Emphasis is formulation and validation of models as well as methods of solution. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of undergraduate-level courses in differential equations and linear algebra (e.g., MATH 3200 and 3191). Cross-listed with MATH 4791. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5792 - Probabilistic Modeling

Every other year. Markov chains; Poisson processes, continuous time Markov chains, elementary topics in queuing theory, and some mathematical aspects of Monte Carlo simulation, including random variate generation, variance reduction, and output analysis. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate-level course in probability (e.g., MATH 4810) and some programming experience. Cross-listed with MATH 4792. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5793 - Discrete Math Modeling

Every other year. Focuses on the use of graph theory and combinatorics to solve problems in a wide variety of disciplines. Applications are selected from computer science, communication networks, economics, operations research, and the social, biological and environmental sciences. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of an undergraduate course in linear algebra (e.g., MATH 3191) and graph theory (e.g., MATH 4408). Cross-listed with MATH 4793. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5794 - Optimization Modeling

Every other year. Principles of model formulation and analysis are developed by presenting a wide variety of applications, both for natural phenomena and social systems. Examples of optimization models to represent natural phenomena include principles of least time and energy. Examples in social systems include resource allocation, environmental control and land

management. Specific applications vary, but are chosen to cover a wide scope that considers dichotomies, such as discrete vs. continuous, static vs. dynamic, and deterministic vs. stochastic. Some computer modeling language (like GAMS) is taught. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. : This course assumes that students have the equivalent of a sequence in calculus (e.g., through MATH 2421) and linear algebra (e.g., MATH 3191). Cross-listed with MATH 4794. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5830 - Applied Statistics

Review of estimation, confidence intervals and hypothesis testing; ANOVA; categorical data analysis; non-parametric tests; linear and logistic regression. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Note: This course assumes that students have the equivalent of an introductory course in statistics (e.g., MATH 2830). No co-credit with MATH 4387 or 5387 and doesn't count for Math degrees. Cross-listed with MATH 4830. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing in Applied Mathematics or Statistics and instructor permission. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MATH 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MATH 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

MATH 5950 - Master's Thesis

Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

MATH 5960 - Master's Project

Note: Credit hours for this course will not count toward a graduate degree in Applied Mathematics. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

MATH 6023 - Topics in Discrete Math

Topics may include graph theory, combinatorics, matroid theory, combinatorial matrix theory, finite geometry, design theory, and discrete algorithms. Note: Since topic varies by semester, students may register for this course more than once. Note: students should obtain permission from the instructor prior to enrolling in this course. Prereq: Graduate standing in Applied Mathematics. Repeatable. Max Hours: 99 Credits. **Semester Hours:** 3 to 3

MATH 6101 - Uncertainty Quantification

The field of uncertainty quantification is evolving rapidly due to increasing emphasis on models of physical and biological systems that have quantified uncertainties for large-scale applications, novel algorithm development, and new computational architectures that facilitate implementation of these algorithms. In this course, we develop the basic concepts, theory, and algorithms necessary to quantify input and response uncertainties for a variety of simulation models. The topics will include concepts from probability and statistics, parameter selection techniques, frequentist and Bayesian model calibration, propagation of uncertainties, quantification of model discrepancy, surrogate model construction, and local and global sensitivity analysis. Note: A basic knowledge of probability, linear algebra, ordinary and partial differential equations, and introductory numerical analysis techniques is assumed. Coursework will typically consist of projects. Prereq: Graduate standing in Applied Mathematics or Statistics. AMENMS/PHD/STAT-MS. Recommended preparation MATH 5070, MATH 5718, MATH 5660, MATH 5733. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6131 - Real Analysis

Every other year. Lebesgue measure and integration, general measure and integration theory, Radon-Nikodym Theorem, Fubini Theorem. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of a two semester course in undergraduate analysis or advanced calculus (e.g. MATH 4310 and 4320) or introductory graduate-level coursework in analysis (e.g. MATH 5070). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6330 - Workshop in Statistical Consulting

Students participate as consultants in a drop-in consulting service operated by the department. Seminars provide students with supervised experience in short term statistical consulting. Note: Since problems vary each semester, students may register for this course more than once. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-

MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of graduate-level coursework in regression analysis (e.g. MATH 5387). Term offered: fall. Repeatable. Max Hours: 99 Credits. **Semester Hours:** 3 to 3

MATH 6380 - Stochastic Processes

Every other year. Markov processes in discrete and continuous time, renewal theory, martingales, Brownian motion, branching processes, and stationary processes. Applications include queuing theory, performance evaluation of computer and communication systems and finance. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of undergraduate-level coursework in linear algebra (e.g. MATH 3191) and ordinary differential equations (e.g. MATH 3200), along with undergraduate-level coursework in probability (e.g. MATH 4810). Term offered: fall of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6384 - Spatial and Functional Data Analysis

This course will cover various statistical methods for spatial and functional data. This will include quantifying spatial dependence and making predictions for areal and geostatistical spatial data, as well as smoothing, aligning, and principal components for functional data. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Term offered: fall of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6388 - Statistical and Machine Learning

This course covers a variety of statistical and machine learning methods. Both supervised and unsupervised methods are covered with an emphasis on model training and error estimation. Topics include penalized regression, principal components, k-nearest neighbors, clustering, and neural networks. Additional higher-level topics such as random forests, support vector machines, and boosting are also covered as time permits. Students will gain exposure to high performance computing by working on a Linux cluster. Prereq: Graduate standing in Statistics or Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in regression analysis (e.g. MATH 5387). Term offered: fall of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6395 - Multivariate Methods

Every other year. Multivariate distributions, hypothesis testing and estimation. Multivariate analysis of variance, discriminant analysis, multidimensional scaling, factor analysis, principal components. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the

equivalent of graduate-level coursework in regression analysis (e.g. MATH 5387). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6404 - Applied Graph Theory

Every other year. Emphasis on graph theory. Topics will include trees, diagraphs and networks, intersection graphs, coloring, clique coverings, distance, paths and cycles. Topics are motivated by applications. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6595 - Computational Methods in Nonlinear Programming

Every other year. Introduces fundamental algorithms and theory for nonlinear optimization problems. Topics include Newton, quasi-Newton and conjugate direction methods; line search and trust-region methods; active set, penalty and barrier methods for constrained optimization; convergence analysis and duality theory. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of a two semester course in undergraduate analysis (e.g. MATH 4310 and 4320) and graduate-level coursework in linear algebra (e.g. MATH 5718). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 6840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing in Applied Mathematics or Statistics and instructor permission. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MATH 7101 - Topology

Every other year. Topological spaces, compactness, separation properties and connectedness. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of a two semester undergraduate sequence in analysis or advanced calculus (e.g. MATH 4310 and 4320) or a graduate-level course in analysis (e.g. MATH 5070). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7132 - Functional Analysis

Every other year. Linear metric and topological spaces, duality, weak topology, spaces of functions, linear operators, compact operators, elements of spectral theory, and operator calculus. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate level coursework in real analysis (e.g. MATH 6131). Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7376 - Statistical Computing

Computationally-intensive methods in statistics, including random number generation and Monte Carlo methods, data partitioning and re-sampling, numerical and graphical methods, nonparametric function estimation, statistical models and data mining methodology, analysis of large data sets. Note: This course assumes that students have prior coursework in statistics (e.g. MATH 4820 or 4830 or 3382) and regression analysis (e.g. MATH 4387). Cross-listed with MATH 6376. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Cross-listed with MATH 6376. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7381 - Mathematical Statistics I

Every other year. Mathematical theory of statistics. Parametric inference: discrete and continuous distributions, methods of parameter estimation, confidence intervals. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of undergraduate-level coursework in linear algebra (e.g. MATH 3191) and statistics (MATH 5320). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7382 - Mathematical Statistics II

Every other year. (Continuation of MATH 7381.) Hypothesis testing, robust estimation, tolerance intervals, nonparametric inference, sequential methods. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: This course assumes that students have the equivalent of advanced graduate level coursework in mathematical statistics (e.g. MATH 7381). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7384 - Mathematical Probability

Every other year. Measurable spaces, probability measures, random variables, conditional expectations and martingales. Convergence in probability, almost sure convergence, convergence in distribution, limit theorems (law of large numbers, central limit theorem, laws of iterated logarithm). Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of undergraduate-level coursework in probability (e.g. MATH 4810) and graduate-level coursework in analysis (e.g. MATH 5070 or 6131). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7385 - Stochastic Differential Equations

Brownian motion, Ito integral, Ito formula, Dynkin's formula, stochastic optimal control, boundary value problems, Girsanov theorem, mathematical finance, optimal stopping. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course

assumes that students have the equivalent of graduate-level coursework in mathematical probability (e.g. MATH 7384). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7386 - Monte Carlo Methods

This course introduces Monte Carlo integration, variance reduction methods, quasi-Monte Carlo, Markov chain Monte Carlo, Metropolis-Hastings algorithm, Gibbs sampler, simulated annealing, expectation-maximization algorithm, sequential Monte Carlo methods. Prereq: Graduate standing in Applied Mathematics or Statistics. AMENMS/PHD/STAT-MS. Recommended preparation: MATH 5310 and MATH 5320. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7393 - Bayesian Statistics

Prior and posterior distributions, conjugate models, single and multiparameter models, hierarchical models, numerical methods for evaluating posteriors, Monte Carlo methods, and Markov chain Monte Carlo. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Programming experience is strongly recommended. Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7397 - Nonparametric Statistics

Every three years. Statistical inference without strong model assumptions. Hypothesis testing and estimation using permutations and ranks, analysis of variance, and nonparametric model fitting. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7405 - Advanced Graph Theory

Continuation of MATH 6404. Topics to be covered include: trees and optimization, encoding and embedding of graphs, generalized colorings and applications, perfect graphs, extremal problems, substructures, connectedness and cycles. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in graph theory (e.g. MATH 6404). Term offered: spring of even years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7409 - Applied Combinatorics

Every other year. Emphasis is on enumerative combinatorics. Topics include multinomial coefficients, generating functions, SDRs, Polya's enumeration theory, pigeon-hole principle, inclusion/exclusion and Moebius inversion of finite posets. Topics may also include introduction to designs and finite geometry. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7410 - Combinatorial Structures

Every other year. Finite combinatorial structures; existence, construction and applications. Topics include Latin squares, Hadamard matrices, block designs, finite geometries and extremal and non-constructive combinatorics. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in combinatorics (e.g. MATH 7409). Max hours: 3 Credits.

Semester Hours: 3 to 3

MATH 7413 - Modern Algebra I

Every other year. Groups, rings and ideals, integral domains. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of undergraduate level coursework in abstract algebra (e.g. MATH 4140). It is recommended that students take MATH 5718 during the same semester as MATH 7413. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7593 - Advanced Linear Programming

Every three years. A Ph.D. level course that goes deeper into linear programming, starting from where a graduate-level course (5593) ends. Topics include advanced sensitivity analysis, sparse matrix techniques, and special structures. Additional topics, which vary, include deeper analysis of algorithms, principles of model formulation and solution analysis. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in linear programming (e.g. MATH 5593). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7594 - Integer Programming

Every three years. A Ph.D. level course that uses linear programming (5593), especially polyhedral theory, to introduce concepts of valid inequalities and superadditivity. Early group-theoretic methods by Gomory and Chvatal's rounding function are put into modern context, including their role in algorithm design and analysis. Duality theory and relaxation methods are presented for general foundation and analyzed for particular problem classes. Among the special problems considered are knapsack, covering, partitioning, packing, fix-charge, traveling salesman, generalized assignment matchings. Matroids are introduced and some greedy algorithms are analyzed. Additional topics, which vary, include representability theory, heuristic search and complexity analysis. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in linear programming (e.g. MATH 5593). Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7595 - Advanced Nonlinear Programming

Every three years. Focuses primarily on the fundamental theory of nonlinear programming. Topics include convex analysis, optimality criteria, Lagrangian and conjugate duality, stability and sensitivity analysis. Other topics vary depending on the research interests of the instructor. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework addressing computational methods in nonlinear programming (e.g. MATH 6595). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7663 - Finite Difference Methods for Partial Differential Equations

Every other year. Consistency, stability, and convergence for difference schemes. Derivations based on Taylor series and finite series. Methods for parabolic and hyperbolic initial value problems and initial-boundary-value problems, elliptic boundary-value problems, some nonlinear problems. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in numerical analysis (e.g. MATH 5070) and partial differential equations (e.g. MATH 5733). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7665 - Numerical Linear Algebra

Every other year. Solution of linear equations, eigenvector and eigenvalue calculation, matrix error analysis, orthogonal transformation, iterative methods. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in numerical analysis (e.g. MATH 5660) and linear algebra (e.g. MATH 5718). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 7822 - Topics in Linear Algebra

Infrequent. Topics may include canonical forms, bilinear and quadratic forms, and combinatorial matrix theory. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in linear algebra (e.g. MATH 5718). Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7823 - Topics in Discrete Math

Infrequent. Advanced topics in discrete mathematics; will change from semester to semester. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: Students should contact the course instructor to determine the course focus, and to determine if any prior undergraduate- or graduate-level coursework is assumed. Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7824 - Topics in Computational Mathematics

Infrequent. Topics include methods for differential equations, numerical optimization, approximation theory, inverse problems, and Fourier analysis. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: Students should contact the course instructor to determine the course focus, and to determine if any prior undergraduate- or graduate-level coursework is assumed. Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7825 - Topics in Optimization

Infrequent. Some topics are extensions of those introduced in MATH 6595, while other topics are new. Examples of topics are: duality, stability, sensitivity, consistency, redundancy, principles of optimality, control theory, calculus of various global (non-convex) optimization and model reformulation. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: Students should contact the course instructor to determine the course focus, and to determine if any prior undergraduate- or graduate-level coursework is assumed. Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7826 - Topics in Probability and Statistics

Infrequent. Topics may include generalized linear models, information theory, robust methods, spatial statistics, sequential analysis, Monte Carlo methods, queuing theory. Note: Since topics vary each semester, students may register for this course more than once. Prereq: Graduate standing in Applied Mathematics or Statistics or instructor permission. AMEN-MS/PHD/STAT-MS. Note: Students should contact the course instructor to determine the course focus, and to determine if any prior undergraduate- or graduate-level coursework is assumed. Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7827 - Topics in Applied Mathematics

Infrequent. Topics include problems in differential equations, optimization, mathematical modeling, Fourier analysis and approximation theory. Note: Since topics vary each semester, students may register for this course more than once. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Repeatable. Max Hours: 48 Credits. **Semester Hours:** 3 to 3

MATH 7840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing in Applied Mathematics or Statistics and instructor permission. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MATH 7921 - Readings in Mathematics

Annual. Seven readings courses are offered regularly primarily for Ph.D. students at the research level in the designated fields. The seminar format requires significant student participation. Prereq: permission of instructor. Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7922 - Rdgs:Math Fndts-Cmptr Sc

Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7923 - Readings: Discrete Mathematics

Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7924 - Rdgs:Comp Mathematics

Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7925 - Readings: Optimization

Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7926 - Rdgs:Applied Prob/Stats

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing in Applied Mathematics or Statistics and instructor permission. Repeatable. Max Hours: 99 Credits. **Semester Hours: 1 to 1**

MATH 7927 - Rdgs:Comp/Math Biology

Max hours: 1 Credits. **Semester Hours: 1 to 1**

MATH 8660 - Mathematical Foundations of Finite Element Methods

Every other year. Theoretical foundations of finite element methods for elliptic boundary value problems, Sobolev spaces, interpolations of Sobolev spaces, variational formulation of elliptic boundary-value problems, basic error, estimates, applications to elasticity, practical aspects of finite element methods. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in finite element methods (e.g. MATH 6653) or equivalent programming experience, and graduate-level coursework in analysis or functional analysis (e.g. MATH 6131 or MATH 7132). Term offered: spring of odd years. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MATH 8664 - Iterative Methods in Numerical Linear Algebra

Every other year. Preconditioned iterative methods for linear systems and eigen problems, conjugate gradients, multigrid and domain decomposition. Prereq: Graduate standing in Applied Mathematics or permission of the instructor. Note: This course assumes that students have the equivalent of graduate-level coursework in numerical analysis (e.g. MATH 5660) and numerical linear algebra (e.g. MATH 7665). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MATH 8990 - Doctoral Dissertation

Only for students working on their Ph.D. research. Repeatable. Max hours: 50 Credits. **Semester Hours:** 1 to 10

Mechanical Engineering

MECH 1025 - CAD and Graphics for Mechanical Engineering

Introduction to 3-D computer-aided design software, solid modeling, industry-standard engineering drawing practices, and engineering graphics. Applications to mechanical engineering. Prereq: High School Geometry and Algebra. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 1045 - Manufacturing Processes Design

Basic manufacturing background will be provided to engineering students in order to: (1) apply manufacturing specifications to the design of mechanical devices, and (2) communicate with technical personnel in a production environment. Topics cover metal casting, bulk and sheet metal forming, material removal and joining and fastening processes. Prereq: MECH 1025 or CVEN 1025 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 1208 - Special Topics

Subject matter to be selected from topics of current technological interest. Credit to be arranged. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 2023 - Statics

A vector treatment of force systems and their resultants; equilibrium of trusses, beams, frames, and machines, including internal forces and three-dimensional configurations, static friction, properties of areas, distributed loads and hydrostatics. Prereq: PHYS 2311 with a C- or higher. Coreq: MATH 2411. Cross-listed with CVEN 2121. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 2024 - Introduction to Materials Science

The development of the physical principles relating the structural features of materials to their observed properties. Prereq: ENGR 1130 or CHEM 1130 or (CHEM 2031 and CHEM 2038 and CHEM 1999AE). Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 2030 - Analysis Techniques in Mechanical Engineering

Introduces experimental methods and mathematical analysis used in engineering. Spreadsheets are used to analyze engineering data and prepare tables and graphs. Introduction to computer programming using MATLAB. Prereq: MATH 1401 and MECH 1025 with a grade of C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 2033 - Dynamics

A vector treatment of dynamics of particles and rigid bodies, including rectilinear translation, central-force, and general motion of particles, kinematics of rigid bodies, the inertia tensor, plane motion of rigid bodies, energy and momentum methods for particles, systems of particles, and rigid bodies. Prereq: MECH 2023 or CVEN 2121 with a C- or higher. Cross-listed with CVEN 3111. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 2034 - Properties of Engineering Materials

Experiments to determine material properties and the effect of processing on properties important in mechanical design. Materials include metal, polymers, and composites. Loadings include tension, compression, and bending under static, dynamic impact and creep states. Coreq: MECH 2024. Max hours: 1 Credits. **Semester Hours:** 1 to 1

MECH 2208 - Special Topics: 2208-2298

Subject matter to be selected from topics of current technological interest. Credit to be arranged. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 3010 - Elementary Numerical Methods and Programming

A development of basic numerical methods used to solve engineering problems. Introduction to MATLAB to implement numerical simulations. Coreq: MATH 3195 (or MATH 3191 and MATH 3200). Restricted to majors in CEDC Mechanical Engineering. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3012 - Thermodynamics

Introduces thermodynamic properties and state relationships, processes and cycles with work and heat transfer. Applications of the first and second laws to energy-related engineering systems. Prereq: MATH 1401 and PHYS 2311 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3021 - Introduction to Fluid Mechanics

Applies exact and approximate theories to engineering problems in fluids. Examples include potential flow theory, Euler's equations for inviscid fluids, Bernoulli's equations, Navier-Stokes equations, and pipe flow. Prereq: MECH 2033, MECH 3012 and MATH 2421 with a grade C- or higher. Restricted to majors in CEDC Mechanical Engineering. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3022 - Thermodynamics II

Generalized thermodynamic cycles; general thermodynamic cycle considerations, compressor, expander, heat exchanger processes, refrigeration cycles, mixtures and combustion. Prereq: MECH 3012 or ENGR 3012 and MATH 2421 with a C- or higher. Restricted to majors in CEDC Mechanical Engineering. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3023 - System Dynamics I: Vibrations

Modeling of dynamical systems. Analysis of single and multiple degree of freedom systems. Introduction to continuous systems. Prereq: CVEN 3111 or MECH 2033 with C- or higher; MATH 3195 or MATH 3191 and MATH 3200 and MECH 3010 with a C- or higher. Coreq: CVEN 3121 or MECH 3043. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3027 - Measurements

Principles of digital and analog measurements; systems for sensing, transporting, modifying, and outputting information; systematic and random error analysis. The laboratory includes a variety of instruments and components illustrating fundamental experimental measurement techniques and methods. Prereq: MECH 3030 or ELEC 3030, MATH 3195 or (MATH 3191 & MATH 3200) with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3028 - Laboratory of Mechanical Measurements

Modern techniques for Mechanical measurements. Laboratory includes techniques for the calibration of transducers and analysis of Statistical uncertainty. Data Acquisition Systems used for Signal acquisition and measurement of common mechanical quantities, such as displacement, velocity, acceleration and force. Design and characterization of a second order measurement system based on strain gages. Coreq: MECH 3027. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MECH 3030 - Electric Circuits and Systems

Basic electrical engineering concepts for non-majors. Basic study of circuit analysis (RLC and Op-amps), transformers and motor equations, and simple electronic circuits (diodes and transistors). Prereq: MATH 2421 and PHYS 2331 with a C- or higher. Restricted to majors in CEDC Mechanical Engineering. Cross-listed with ELEC 3030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3031 - Fluids/Thermal Laboratory

Laboratory exercise in compressible and incompressible fluid flow; steady state and transient heat transfer. Prereq: MECH 3012 with a grade of C- or higher. Coreq: MECH 3021 and CVEN 3313. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 1 Credits. **Semester Hours:** 1 to 1

MECH 3032 - Electric Circuits and Systems Lab

Basic electrical engineering lab for MECH majors. Coreq: MECH 3030 or ELEC 3030. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 1 Credits. **Semester Hours:** 1 to 1

MECH 3035 - Design of Mechanical Elements

Review of mechanics of materials and stress analysis; detailed design of various machine elements such as fasteners, springs, brakes and gears. Includes design project. Prereq: MECH 2024 and MECH 3043 with a grade C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3042 - Heat Transfer

Basic laws of heat transfer by conduction, convection, and radiation with engineering design applications. Includes design project. Prereq: MECH 3021 with a grade C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3043 - Strength of Materials

Application of exact and approximate theories of stress and displacement to engineering problems in solids. Examples include torsion of rods and bending of beams. Combined stresses, principal stresses and energy methods are examined. Prereq: MECH 2023 or CVEN 2121 with a C- or higher. Cross-listed with CVEN 3121. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3045 - Principles of Additive Manufacturing

This course will introduce students to additive manufacturing (AM) techniques and design for additive manufacturing (DfAM). Additive manufacturing is no longer thought of as simply "rapid

prototyping," but is influencing the way manufacturing is performed at almost every level of the product lifecycle. It will influence practically every manufacturing system of the future. This course will cover the fundamentals, applications, and implications of AM such that students will understand why and when to use AM, as well as challenge their traditional thinking of design and what is possible. At the end of this course, students should be able to: (1) Describe the 7 processes of AM, and understand their advantages and limitations. (2) Have hands-on experience in using several different AM processes, including building, modifying, and repairing their own AM machine. (3) Understand the wide variety of AM applications beyond prototyping. This includes tooling, production, performance improvement, customization, art, and more. (4) Understand how AM can be used in a product's lifecycle from beginning to end. (5) Use "generative design software" and "topology optimization" to unlock complex designs to be created with AM. (6) Assess the cost and value of AM processes. Prereq: MECH 1045 and MECH 2024 with a grade of C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3065 - Intermediate Dynamics

An in-depth study of Newtonian dynamics with constraints. Mechanism synthesis using graphical and analytic techniques. Prereq: MECH 2033 or CVEN 3111 and MECH 3010 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3147 - Bioengineering

Explores engineering principles that have application in biology, and principles discovered in biology which may have application in engineering. Some topics covered are: cell biology, molecular biology, viscoelasticity, physical theory of plant cell growth aerodynamics, fluid mechanics, biofluid dynamics and animal flight. Restriction: Restricted to MECH majors with junior standing within the College of Engineering, Design and Computing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 3208 - Special Topics

Subject matter to be selected from topics of current technological interest. Credit to be arranged. Restriction: Restricted to MECH majors within the College of Engineering, Design and Computing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 3840 - Independent Study

This category is intended for upper-division level special topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Restriction: Restricted to MECH majors within the College of Engineering, Design and Computing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 3939 - Internship

Undergraduate internship course for credit. Must be approved by department and handled subject to experiential learning office rules. Max hours: 3 Credits. **Semester Hours:** 1 to 3

MECH 4020 - Biomechanics

Static and dynamic biomechanical analysis, effects of mechanical loading on bone and cartilage, design considerations in orthopaedic devices, muscle function, biomechanics of human movement, cardiovascular biomechanics. Prereq: MECH 2023, 2033, MATH 3195 or 3200 with a C- or higher. Cross-listed with MECH 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4023 - System Dynamics II: Controls

Introduces the Laplace Transformation. Control system analysis using root locus and frequency response methods. Basic compensation techniques are to be covered. Prereq: MECH 3023 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4024 - Mechanical Behavior of Materials

Studies the response of materials to applied stresses. Emphasis is on the understanding of the relationships between structure and properties. Fracture mechanics and fatigue are introduced. Prereq: MECH 3024 with a C- or higher. Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4025 - Advanced Biomechanics

This course provides training in computational and experimental methods for biomechanical engineering analysis. Topics include finite element analysis of biological systems, orthopedic device design, medical imaging analysis, mechanical characterization of biological tissues, and biomechanics of human movement. Prereq: MECH 4020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4035 - Senior Design I

Group and individual projects to design engineering components and systems. Design methodology, product specs, creativity, design reviews, communication, presentations, and report writing are emphasized. MECH 4035 and MECH 4045 form a one year sequence and must be taken consecutively. Prereq: MECH 3035 with a grade C- or higher and 40 hours of MECH courses. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4045 - Senior Design II

Student teams manufacture and construct and/or redesign mechanical parts or assemblies that they designed in previous course (MECH 4035). A proposal, oral progress reports, and a final written report and demonstration are required. MECH 4035 and MECH 4045 form a one year sequence and must be taken consecutively. Prereq: MECH 4035 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4110 - Numerical Methods for Engineers

Introduces numerical analysis. Solution of linear and nonlinear equation systems. Numerical methods for ordinary and partial differential equations. Engineering applications. Prereq: MATH 3195 or (3191 and 3200) with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4112 - Internal Combustion Engines

Students obtain a sufficient understanding of internal combustion engines that will allow them to perform analysis of combustion thermodynamics and actual cycles, including heat addition, heat loss, air/fuel flow, and engine design and performance. Prereq: MECH 3012 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5112. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4114 - Designing with Composites

Analysis and design of polymers and polymer-based composites. Failure criteria include static strength, stiffness, creep, fatigue, impact and fracture toughness. Design criteria include strength-to-weight ratio and cost-to-strength ratio. Prereq: MECH 3043 or CVEN 3121 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5114. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4115 - Applied Plasticity and Creep

Plastic deformation of materials applied to bulk and sheet metal manufacturing processes such as extrusion, rolling and sheet metal. Linear and nonlinear viscoelastic creep with applications to plates and shells. Prereq: MECH 3043 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5115. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4116 - Robotics

Introduces kinematics, dynamics, and control of robot manipulators. Emphasis is placed on computer use in control of actual robots and in computer simulation of mathematical models of robots. Students must turn in a project report based on the computer simulation. Prereq: MECH

3065 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4120 - Methods of Engineering Analysis

Selected topics from real analyses with applications to engineering analyses. Topics include vector calculus, ordinary differential equations, partial differential equations, and calculus of variations. Prereq: MATH 3195 or (MATH 3191 and MATH 3200) with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5120. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4132 - Power Plant Systems Design

Detailed engineering analysis and design of a thermal power plant, including heat balance, selection of equipment (boiler, turbines, heat exchangers, pumps, cooling tower), performance evaluation, economic evaluation and feasibility studies. Prereq: MECH 3022 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4135 - Mechanical Systems Design

Detailed engineering design of mechanical systems. Students work in teams on a project selected for entire class. Projects are similar to typical ones from industry. Course stresses creativity, synthesis, design judgment, and analysis of real-world problems. Oral and written presentations are required. Prereq: MECH 3035 with a C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4136 - Control Systems Design

Detailed engineering design of control systems. Students work in teams on a project selected for entire class. Projects are similar to typical ones from industry. Course stresses creativity, synthesis, design judgment, and analysis of real-world problems. Oral and written presentations are required. Prereq: MECH 4023 with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4141 - Fluid Mechanics

Viscous incompressible fluid flows. Topics include derivation of equations governing viscous compressible fluid motion; specializations to simple flows; boundary-layer theory; similarity solutions; introduction to turbulence and Reynolds stresses. Prereq: MECH 3021 with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5141. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4142 - Thermal Systems Design

Detailed engineering design of thermal/fluids systems. Students work in teams on a project selected for entire class. Projects are similar to typical ones from industry. Course stresses creativity, synthesis, design judgment, and analysis of real-world problems. Oral and written presentations are required. Prereq: MECH 3010, MECH 3021, and MECH 3042 with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4147 - Engineering Economy

Applies economic and financial principles to evaluation of engineering alternatives. Calculation of annual costs, present worth, and prospective rates of return on investment. Review of systems analysis techniques, including simulation, linear programming, and project scheduling. Restriction: Restricted to MECH majors at the junior or higher level standing within the College of Engineering, Design and Computing. Cross-listed with CVEN 4077. Max Hours: 3 Credits. Semester Hours: 3 to 3 **Semester Hours:** 3 to 3

MECH 4155 - Air Conditioning Design

Basic principles of heating and ventilating systems. Determination of heating and cooling loads. Design and layout of heating, ventilating, and air conditioning systems. Includes design project. Prereq: MECH 3022 and MECH 3042 with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4160 - Introduction to Operations Research

Introduces operations research, including mathematical programming models, models for decision alternatives, for procurement and inventory, and for queuing operations. Prereq: MATH 3195 or (MATH 3191 and MATH 3200) with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4163 - Rigid-Body Dynamics

Review of Newtonian dynamics, Lagrange's equations for particles, systems, and rigid bodies. Conservative and non-conservative systems, moments of inertia, principal axes, angular momentum and Euler equations. Illustrations from spinning bodies, including tops, gyro-compass and rotating machinery. Prereq: MECH 2033 or CVEN 3111, MATH 3195 or (MATH 3191 and MATH 3200) with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5163. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4166 - Computerized Numerical Control (CNC) Manufacturing

Modern manufacturing engineering concepts using computerized numerical control (CNC). The students learn state-of-the-art CNC methodologies, including digitizing, drawing, generating codes, and manufacturing, using modern CNC machines. Restriction: Restricted to MECH majors with junior standing within the College of Engineering, Design and Computing. Cross-listed with MECH 5166. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4175 - Finite Element Analysis in Machine Design

Students learn basic theory of finite element analysis (FEA) as it applies to stress analysis and design of mechanical components. Commercial package will be used giving students practical experience in the use of FEA. Prereq: MECH 3035 with a grade of C- or higher. Restriction: Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5175. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4176 - Introduction to Sports Engineering

Sports Engineering requires working both with the principles of biomechanics and the principles of engineering design and analysis. Using biomechanics is necessary in understanding the forces on the interface between the human athlete and his/her equipment. Recommended Prereq: MECH 2033, 3012 and 3021. Cross-listed with MECH 5176. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4177 - Energy Conversion

This introductory Energy Conversion course introduces the basic background, terminology, and fundamentals of various forms of energy conversion. The topics covered will include: fuel cells, batteries, photovoltaic systems, solar thermal, and wind energy. Recommended Prereq: MECH 3012. Cross-listed with MECH 5177. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4178 - Solar Engineering

This course provides the student with the basic ideas and calculation procedures on how solar processes work and how their performance can be predicted. Recommended Prereq: MECH 3012. Cross-listed with MECH 5178. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4179 - Introduction to Turbomachinery

This introductory Turbomachinery course introduces the basic background, terminology, and fundamentals of various forms of turbomachines. The analysis of the various turbomachines will be focused on the performance of the turbomachine. Recommended Prereq: MECH 3012. Cross-listed with MECH 5179. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4195 - Solid Modeling

This is a basic course in solid modeling using Solid Works computer software. Topics include feature-based modeling, parametric part design, parent/child relationships, use of datums, patterning, relations, sweeps, blends, assembly, tolerancing, rapid prototyping, CNC manufacturing, CMM inspection, and Step standards. Restriction: Restricted to major in CEDC Mechanical Engineering with junior standing. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 4208 - Special Topics

Subject matter to be selected from topics of current technological interest. Credit to be arranged. Restricted to majors in CEDC Mechanical Engineering. Cross-listed with MECH 5208. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 4840 - Independent Study

This category is intended for upper division level special topics which students may wish to pursue on their own initiative, with guidance from a professor who agrees to limited consultation on the work and to award credit when the project is completed. Restriction: Restricted to majors in CEDC Mechanical Engineering. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 5001 - Seminar: Introduction to Research

This course is intended to introduce graduate students to the fundamental skills and methods needed to perform research. Topics include writing technical papers, presentation skills, testing methodology, hypothesis creation and more. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MECH 5020 - Biomechanics

Static and dynamic biomechanical analysis, effects of mechanical loading on bone and cartilage, design considerations in orthopaedic devices, muscle function, biomechanics of human movement, cardiovascular biomechanics. Graduate standing or permission of the instructor required. Cross-listed with MECH 4020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5024 - Mechanical Behavior of Materials

Students will learn about the mechanical behavior of materials using a multi-scale, materials oriented approach. The course will relate how atomistic and molecular mechanisms relate to macroscopic and continuum properties of materials across acute and long-term time scales. Graduate standing or permission of the instructor required. Cross-listed with MECH 4024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5025 - Advanced Biomechanics

This course provides training in computational and experimental methods for biomechanical engineering analysis. Topics include finite element analysis of biological systems, orthopedic device design, medical imaging analysis, mechanical characterization of biological tissues, and biomechanics of human movement. Prereq: MECH 4020 or MECH 5020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5110 - Numerical Methods for Engineers

Introduces numerical analysis. Solution of linear and nonlinear equation systems. Numerical methods for ordinary and partial differential equations. Engineering applications. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5112 - Introduction to Internal Combustion Engines

This course provides an introduction to the major characteristics of internal combustion engines and defines the major parameters used to describe the engine operation and design conditions. Students perform analysis of the thermal performance of the engines. Graduate standing or permission of the instructor required. Cross-listed with MECH 4112. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5114 - Designing with Composites

Analysis and design of polymers and polymer-based composites. Failure criteria include static strength, stiffness, creep, fatigue, impact and fracture toughness. Design criteria include strength-to-weight ratio and cost-to-strength ratio. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4114. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5115 - Applied Plasticity and Creep

Plastic deformation of materials applied to bulk and sheet metal manufacturing processes such as extrusion, rolling and sheet metal. Linear and nonlinear viscoelastic creep with applications to plates and shells. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4115. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5120 - Methods of Engineering Analysis

Selected topics from real analyses with applications to engineering analyses. Topics include vector calculus, ordinary differential equations, partial differential equations and calculus of variations. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4120. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5121 - Introduction to Fluid Dynamics

Physical properties of gases and liquids; kinematics of flow fields; equations describing viscous, heat-conducting Newtonian fluids. Exact solutions and rational approximations for low- and high-speed dissipative flows, surface and internal waves, acoustics, stability, and potential flows. Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5122 - Macroscopic Thermodynamics

Axiomatic presentation of fundamentals of classical thermodynamics (first law); energy, work and heat. Equilibrium, reversible, and irreversible processes; entropy production and the second law. Applications to stability and phase equilibrium. Irreversible thermodynamics and the Onsager reciprocal relations. Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5123 - Introduction to Continuum Mechanics

Cartesian tensor notation. Deformation, strain, strain rate and compatibility. Definition of stress vector and tensor. Fundamental balance laws of mass, momentum and energy; entropy production inequality. Constitutive equations for elastic, viscoelastic and plastic materials; ideal, compressible, and viscous fluids. Beltrami-Mitchell and Navier-Stokes equations. Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5124 - Yield-Limited Behavior of Materials

Analysis of material behavior within the "elastic range," with emphasis on the phenomenon of yield and factors that influence it. Examination of the theory of dislocations; study of strengthening mechanisms in solids. Consideration of various time-dependent but reversible (inelastic) deformation phenomena. Presentation of appropriate engineering case studies to augment various topics. Graduate standing or permission of the instructor required. Prereq: MECH 5143 with a grade of B- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5133 - Theory of Inelastic Materials

Mathematical theory of linear viscoelasticity. Finite elements models. Solution of boundary-value problems in linear viscoelasticity. Non-Newtonian flow. Selected topics in nonlinear material behavior. Graduate standing or permission of the instructor required. Prereq: MECH 5143 with a B- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5141 - Viscous Flow

Viscous incompressible fluid flows. Topics include derivation of equations governing viscous compressible fluid motion; specializations to simple flows; boundary-layer theory; similarity solutions; introduction to turbulence and Reynolds stresses. Prereq: Graduate standing or

permission of instructor required. Cross-listed with MECH 4141. Max hours: 3 Credits.
Semester Hours: 3 to 3

MECH 5142 - Statistical Thermodynamics

Introduces the molecular interpretation and calculation of thermodynamic properties of matter, thermodynamic probability, distribution functions, Schrodinger wave equations and solutions and ensemble theory. Applications to ideal and real gases, solids, liquids, radiation, conduction electrons, and chemical equilibrium. Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5143 - Theory of Elasticity

Review of the basic equations of linear theory of elasticity. St. Venant torsion and flexure. Plane strain, plane stress, and generalized plane stress. Application of conformal mapping and Fourier transform techniques. Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5144 - Plasticity and Creep

Inelastic deformation of materials such as metals, alloys, glasses, composites and polymers from the phenomenological and structural point of view. Case studies of plastic and creep deformations in engineering materials. Prereq: MECH 5143 with a grade of B- or higher and graduate standing or permission of the instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5161 - Compressible Flow

Energy, continuity, and momentum principles applied to compressible flow; one-, two-, and three-dimensional subsonic, supersonic and hypersonic flows. Normal and oblique shocks, and method of characteristics. Prereq: MECH 5141 with a grade of B- or higher and graduate standing or permission of the instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5162 - Heat Transfer I

Review of equations governing transport of heat by conduction and radiation. Analytical and numerical solution of boundary value problems representative of heat conduction in solids. Radiation properties of solids, liquids and gases; transport of heat by radiation. Prereq: Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5163 - Dynamics

Review of Newtonian dynamics, Lagrange's equation for particles, systems and rigid bodies. Conservative and non-conservative systems, moments of inertia, principal axes, angular momentum and Euler equations. Illustrations from spinning bodies, including tops, gyro-compass and rotating machinery. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4163. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5166 - Computerized Numerical Control (CNC) Manufacturing

Modern manufacturing engineering concepts using computerized numerical control (CNC). The students learn state-of-the-art CNC methodologies, including digitizing, drawing, generating codes, and manufacturing using modern CNC machines. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4166. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5172 - Heat Transfer II

Review of equations governing transport of heat in fluids in motion. Description of heat transfer in free and forced convection, including laminar and turbulent flow. Dimensional analysis and heat transfer correlations, numerical methods and combined heat transfer mechanisms. Graduate standing or permission of the instructor required. Prereq: MECH 5141 with a B- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5175 - Finite Element Stress Analysis

Students learn basic theory of finite element analysis (FEA) as it applies to stress analysis and design of mechanical components. Commercial package will be used giving students practical experience in the use of FEA. Graduate standing or permission of the instructor required. Prereq: MECH 5143 with a B- or higher. Cross-listed with MECH 4175. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5176 - Introduction to Sports Engineering

Sports Engineering requires working both with the principles of biomechanics and the principles of engineering design and analysis. Using biomechanics is necessary in understanding the forces on the interface between the human athlete and his/her equipment. Prereq: Graduate standing or permission of the instructor required. Cross-listed with MECH 4176. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5177 - Energy Conversion

This introductory Energy Conversion course introduces the basic background, terminology, and fundamentals of various forms of energy conversion. The topics covered will include: fuel cells, batteries, photovoltaic systems, solar thermal, and wind energy. Prereq: Graduate standing or

permission of instructor required. Cross-listed with MECH 4177. Max hours: 3 Credits.

Semester Hours: 3 to 3

MECH 5178 - Solar Engineering

This course provides the student with the basic ideas and calculation procedures on how solar processes work and how their performance can be predicted. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4178. Max hours: 3 Credits.

Semester Hours: 3 to 3

MECH 5179 - Introduction to Turbomachinery

This introductory Turbomachinery course introduces the basic background, terminology, and fundamentals of various forms of turbomachines. The analysis of the various turbomachines will be focused on the performance of the tubomachine. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4179. Max hours: 3 Credits.

Semester Hours: 3 to 3

MECH 5180 - Advanced Heat Transfer

This course provides fundamental concepts and applicable mathematical techniques for understanding the physics of various modes of heat transfer. Topics include heat conduction in finite and semi-infinite domains, phase change, microscale heat conduction, laminar forced and free convection, turbulence forced and free convection, and thermal radiation. Prereq: Graduate standing or permission of instructor required. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

MECH 5182 - Microscale Transport Phenomena

This course provides the foundations on the physics of microscale transport phenomena, where continuum effects break down, with applications in MEMS and NEMS. Topics include gas microflows, liquid microflows, surface tension-driven flows, electrokinetics transport, kinetic theory, simulation techniques, lattice Boltzmann methods. Prereq: MECH 3021 and MECH 3042. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5208 - Special Topics

Subject matter to be selected from topics of current technological interest. Credit to be arranged. Prereq: Graduate standing or permission of instructor required. Cross-listed with MECH 4208. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MECH 5840 - Independent Study

Available only through approval of the graduate advisor. Subjects arranged to fit needs of the particular student. Graduate standing or permission of the instructor required. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

MECH 5939 - Internship

Students gain engineering design experience involving application of specific technical concepts and skills in a supervised industrial environment. (Must have approval from MECH faculty.) Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 5950 - Master's Thesis

Graduate standing or permission of the instructor required. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 6

MECH 5960 - Master's Report

Master of Science in Engineering report. Students seeking the Master of Science in Engineering, and who do not choose to do a thesis, must complete an individual project of an investigative and creative nature under the supervision of a member of the graduate faculty. Graduate standing or permission of the instructor required. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 3

MECH 5970 - Graduate Problem Course

The graduate problem course is for the solution of specific problems in MECH specialty areas. Each student is assigned a set of problems of some difficulty requiring the use of the literature of the various areas covered. Prereq: 15 hours of graduate level courses in MECH. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 6184 - Advanced Fluid Mechanics

This course provides a description of the advanced concepts for understanding the physics of fluid motion under different regimes. Topics include kinematics, stresses, equation of motion, vorticity transport, low Reynolds number flow, irrotational flow, interfacial flow, acoustics&waves, hydrodynamic stability & transition, turbulent flow. Prereq: MECH 5141. Restriction: Restricted to students with graduate standing, or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MECH 8990 - Doctoral Dissertation

Graduate standing or permission of the instructor required. Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

Minority Access to Research Careers

MARC 2880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 2990 - Special Topics

Studies special topics to be selected by the instructor. Note: May be repeated for credit under unique course topics. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 3880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 3990 - Special Topics

Studies special topics to be selected by the instructor. Note: May be repeated for credit under unique course topics. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 4090 - Research Design & Development

This advanced writing and research methods course is designed to help students develop independent research ideas into formal products, such as a thesis proposal, grant application, presentation, and study protocols. Prereq: permission of the instructor. Cross-listed with PSYC 4090. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MARC 4680 - Behavioral & Biomedical Sciences Research Seminar

Introduces research in the behavioral and biomedical sciences. Students will learn about research programs at CU Denver and other centers, present their own research, and interact with the local scientific community. Prereq: permission of the instructor. Cross-listed with PSYC 4680. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 2

MARC 4780 - Behavioral & Biomedical Sciences Research: Ethics & Issues

Students will critically review and analyze some of the major ethical and policy issues that arise during the conduct of basic and applied behavioral research. Prereq: PSYC 1000, 1005, 2090, 2220 and 3090 or instructor permission. Cross-listed with MARC 5780. Max hours: 3 Credits.

Semester Hours: 3 to 3

MARC 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 4990 - Special Topics

Advanced study of special topics to be selected by the instructor. Note: May be repeated for credit under unique course topics. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MARC 5780 - Behavioral & Biomedical Sciences Research: Ethics & Issues

Students will critically review and analyze some of the major ethical and policy issues that arise during the conduct of basic and applied behavioral research. Prereq: PSYC 1000, 1005, 2090, 2220 and 3090 or Graduate standing or instructor permission. Term offered: fall. Cross-listed with PSYC 4780, PSYC 5780 and MARC 4780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MARC 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Modern Languages

MLNG 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max hours: 3 Credits.

Semester Hours: 1 to 3

MLNG 1995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

MLNG 2939 - Internship

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MLNG 4690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for language majors in the teacher certification program, School of Education, CU Denver. Cross-listed with MLNG 5690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MLNG 4691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 5691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 4690 or SPAN 4690 or FREN 4690 or GRMN 4690 or CHIN 4690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MLNG 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

MLNG 5690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for those wishing to be teaching assistants in the Department of Modern Languages, and for language majors in the teacher certification program, School of Education, CU Denver. Note: This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, SPAN 4690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MLNG 5691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, SPAN 4691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691,

CHIN 5691. Prereq: MLNG 5690 or SPAN 5690 or FREN 5690 or GRMN 5690 or CHIN 5690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Music

MUSC 1011 - The Greatest Albums of All Time

Explores the greatest recorded albums of the modern era. Students will gain historical perspective on specific groups and also learn about the tools and techniques used in their production process. For students who want to learn how to listen to music with greater understanding and appreciation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 1111 - First-Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 1540 - Introduction to Audio Production

Operating principles and performance characteristics of microphones, amplifiers, speaker systems, equalizers, mixers and multi-track recorders; acoustics of music, auditoriums and recording studios. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 1541 - Audio Production I

Operating principles and performance characteristics of microphones, amplifiers, speaker systems, equalizers, mixers and multi-track recorders; acoustics of music, auditoriums and recording studios. Coreq: MUSC 1542. Restriction: Restricted to MUSC-BS with a sub-plan of MRA or MST. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 1542 - Audio Production Lab

Lab component to Audio Production I. Focus is on digital audio workstation fluency including recording, editing, processing, signal flow, and automation, and multitrack mixing principles. Coreq: MUSC 1541. Restriction: Restricted to MUSC-BS majors withing the College of Arts and Media. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

MUSC 1560 - Audio Production II

Studies include theoretical and practical music production techniques with topics covering digital audio workstations, signal flow, digital signal processing, MIDI production, synthesis, and sampling. Team lab recording projects involve recording, mixing, and other music production techniques. Prereq: MUSC 1540 or MUSC 1541, and MUSC 1542. Restriction: Restricted to

MUSC-BS majors with a sub-plan of MRA or MST. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 1800 - Acoustics for Audio Production

This course studies the nature of sound and practical applications for critical listening and recording environments. Topics include the nature of sound, studio and concert hall design measurement and analysis. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2125 - Electronic Music Production Techniques

Students will learn contemporary electronic music techniques using current software. The class will include MIDI sequencing, looping, sampling, FM synthesis, subtractive synthesis, and wavetable synthesis. Students will also learn how to appropriately use effects and digital editing. Prereq: MUSC 1560; Restricted to MUSC-BS majors with a sub-plan of MRA or MST. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2450 - Performing Arts Management and Presentation

Introduces students to nonprofit and for-profit arts organization issues in performance presentation including organization structure, performance production and management, development of leadership and organizational skills as well as a general understanding of the profession. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2510 - Topics in Recording Arts

Selected topical subjects to include live or studio sound recording, sound reinforcement, new technologies or practices in the audio industry. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 3

MUSC 2550 - Critical Listening for Recording Arts

Students will be trained to recognize: boosts and cuts in different bands of frequencies at increasingly small increments, types of distortion, parameters for compression, delay, reverb and stereo imaging. Students will develop a vocabulary for describing sounds and improving auditory memory. Prereqs: MUSC 1560, 1800; Co-req: MUSC 2580; Restricted to BS-MUSC MRA or MST sub-plan only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2580 - Audio Production III

Advanced studies in sound recording and reinforcement, aesthetics and techniques of multi-track digital recording and stereo imaging. Team lab recording projects. Prereq: MUSC 1560, MUSC 1800; Co-req: MUSC 2550; Restricted to BS-MUSC MRA and MST sub-plans only. Cross-listed with MSRA 5550. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2590 - Mastering & Advanced Digital Audio

A study and practice of the art of mastering. Topics covered include: history, monitoring, signal flow, metering, jitter, audio restoration, limiting, creating a CD pre-master, & mastering for new media. Students will get practical experience mastering their own projects. Prereq: MUSC 2550 & 2580; Restricted to MRA and MST sub-plan only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2600 - A History of Audio in 30 objects

Explore the history of audio through the stories of 30 key objects. From Edison cylinders to Apple computers. This class will trace the development of recording technology and techniques, and discuss how they effect the way we work today. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2700 - Introduction to Music Business

Introduces music as a business and a product, emphasizing music publishing, recording, broadcasting, marketing, licensing and legal aspects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2750 - Introduction to Music Business

Introduces music as a business and product emphasizing music publishing, recording, broadcasting, marketing, licensing and legal aspects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2815 - Music Industry Topics

Various topics related to music business and recording arts industries. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

MUSC 2851 - Introduction to the International Music Business

Students are introduced to the fundamentals of the international music business in diverse countries, including through online discussions and research. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2852 - Introduction to International Music Technology

Historical and current global innovations in music technology and their impact on popular music. From magnetic tape to DAWs, monophonic to immersive audio, Roland's 808 bass to Ableton Live. Japan, Germany, Sweden, and the UK are among those represented. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2853 - International Music Business Study Abroad

Students engage in music-business field trips to international settings to attend industry events, interact with industry professionals and conduct research for a practical perspective on the increasing globalization of the music industry. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 2854 - International Recording Arts Study Abroad

Students become acquainted with music technology in a different country by visiting music conferences, recording studios, manufacturers, and historical landmarks. Students compare culturally-based standards and expectations of quality and communication to enhance their sense of professionalism in the field. Max hours: 3 Credits **Semester Hours:** 3 to 3

MUSC 3125 - Sound and Music for Video Games

This course will give students an overview of the function of sound and music for video games including: history, sound engines, types of audio utilized, stereo and surround sound localization, music capabilities of hardware configurations and future trends in sound for video games. Prereq: MUSC 2580. Max hours: 3 Credit. **Semester Hours:** 3 to 3

MUSC 3130 - Sound and Music For Video Games II

Course is a continuation of Sound and Music for Video Games. Topics of study include non-linear music composition and implementation, advanced sound design techniques, optimization, and hands-on experience with modern game engines and game audio engines. Prereq: MUSC 3125. Restriction: Restricted to MUSC-BS majors with a sub-plan of MRA or MST. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3210 - Music and Entertainment Marketing

In this course students learn the essential elements of marketing as applied to the music and entertainment industry. Course topics include: marketing principles, theories and tools utilized in the music and entertainment businesses and specific industry practices and applications. Prereq: MUSC 2700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3220 - Artist Management

Students learn the theory and practice of artist management as it relates to developing a career through entrepreneurship, establishing business structures for the artist, and concepts including: promotion, live performance, recording, contracts, and essential business practices. Prereq: MUSC 2700 Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3250 - Music and Entertainment Marketing

Students learn the essential elements of marketing as applied to the music and entertainment industry. Course topics include: marketing principles, theories and tools utilized in the music and entertainment businesses and specific industry practices and applications. Restricted to Music Industry Studies Minor MUIS-MIN. Prereq MUSC 2750 or MUSC 2700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3260 - Artist Management

Students learn the theory and practice of artist management as it relates to developing a career through entrepreneurship, establishing business structures for the artist, and concepts including: promotion, live performance, recording, contracts, and essential business practices. Restricted to Music Industry Studies Minor MUIS-MIN. Prereq MUSC 2750 or MUSC 2700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3265 - Music Industry Networking

This course examines key networking strategies, processes and methods within the music industry. Students will research potential markets using social media, face-to-face interaction and other electronic means. Prereq: MUSC 3220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3505 - Introduction to Audio Post Production

Reviews all aspects of audio synchronized with picture, including music, sound effects, narration, and dialog replacement. Topics studied with respect to film, video and multi-media. Cross-listed with MSRA 5505. Prereq: MUSC 2590; Restricted to MUSC-BS majors with a sub-plan of MRA or MST. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3515 - History of 20th Century Film Music

This survey of the history of 20th century music in film will acquaint aspiring filmmakers and musicians with a history of the music, as well as concepts of film theory and the creative use of film music. Restricted to students with Junior or Senior status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3530 - Live Sound Reinforcement

This course focuses on the basic elements of sound reinforcement: acoustics, equalization, equipment and mixing techniques. The major emphasis is the production of the final sonic product. Prereq: MUSC 2580. Restriction: Restricted to Sophomore standing or higher and to MUSC-BS with a sub-plan of MRA or MST. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3545 - Music Editing in Visual Media

Music editing for film and television. Spotting notes, temp tracks, cue sheets, scoring session management, dubbing stage fixes, and Performing Rights Artists notes. Cross-listed with MSRA 5545. Prereq: MUSC 3505. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3555 - Dialogue Editing & Mixing for Visual Media

Dialogue editing and mixing for film and television. Recording Voiceover, Automated Dialogue Replacement, Group ADR, Efforts. Noise-reduction, mix levels, compression, limiting, EQ and use of reflected sound. Cross-listed with MSRA 5555. Prereq: MUSC 3505. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3605 - Audio Post Production II

Students will learn advanced Pro Tools techniques by designing, conceptualizing, and completing sound for a student film project. This interdisciplinary course prepares students for working relationships between Recording Arts, Film and Video areas and an entry level job in post production. Prereq: MUSC 3505; Restricted to MUSC-BS majors with a sub-plan of MRA or MST. Cross-listed with MSRA 5605. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3615 - Topics In Music Business

Various topics relating to the study of music business. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3650 - Music Touring

Study of the important elements related to the successful execution of musical tours. Topics include tour management, deal memos and contracts, advancing a tour, tour routing, management/booking agents, merchandise sales, tour accounting, hand tour marketing. Prereq: MUSC 3210 and MUSC 3220. Restriction: Restricted to MUSC-BS majors within the College of Arts and Media. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3690 - Concert Promotion and Venue Management

This course gives students a working knowledge of touring, presenting, promoting, marketing and management of live concerts. They will undertake an in-depth analysis from various points of reference: issues for agent, independent promoter, venue manager, tour/production manager and performer. Prereq: MUSC 3210 and MUSC 3220. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3699 - Concert Promotion and Venue Management

This course gives students a working knowledge of touring, presenting, promoting, marketing and management of live concerts. They will undertake an in-depth analysis from various points

of reference: issues for agent, independent promoter, venue manager, tour/production manager and performer. Restricted to Music Business Minors. Prereqs: MUSC 3250 and MUSC 3260. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3700 - Music and Entertainment Business in the Digital Age

In this course students learn the trends and developments changing the industry in the Digital Age. Course focuses on current technology, terminology and business models shaping the industry, preparing students for entry into an evolving music and entertainment career. Prereq: MUSC 3210 and 3220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3710 - CAM Records

Provides students with an opportunity to use knowledge and skills from music business courses to create and execute initiatives while partnering with local artists and music-related entities for a hands-on learning experience that benefits the student and local music community. Prereq: MUSC 3210 and 3220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3715 - Music Business Modules

Modular courses intended to expose students to specific business and management aspects of various subindustries within the music industry.. Prereq: MUSC 3690. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MUSC 3720 - Law and the Music Industry

Students will learn how to use and analyze music law principles through a review of essential court case studies. Students will be tested on lecture material and provided with an opportunity to complete research papers for a more in-depth examination. Prereq: MUSC 3690, 3700, 3710 and 3755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3730 - Introduction to Music Cities

In this course, students will examine the development and enhancement of music communities, using as templates the music communities in the city of Denver, the state of Colorado, and other cities throughout the world. Restriction: Restricted to Students with a Junior or Senior Standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3731 - Non Profit Entities in Music and Creative Economies

Students explore the viability, creation, effective operation, and sustainability of a music-related non-profit entity within a music community and how it can strengthen the economic and social well-being of that community. Restriction: Restricted to students with a junior or senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3732 - Advanced Music Cities

Students explore how investment in a city's music economy can be beneficial to the development of both a city's physical and economic landscape. Restriction: Restricted to students with a junior or senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3733 - Music Tourism

Students will learn how to use music to drive local and regional tourism strategies. Restriction: Restricted to students with a junior or senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3740 - Location Sound Recording

Studies workflow and techniques for location recording for film, video, TV, and video games. Students will work in field and in the studio recording and producing sound effects. Topics include microphone selection, field recording, editing and related industry studies. Prereq: MUSC 2590; Restricted to MUSC-BS majors with a sub-plan of MRA or MST. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3750 - Women in the Music Industry

An exploration of the role of women in the music industry, from performers to recording professionals, managers, and executives. This course offers historical perspective on gender diversity in the industry, and explores current issues and its impact on music. Prereq: MUSC 2700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3755 - Music Publishing

Students will learn key issues related to music publishing and song marketing activities, as well as the function and responsibilities of music publishers. Students will gain insight into skills needed to operate a music publishing company. Prereq: MUSC 3210 and 3220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3760 - Music Publishing

Students will learn key issues related to music publishing and song marketing activities, as well as the function and responsibilities of music publishers. Students will gain insight into skills needed to operate a music publishing company. Restricted to Music Business Minors. Prereqs: MUSC 3250 and MUSC 3260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3775 - Music Supervision

An examination of processes and strategies associated with securing licenses for music in media outside the music industry. This course offers hands-on opportunity to make music selections for a variety of media using licensing/contract deals for composers, publishers, and labels. Prereq: MUSC 3720 and MUSC 3755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3785 - Current Issues In the Music Business

Class discusses and analyzes cutting-edge business and legal developments in the music industry, focusing particularly on the developments' impact on historical traditions, career paths and creative applications in the field. Prereq: MUSC 3690. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3790 - Video Production in the Arts: Music

Introduces the development of the contemporary music video with an emphasis on stylistic and technical analysis. Combines a lecture demonstration format with hands-on videography. Open to music, theatre, fine arts majors, and students who have successfully completed at least one College of Arts and Media course. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MUSC 3845 - The Beatles

This course explores the music, biography, cultural impact and business of the Beatles. Restriction: Students must be of sophomore-, junior-, or senior-level standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3850 - History of the Music Industry

This course investigates the historical development of the music industry from an economic, social, artistic, political, and technological perspective. It focuses on organizations, genres, business systems and influential individuals. Restriction: Restricted to MUSC-BS majors within the College of Arts & Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 3939 - Internship

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

MUSC 4100 - Advanced Composition

Composition of extended forms. May be repeated once for credit. Prereq: MUSC 3200. Max hours: 2 Credits. **Semester Hours:** 2 to 2

MUSC 4210 - Advanced Music Law

Students will conduct in-depth research on focused music law issues, and engage in a workshop setting in drafting, reviewing and negotiating music business contracts. Prereq: MUSC 3720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4400 - The International Music Business

Students examine key elements of the music business structures of different countries, including the countries' trade organizations, industry executives, music artists (as examples of music business success), intellectual property principles and current music business issues. Prereq: MUSC 3720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4500 - Topics in Professional Audio

Selected topical subjects to include live or studio sound recording, sound reinforcement, new technologies or practices in the audio industry. Prereq: MUSC 4550. Cross-listed with MSRA 5500. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 1

MUSC 4510 - Topics in Recording Arts

Selected topical subjects to include live or studio sound recording, sound reinforcement, new technologies or practices in the audio industry. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4525 - Multimodal Interaction for Music

This course explores human-computer interaction in music composition and performance. Students will learn to program and use open-source hardware to build novel and creative musical interfaces and instruments. Restriction: Restricted to Junior/Senior level students in the Recording Arts program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4535 - Sound Effects & Foley for Visual Media

Techniques for recording sound effects in the field and recording Foley in the studio. Use of library effects. Use of mixing techniques and plug-ins to create more complex sounds. Cross-listed with MSRA 5535. Prereq: MUSC 3505. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4545 - Re-recording Mixing for Visual Media

Techniques for mixing dialogue, ADR, music, sound effects, background ambiances and Foley. Different level standards and deliverables. Cross-listed with MSRA 5565. Prereq: MUSC 3555 or MUSC 4535. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4575 - Surround Sound

This lecture-lab course deals with surround sound in film, digital TV and DVDs. Topics include monitoring, microphone techniques, recording, mixing, mastering, delivery formats and psychoacoustics. Students work on two lab projects in the semester. Prereq: MUSC 4505. Cross-listed with MSRA 5575. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4580 - Audio Production Seminar

Faculty and majors of the music engineering program assemble to discuss and demonstrate issues of artistic and technical applications of recording technology. Student projects, faculty, and guest lectures provide topical focus. (Music facility fee applies) Prereq: MUSC 4560. Coreq: MUSC 4505. Cross-listed with MSRA 5580. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

MUSC 4581 - Audio Production Seminar II

A capstone project based course in which students complete professional quality projects in music production and/or post production. Students refine their engineering skills and develop new skills required for integration in the music industry such as portfolio design and resume development. Prereq: MUSC 4580. Cross-listed with MSRA 5581. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4740 - Music Business Analysis

Students learn to analyze specific managerial situations unique to the music and entertainment industries and will understand aspects of finance, taxation, and management science. Prereq: MUSC 3690, 3700, 3710 and 3755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4800 - Music Industry Entrepreneurship

MIE is a project-based course focused on individual entrepreneurial endeavors. Students will supply their own business, music, multi-media or audio projects. The class will focus on principles of entrepreneurship and helping student's develop those projects into viable businesses or creative releases. Restriction: Restricted to Juniors and Seniors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4820 - Digital Music Techniques

Studies the general principles and applications of digital music technology, emphasizing the function and operation of specific computer software. Topics include digital audio workstations, MIDI sequencers, digital signal processing programs, and distribution on optical discs and computer-based mediums. Prereq: Admittance to Recording Arts/Tech focus. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MUSC 4890 - Music Business Senior Seminar

Seminar activities focus on students developing, discussing and completing individual capstone projects. This includes an in-depth research paper and in-class presentation to allow students to explore their relevant interests in the music business. Prereq: MUSC 3720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Performance Music

PMUS 1001 - Music Appreciation

Explores the style of music in the major compositional periods, including contemporary pop styles. This course will not satisfy any degree requirements for music majors. For non-music majors who want to learn how to listen to music with greater understanding and pleasure. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1 **Semester Hours:** 3 to 3

PMUS 1011 - World Pop

Explores popular music from around the world with an emphasis on the latest trends. This is for non-music majors who want to learn about other cultures and learn how to listen to all music with greater understanding. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1020 - Beginning Musicianship

Provides basic musical and theoretical skills to students who do not have the proficiency to enroll in Theory I and Ear Training I. Major concepts include an introduction to music fundamentals, basic ear training, introduction to sight singing and an applied understanding of the keyboard. This course will not satisfy any degree requirements for Music majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1021 - Piano Class For Non-Majors

Elementary group instruction in piano skills for non-majors. Course focuses upon development of basic reading and performance skills for the non-Music Major. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1022 - Piano Class II for Non-Majors

Intermediate to Advanced instruction in piano skills for non-majors. Course focuses on further development of reading and performance skills for the non-Music Major. Prereq: PMUS 1021 or permission of instructor. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1023 - Piano Class I

This course focuses on beginning note reading in both treble and bass clefs, learning one octave major key scales, basic harmonization, and beginning improvisation. Students perform in both individual and group settings. Note: This course is restricted to Music-Majors only. Coreq: PMUS 1100 and 1110. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1024 - Piano Class II

This course focuses on intermediate sight reading, technique, chord vocabulary, major and minor scales, and improvisation. Students perform in both individual and group settings. Note: This course is restricted to Music-Majors only. Prereq: PMUS 1023. Coreq: PMUS 1200 and 1210. Max hours: 1 Credits. **Semester Hours:** 1 to 1

PMUS 1025 - Piano Class III

Students entering this course are expected to have general fluency in major and minor scales. The course focuses on expanding chord vocabulary, sight reading, transposition, and performing more advanced repertoire. Students perform in both individual and group settings. Note: This course is restricted to Music-Majors only. Prereq: PMUS 1024. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1026 - Piano Class IV

Students entering this course are expected to have fluency in sight reading, major and minor scales. The course focuses on harmonizing with complex chords, playing by ear, improvisation, and playing repertoire in broader range of key signatures. Students perform in both individual and group settings. Note: This course is restricted to Music-Majors only. Course meets in Roland Piano Lab. Prereq: PMUS 1025. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1040 - Class Guitar

Designed to provide each student with a basic knowledge of the fretboard. The course material focuses on beginning note reading, basic chord forms and elementary improvisation. Students have the opportunity to perform in both individual and group settings. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 1

PMUS 1041 - Class Guitar II

This group guitar class is designed to go beyond PMUS 1040 and provide students with an advanced knowledge of the fretboard. The course material focuses on advanced position note reading, complex chord forms and scale vocabulary. Students have the opportunity to perform in both individual and group settings. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1045 - Class Guitar I for Non-Majors

This class will address basic techniques and concepts of playing the guitar, for non-majors. Students will gain a basic proficiency with regard to picking and fingerstyle technique, and learn essential contemporary harmony through the performance of etudes and songs. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1046 - Class Guitar II for Non-Majors

This class will address basic techniques and concepts of playing the guitar, for non-majors. Students will gain a basic proficiency with regard to picking and fingerstyle technique, and learn essential contemporary harmony through the performance of etudes and songs. Prereq: PMUS 1045. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1047 - The Beatles for Fingerstyle Guitar

This course will examine the music of The Beatles, through harmonic analysis, technical etudes and performance practice. Students will develop a basic proficiency with regard to specific fingerstyle techniques. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1050 - Voice Class I

Fundamentals of voice production: posture, breath management and support, tone, resonance, diction, phrasing and interpretation. Development of technique, confidence, and control through group and solo singing. Development of repertoire that includes contemporary and commercial vocal styles. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1051 - Voice Class I for Non-Majors

Voice technique and repertoire for non-music majors taught in a group setting. Students will learn basics of healthy singing technique and how to sing in multiple genres in both group and solo formats. For non-majors with little or no previous singing experience. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1060 - Voice Class II

Fundamentals of voice production: posture, breath management and support, tone, resonance, diction, phrasing and interpretation. Extension of PMUS 1050, with opportunity to continue to develop individual skills in singing. Development of technique, confidence, and control through group and solo singing. Development of repertoire that includes contemporary and commercial vocal styles. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1061 - Voice Class II for Non-Majors

Intermediate Voice technique for non-majors taught in a group setting. Students will learn elements of technique, style and repertoire geared toward non-majors. Some singing

experience or successful completion of Voice I for Non-Music Majors required. Prereq: PMUS 1051 or permission from the instructor. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1100 - Music Theory I

Study of the evolution of harmonic and melodic procedures, as derived from the common practice period of classical music, and their relationship to contemporary music concepts. Coreq: PMUS 1110 and PMUS 1023. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1101 - Music Theory & Ear Training Lab

Provides supplemental instruction and tutoring for students enrolled in Theory I and Ear Training Sight Singing I. Course activities include training in the following subject areas: scale formation and identification, chord spelling and identification, interval spelling and identification, basic harmonic analysis and rhythmic dictation. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1105 - Music Theory I

Study of the evolution of harmonic and melodic procedures, as derived from the common periods of practice, and their relationship to contemporary music concepts. Restriction: Restricted to General Music Minors, GMUS-MIN. Co-requisite PMUS 1115. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1110 - Ear Training and Sight Singing I

An aural skills laboratory course that reinforces the concepts taught in Music Theory I through interval, melodic, harmonic, and rhythmic dictation as well as the preparation and sight singing of music. Coreq: PMUS 1100 and PMUS 1023. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1115 - Ear Training and Sight Singing I

An aural skills laboratory course that reinforces the concepts taught in Music Theory I through interval, melodic, harmonic, and rhythmic dictation as well as the preparation and sight singing of music. Restriction: Restricted to General Music Minors, GMUS-MIN. Co-requisite PMUS 1105. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1119 - Ear Training and Sight Singing I

An aural skills laboratory course that reinforces the concepts taught in Music Theory I through interval, melodic, harmonic, and rhythmic dictation as well as the preparation and sight singing of music. Co-req: PMUS 1120; Restricted to MUSC-BS majors with a sub-plan of MST. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1120 - Music Theory I

Study of the evolution of harmonic and melodic procedures, as derived from the common periods of practice, and their relationship to contemporary music concepts. Coreq: PMUS 1119; Restricted to MUSC-BS majors with a sub-plan of MST. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1200 - Music Theory II

The study of harmonic and melodic elements as they relate to modern, jazz, and commercial music. Topics include contemporary chord spelling, chord substitution, transposition, voice leading, harmonic analysis and modes. Prereq: PMUS 1023, 1100, and 1110. Coreq: PMUS 1210 and PMUS 1024. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1210 - Ear Training and Sight Singing II

An intermediate aural skills laboratory course that reinforces the concepts taught in Music Theory II through interval, melodic, harmonic, and rhythmic dictation as well as the preparation and sight singing of music.. Prereq: PMUS 1100 and PMUS 1110. Coreq: PMUS 1200 and PMUS 1023. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1211 - Ear Training and Sight Singing II

An intermediate aural skills laboratory course that examines interval, melodic, harmonic, and rhythmic dictation as well as the preparation and sight singing of music. Prereq: PMUS 1119; Restricted to MUSC-BS majors with a sub-plan of MST. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1310 - Sight Reading and Improvisation

Explores the techniques and concepts of instrumental jazz/commercial improvisation and beginning sight reading. Major concepts include understanding and interpreting the construction of jazz harmonic nomenclature and the mastery of the melodic elements of improvisation. Prereq: PMUS 1200, 2.0 credits from PMUS 1801 to PMUS 1823 (MIS Applied Lesson). Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 1400 - Group Applied Lessons

Consists of group music lessons of up to four students per group. The course meets for one hour per week. 45 minutes will be in group format and 15 minutes will be rotating private instruction. Note: PMUS 1400 is only available to majors in the Music Industry Studies degree program. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 1410 - Bembe Ensemble (Beginning Percussion)

Beginning Ensemble. Focus on basic percussion techniques and introductory ensemble playing utilizing Afro-Cuban literature. Comprised of percussion instruments of both definite and indefinite pitch. Introduces rhythmic sight-reading. Develops collaborative learning, aural skills and interactive multicultural awareness. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 1420 - UCD A Cappella Voices Ensemble

Beginning Ensemble. A cappella choir. This course will focus on choral singing to further the student's musical and vocal skills. Emphasis will be on successful preparation for the advanced a cappella groups. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 1430 - Solo Vocal Jazz Ensemble

Beginning Ensemble. Focus on basic performance and stylistic skills in the jazz language. Students will learn basic and jazz vocal techniques and skills and their application in study and performance. Students will perform in solo and duo settings. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 1440 - Acoustic Guitar Ensemble

Beginning Ensemble. This course explores the techniques and repertoire of acoustic guitar. Musical styles include: jazz, Latin, bluegrass, Renaissance, Baroque, tango and blues. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 1460 - Beginning Instrumental Ensemble

Focus on basic performance and stylistic skills in the jazz, Latin, and blues genres. Students will learn basic instrumental techniques and their application in group performances. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1470 - Performance Practice Ensemble

This beginning-level ensemble explores individual and group performance settings for first year audition-based MEIS students. Course skills include: performance protocol, presentation, self assessment and peer assessment. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1480 - Improvisation I

Introduction to the techniques and concepts of instrumental improvisation. Major concepts include identifying and improvising over common musical forms, understanding chord construction and chord/scale relationships, and developing an ability to improvise appropriately in a number of common styles. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 1500 - General Recital

This pass/fail course is a co-requisite for all students enrolled in applied music instruction. Students will evaluate and critique musical performances and presentations as well as develop an informed understanding of live musical performance as it pertains to diversity of genre and excellence in musical achievement. Restriction: Restricted to MUSC BS majors, and GMUS minors. Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 1

PMUS 1502 - Applied Bass

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1522 - Applied Bassoon

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1532 - Applied Clarinet

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1542 - Applied Bass Clarinet

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the

foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1552 - Applied Flute

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1562 - Applied French Horn

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1572 - Applied Guitar

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1574 - Applied Guitar, Singer/Songwriter

Private instruction guitar specific to singer/songwriter majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Restricted: BS-MUSC SWR. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Student must be accepted as a Singer/Songwriter major in the music program and have declared guitar as their primary instrument. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1582 - Applied Banjo

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1610 - Topics in Performance Music

Various topics related to music performance. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 1

PMUS 1612 - Applied Drum Kit

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1620 - Topics: Performance Music II

Various topics related to music performance. Repeatable. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 1622 - Applied Oboe

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1630 - Topics: Performance Music III

Various topics related to music performance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 1632 - Applied World Percussion

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in

a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1642 - Applied Piano

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1644 - Applied Piano, Singer/Songwriter

Private instruction in piano specific to singer/songwriter majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Restricted: BS-MUSC SWR. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Student must be accepted as a Singer/Songwriter major in the music program and have declared piano as their primary instrument. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1652 - Applied Jazz Piano

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1662 - Applied Saxophone

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1672 - Applied Electronic Digital Instrument

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Restriction: Restricted to MUSC majors within the College of Arts and Media. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1682 - Applied Trombone

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1692 - Applied Trumpet

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1702 - Applied Violin

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1712 - Applied Viola

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1722 - Applied Cello

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1732 - Applied Voice

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1734 - Applied Voice, Singer/Songwriter

Private instruction in voice specific to singer/songwriter majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Restricted: BS-MUSC SWR. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Student must be accepted as a Singer/Songwriter major in the music program. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1742 - Applied Tuba

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1762 - Applied Euphonium

Private music lessons for audition-based music majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 1801 - Appl Electric Bass, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1802 - Appl String Bass, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1803 - Applied Guitar, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1804 - Applied Percussion, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1805 - Applied Drum Kit, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1806 - Applied Piano, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1807 - Applied Jazz Piano, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1808 - Applied Voice, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1809 - Applied Electronic Digital Instrument, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1810 - Applied Trumpet, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1811 - Applied Trombone, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1812 - Applied Tuba, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1813 - Appl French Horn, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1814 - Applied Euphonium, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1815 - Applied Banjo, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1816 - Applied Bassoon, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1817 - Applied Clarinet, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1818 - Applied Flute, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1819 - Applied Saxophone, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1820 - Applied Oboe, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1821 - Applied Cello, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1822 - Applied Viola, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1823 - Applied Violin, Non-Juried

Private music lessons for Music Industry Studies majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Note: Only available to non audition based music majors in the Music Industry Studies emphasis area. Coreq: PMUS 1500 and at least 7 non-applied lesson credits. Prereq: Acceptance to the MEIS program. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 1901 - Applied Electric Bass

Private music lessons for General Music Minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music Minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1903 - Applied Guitar

Private music lessons for General Music minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1905 - Applied Drum Kit

Private music lessons for General Music minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1906 - Applied Piano

Private music lessons for General Music minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music Minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1908 - Applied Voice

Private music lessons for General Music minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 1909 - Applied Electronic Digital Instrument

Private music lessons for General Music minors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music minors, GMUS-MIN. **Semester Hours:** 1 to 1

PMUS 1923 - Applied Violin

Private music lessons for General Music minors majors. Lessons emphasize developing fundamental technique, learning and performing standard repertoire, understanding the foundations of musicality, sight reading and developing rhythmic accuracy. Restriction: Restricted to General Music minors, GMUS-MIN. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 2020 - Prague's Musical Legacy

Introduces students to composers and music of central Europe, with an emphasis on Czech music and culture. Additional topics include: aesthetics of central European film music; current trends in Slavic music; and the influence of the Czech language and history in music creation. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 3

PMUS 2050 - The Holistic Musician

This course is designed to examine and explore the development and practice of health and wellness for musicians, identifying and establishing career objectives, and developing core

strategies to thrive as a contemporary artist-musician. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2092 - Commercial Piano Styles I

This course will teach students how the piano is used in major commercial piano styles of the twentieth and twenty-first centuries. Students will develop a found of skills and knowledge that can be applied to professional music settings. Students must pass a piano audition or have permission from the instructor. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 2093 - Commercial Piano Styles II

This course with teach students in-depth stylistic performance skills, strategic improvisation, composition, and arranging. Students must pass a piano audition, or complete PMUS 2092, or have permission from the instructor. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 2094 - Rhythm Section Techniques

This course examines jazz and contemporary techniques for the rhythm section. Students will learn styles, skills and expectations for various rhythm instruments including guitar, bass, piano, and drum kit in order to improve musical communication, accompaniment skills and creativity. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 2095 - Commercial Guitar Styles and Theory - Harmony

A comprehensive guitar course that focuses on harmonic theory specific to the guitar fingerboard. Topics include: chord voicing and inversions, jazz and commercial accompaniment styles including walking bass, bossa nova, funk and finger picking. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 2096 - Commercial Guitar Styles and Theory - Melody

A comprehensive guitar course that focuses on harmonic theory specific to the guitar fingerboard. Topics include: tetrachords, scales, modes, arpeggios, finger technique development and improvisation. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 2097 - Commercial Singing I

Fundamentals of voice production: posture, breath management and support, tone, resonance, diction, phrasing and interpretation. Development of contemporary solo vocal repertoire (pop, rock, jazz, rhythm and blues) and traditional styles. Training in all aspects of vocal performance needed for live performance and recording sessions (microphone technique, stage presence, appropriate vocal styles and delivery). Development of solid understanding of vocal technique and its application to all vocal styles. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 2098 - Commercial Singing II

Fundamentals of voice production: posture, breath management and support, tone, resonance, diction, phrasing and interpretation. Extension of PMUS 3010, with opportunity to continue to develop individual skills in commercial solo singing. Development of contemporary solo vocal repertoire (pop, rock, jazz, rhythm and blues) and traditional styles. Training in all aspects of vocal performance needed for live performance and recording sessions (microphone technique, stage presence, appropriate vocal styles and delivery). Development of solid understanding of vocal technique and its application to all vocal styles. Prereq: PMUS 3010. Max hours: 2 Credits.

Semester Hours: 2 to 2

PMUS 2100 - Music Theory III

Exposes students to the theoretical aspects of Western European classical music from the Baroque period to the Classical period. Emphasis is placed on the melodic aspects of classical music including the creation of melody and the combining of melodies into polyphonic structures. Prereq: PMUS 1200, 1210, and 1024. Coreq: PMUS 1025 and 2110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2110 - Ear Training and Sight Singing III

An advanced laboratory course designed to help students listen to music analytically and to apply the harmonic principles learned in Music Theory III to the performance of music. Prereq: PMUS 1200 and PMUS 1210. Coreq: PMUS 2100 and PMUS 1023. Max hours: 1 Credit.

Semester Hours: 1 to 1

PMUS 2200 - Jazz Theory

Explores music theory as it applies to the genres of jazz and popular music. The topics include the theory of jazz improvisation, an analysis of jazz and popular music forms, the transcription and analysis of pop/jazz rhythms and melodies, and chord substitutions. Prereq: PMUS 1200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2220 - Commercial Electronic Music Composition

An investigation, analysis and application of contemporary electronic music compositional and production techniques in relation to commercial music and historical context. Prereq: PMUS 1200, PMUS 1210 and MUSC 2300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2310 - Introduction to Songwriting

Studies the craft of songwriting. Emphasis is on the creation of original melodies and lyrics. A variety of non-classical contemporary musical styles are considered. Prereq: PMUS 1200, 2.0

credits from PMUS 1801 to PMUS 1823 (MIS Applied Lesson). Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2315 - Introduction to Songwriting

Studies the craft of songwriting. Emphasis is on the creation of original melodies and lyrics. A variety of non-classical contemporary musical styles are considered. Prereq: PMUS 1105, 1115 and (1.0 credit from PMUS 1901-1923). Restriction: Restricted to General Music Minors GMUS-MIN. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2320 - Songwriting Analysis

This course presents an analysis of songs across genres and decades, including pop, rock, folk, singer/songwriter, punk, rap, indie, and bluegrass. Students isolate and compare lyrical, melodic, harmonic, rhythmic, and formal elements. Prereq: PMUS 1200. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2330 - Mastering Your Creative Process

This course is designed to learn how to foster, grow and maintain a healthy and functional relationship with creativity that can withstand the ebbs and flows of a professional music career. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2400 - Performance Art and Experimental Music

Introduces the history, philosophies and techniques of the European and American Avant-Garde theatrical performance and music. A study of music's various roles provides students with opportunities for creative application. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 2410 - Abakua Ensemble (Intermediate Percussion)

Intermediate Ensemble. Focus on percussion techniques and ensemble playing utilizing Afro-Cuban literature. Comprised of percussion instruments of both definite and indefinite pitch. Assumes basic rhythmic sight-reading ability. Introduces theoretical concepts. Develops collaborative learning, aural skills and interactive multicultural awareness. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2420 - Electro/Acoustic Ensemble

Intermediate Ensemble. This course will study established methods used as agents of musical creativity in the practice of improvised music. Focus on real-time musical collaboration utilizing musical vocabularies from a wide range of sources. Instrumentation of many kinds may be utilized. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2430 - Pop/Rock Ensemble

Intermediate Ensemble. This course will focus on group rehearsals of contemporary music with challenging technical and vocal requirements. Students will gain experience in transcribing and creating simple arrangements, learning adequate musicality, performing presentation and group cooperation. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2435 - Hip Hop/R&B Ensemble

Intermediate Ensemble. This course will focus on group rehearsals of hip hop and R&B with challenging technical and vocal requirements. Students will gain experience in transcribing and creating simple arrangements, learning adequate musicality, performing presentation and group cooperation. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 1

PMUS 2440 - Chamber Ensemble

Intermediate Ensemble. Mixed instrumental group for string, wind, brass, piano, and percussion players. Students will develop sight-reading and improvisation skills and perform student originals and arrangements including repertoire from the Baroque period through the Avant-Garde with no stylistic limitations. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2450 - Bluegrass Ensemble

Ensemble designed to give students the opportunity to explore Bluegrass music and related folk/country styles through performance, listening and discussion. Important artists, repertoire, musical trends, and historical perspectives will be studied. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2460 - Music Theatre Ensemble

Beginning Ensemble. This course consists of group rehearsals of contemporary and original music theater works with a focus on techniques, technologies, and strategies for arranging. Score reading, transposition, ranges, orchestration and composition will be covered. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 6 Credit. **Semester Hours:** 1 to 1

PMUS 2461 - Musical Theater Ensemble Production

Students will participate in a fully-staged musical theater production to be held every other year in the spring semester. This will include, but is not limited to: auditions, musical coachings,

stage and/or acting coachings and dance. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max hours: 12 Credits. **Semester Hours:** 3 to 3

PMUS 2470 - Mobile Device Ensemble

This ensemble will be comprised of students utilizing only laptop computers and mobile devices (e.g., iPads & iPhones) to create music. The ensemble will explore various contemporary styles including house, dance, ambient and other current electronic music. Repeatable. Max hours: 4 Credits. **Semester Hours:** 1 to 1

PMUS 2480 - Recording Studio Ensemble

Recording Studio Ensemble prepares students for the musical challenges experienced by studio musicians. Students work to develop instrumental competence in a variety of styles, arrange original songs, execute flawless takes, and work effectively with diverse artists in a recording environment. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 1

PMUS 2490 - Django Jazz Ensemble

Ensemble designed to give students the opportunity to explore the genre "gypsy jazz" and related styles through performance, listening and discussion. Important artists, repertoire, musical trends, and historical perspectives will be studied. Open to advanced instrumentalists and vocalists, audition based. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2495 - New Electronics Orchestra Ensemble (NEO)

A performance laboratory for the combination of electronic and acoustic instruments, including improvisation, composition, as well as live video and game sound design. Class requires either an audition or meeting with ensemble faculty. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 2502 - Applied Bass

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1502 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 2522 - Applied Bassoon

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1522 (Two semesters). Repeatable. Max Hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2532 - Applied Clarinet

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1532 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2542 - Applied Bass Clarinet

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1542 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2552 - Applied Flute

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1552 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2562 - Applied French Horn

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission.

Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.
Prereq: PMUS 1562 (Two semesters). Repeatable. Max Hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2572 - Applied Guitar

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission.
Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.
Prereq: PMUS 1572 (Two semesters). Repeatable. Max Hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2582 - Applied Banjo

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission.
Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.
Prereq: PMUS 1582 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2612 - Applied Drum Kit

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission.
Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.
Prereq: PMUS 1612 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2622 - Applied Oboe

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission.
Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.
Prereq: PMUS 1622 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2632 - Applied World Percussion

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1632 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2642 - Applied Piano

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1642 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2652 - Applied Jazz Piano

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1652 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2662 - Applied Saxophone

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1662 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2672 - Applied Electronic Digital Instrument

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality,

developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1672 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2682 - Applied Trombone

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1682 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2692 - Applied Trumpet

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1692 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2702 - Applied Violin

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1702 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours: 1 to 1**

PMUS 2712 - Applied Viola

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.

Prereq: PMUS 1712 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 2722 - Applied Cello

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury.

Note: Students must be accepted as an audition-based music major. Instructor permission.

Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.

Prereq: PMUS 1722 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 2732 - Applied Voice

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury.

Note: Students must be accepted as an audition-based music major. Instructor permission.

Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.

Prereq: PMUS 1732 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 2742 - Applied Tuba

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury.

Note: Students must be accepted as an audition-based music major. Instructor permission.

Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.

Prereq: PMUS 1742 (Two semesters). Repeatable. Max hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 2750 - Functional Guitar Skills: Acoustic Guitar Styles

This course is designed to introduce students to the fundamental architecture and techniques of contemporary acoustic guitar styles. The first part of the course will explore the techniques, repertoire and styles of Fingerstyle Guitar, while the second half will be dedicated to Flatpicking styles and techniques. Repeatable. Max hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 2751 - Functional Guitar Skills: Electric Guitar Styles

This course is designed to introduce students to the fundamental architecture and techniques of contemporary electric guitar styles with regard to studio and live performance situations.

Students will also explore the business aspects of music performance including marketing, self-assessment, career strategies, recording, and press kits. Repeatable. Max hours: 4 Credits.

Semester Hours: 2 to 2

PMUS 2762 - Applied Euphonium

Private music lessons for audition-based music majors. Lessons emphasize developing proficient technique, learning and performing advanced repertoire, demonstrating musicality, developing rhythmic accuracy and improvising. Students perform in a general recital and jury.

Note: Students must be accepted as an audition-based music major. Instructor permission.

Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits.

Prereq: PMUS 1762 (Two semesters). Repeatable. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PMUS 2855 - Music in Cuba Study Abroad

Explores Cuban music in its cultural context, examining the development of musical genres, and the current musical and cultural landscape. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3060 - Ensemble Engineer

This engineer position is designed to provide audio support for a various performing ensembles. Duties include live audio reinforcement during concerts and rehearsals, audio archiving, organization and equipment management. Enrollment is limited to one semester for non-audition track students and two semesters for audition-track students. Prereq: MUSC 4530.

Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 3070 - Ensemble Manager

This manager position is designed to provide booking, promotional and organizational support for various performing ensembles. Enrollment is limited to one semester for non-audition track students and two semesters for audition-track students. Prereq: MUSC 3690. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 1

PMUS 3100 - US Music: Social & Political Impact

Examines and describes the social meaning of American music with particular reference to the roles of major ethnic groups in the creation of this music and the way that the music reveals attitudes toward these groups. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3110 - Social and Political Implications of American Music

Examines and describes the social meaning of American music with particular reference to the roles of major ethnic groups in the creation of this music, and the way that the music reveals attitudes toward these groups. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3200 - Popular Music Performance Skills

Students develop live performance skills including expression, stage presence and creating energy on stage, as well as connecting with the audience. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 3210 - Introduction to Teaching Private Music Lessons

Prepares students to teach private music lessons. Includes a survey of teaching styles from around the world, exercises, guest lectures, practical guidance for establishing a teaching studio and student research presentations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3220 - Vocal Pedagogy

Students will develop a working knowledge of postural, breathing, articulatory, and vocal anatomy, vocal hygiene, and methodology prior to teaching voice in to prevent harm. Students will learn how to listen critically and develop intuition, analytical, and diagnostic skills. Restriction: Restricted to Music majors. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 3300 - Advanced Jazz Improvisation

Explores the techniques and concepts of instrumental jazz/commercial improvisation and sight reading. Major concepts include understanding and interpreting the construction of jazz harmonic nomenclature and the mastery of the melodic elements of improvisation. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 3310 - Intermediate Songwriting

Presents concepts of songwriting that build upon those presented in MUSC 2300. Students are expected to understand and discuss musical concepts and lyric structure and use these concepts in the creation of original songs. Prereq: PMUS 1024, PMUS 1200, and PMUS 1210. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3320 - Popular Music Arranging

This course will focus on techniques, technologies and strategies for contemporary arranging. Students score original compositions for various instrumentation using notation software. Prereq: PMUS 1200, PMUS 1210, and PMUS 1024. Restriction: Restricted to MUSC-BS majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3330 - Advanced Vocal Improvisation

Provides study of harmony, style and advanced improvisation techniques for vocalists. Course activities include study of scat singing, syllables, accents, rhythmic patterns, and phrasing over standard chord changes in several genres. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 3340 - Commercial Songwriting

This course is designed to explore songwriting for publishing and that supports moving picture. Students will gain an understanding and have practical application of analyzing, understanding, writing and pitching music for publishing, film, tv and advertisement. Prereq: PMUS 3310. Restriction: Restricted to Sophomore standing or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3410 - Rumba Ensemble (Advanced Percussion)

Advanced Ensemble. Focus on percussion techniques and ensemble playing utilizing Afro-Cuban literature. Comprised of percussion instruments of both definite and indefinite pitch. Assumes intermediate rhythmic sight-reading ability. Develops collaborative learning and awareness of drumming as universal language. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 3430 - Jazz Combo Ensemble

Advanced Ensemble. Instrumental jazz group. This course will focus on group rehearsals of bebop, swing, funk, & fusion. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 3450 - Singer/Songwriter Ensemble

Advanced Ensemble. Focus on student compositions of original songs with lyrics and instrumental accompaniment including creation of lead sheets for band performances. Individual and group songwriting is explored. Students participate in community-building activities including community engagement and a songwriting retreat. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 3460 - Ninth Street Singers Ensemble

Signature Ensemble. Elite a cappella mixed choir. This course will focus on group rehearsals of various genres of vocal ensemble music, including pop, rock, jazz, musical theater, and gospel. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 3470 - Piano Trio Ensemble

Advanced Piano, Bass and Drum Students will create piano trios, receive feedback from faculty in weekly coaching sessions, and have professional opportunities such as gigs and recordings. Contexts include: Standard Jazz, Contemporary Jam Band and original arrangements. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 1

PMUS 3502 - Applied Bass

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1502 and PMUS 2502 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3522 - Applied Bassoon

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1522 and PMUS 2522 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3532 - Applied Clarinet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1532 and PMUS 2532 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3542 - Applied Bass Clarinet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and

accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1542 and PMUS 2542 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3552 - Applied Flute

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1552 and PMUS 2552 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3562 - Applied French Horn

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1562 and PMUS 2562 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3572 - Applied Guitar

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1572 and PMUS 2572 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3582 - Applied Banjo

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and

accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1582 and PMUS 2582 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3612 - Applied Drum Kit

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1612 and PMUS 2612 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3622 - Applied Oboe

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1622 and PMUS 2622 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3632 - Applied World Percussion

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1632 and PMUS 2632 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3642 - Applied Piano

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and

accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1642 and PMUS 2642 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3652 - Applied Jazz Piano

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1652 and PMUS 2652 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3662 - Applied Saxophone

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1662 and PMUS 2662 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3672 - Applied Electronic Digital Instrument

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1672 and PMUS 2672 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3682 - Applied Trombone

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and

accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1682 and PMUS 2682 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3692 - Applied Trumpet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1692 and PMUS 2692 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3702 - Applied Violin

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1702 and PMUS 2702 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3712 - Applied Viola

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1712 and PMUS 2712 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3722 - Applied Cello

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and

accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1722 and PMUS 2722 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3732 - Applied Voice

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1732 and PMUS 2732 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3742 - Applied Tuba

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1742 and PMUS 2742 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3762 - Applied Euphonium

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing and performing repertoire, demonstrating a high level of musicality, cultivating superior performance practice, identifying musical goals and preparing and performing a junior recital. Note: Students must be an audition-based music major and accepted to performance emphasis. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1762 and PMUS 2762 (two semesters each), and successful completion of sophomore proficiency. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3772 - Applied Singer/Songwriter

This is a 2-credit course consisting of one-on-one, hour-long weekly lessons in songwriting and performance skills. Aspects of transcription, analysis, and career development will be incorporated. Co-requisites - PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 3820 - Music History Modules

This modular course surveys various popular, Western European, and world music styles. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 1

PMUS 3825 - Real History of Rock and Roll

Examines the historical and social framework developments in music from its roots in country, through jazz and blues to current trends. Special emphasis is given to guest lecturers and their expertise performing, covering and presenting the music. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3827 - History Of Jazz

This course will give students an inside look at the history and radical changes brought about by the musicians, technology and the social interplay between US social history and jazz music by examining the music & musicians that performed it. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3828 - History of Bluegrass

This course will cover the history of the music and musicians that contribute to the development of the Bluegrass musical style. Topics to be covered include early country music, traditional bluegrass, and contemporary bluegrass. Restriction: Restricted to students with a junior or senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3829 - A Survey of Heavy Metal

A history of heavy metal from the 1970's to present day exploring how religion, politics, community, and censorship have helped to shape this unique genre of music. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3830 - History and Literature of Music I

This course provides a historical perspective of Western music literature from the medieval through the classical era. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3831 - History and Literature of Music II

This course provides a historical perspective of Western music literature from the Romantic era through the present day. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3832 - Music in Culture

A broad introduction to music as a human phenomenon, this course examines how diverse musics live in and as culture. Through a study of diverse musical elements, genres, periods, styles, and composers in jazz, folk, popular, and world music traditions. Max hours: 3 Credits.

Semester Hours: 3 to 3

PMUS 3835 - History of Electronic Music

This course will give students an inside look at the history and radical changes brought about by the musicians, technology and the social interplay between US social history and electronic music by examining the music & musicians that performed it. Restriction: Restricted to sophomore standing or higher. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 3840 - Independent Study: PMUS

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PMUS 4060 - Music Theory Analysis

Students analyze the harmonic, melodic, and formal aspects of the music from various musical time periods and genres which include Baroque, Classical, Romantic, Contemporary Classical, jazz and popular music. Prereq: PMUS 2110 and 2200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 4200 - Senior Recital Project

The capstone course for performance majors that coincides with their senior recital. The project focuses on musical and thematic material from the student's senior recital and may include: historical research, theoretical analysis, transcriptions and creation of a digital portfolio. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PMUS 4310 - Advanced Songwriting

Students will continue to learn the craft of songwriting with focus on the skills of advanced lyric writing technique. Students will expand their knowledge of theoretical aspects of harmony and melody. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PMUS 4410 - Claim Jumpers Ensemble

Signature Ensemble. The Claim Jumpers will focus on group rehearsals of significant traditional jazz literature, masterworks of classic jazz of the 1920's, and creativity within the traditional jazz genre at the highest level. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 4430 - Guitar Ensemble

Signature Ensemble. Advance jazz guitar group. This course will focus on group rehearsals of bebop and fusion. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 4440 - Voz de la Clave

Signature Ensemble. This ensemble performs Salsa and Afro-Caribbean music. Ensemble time is spent rehearsing repertoire and learning about Latin music concepts. Prereq: Audition or meeting with ensemble faculty. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 4460 - Mix A Cappella Ensemble

Advanced a cappella performing group, working in a wide range of stylistic offerings. Enrollment by audition only. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 4461 - UCD Mix Ensemble Management

This class focuses on management activities for the "UCD Mix" A Cappella ensemble, including website content, arranging, choreography and recording roles as assigned by the professor. Coreq: PMUS 4460. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

PMUS 4470 - Lark/Advanced A Cappella Ensemble

Lark is an advanced a cappella ensemble for female identifying individuals. Admission to this group is by audition only. Members must have strong sight reading skills, advanced musicianship and performance skills. Lark performs several times per semester. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 1

PMUS 4502 - Applied Bass

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1502, PMUS 2502, PMUS 3502 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4522 - Applied Bassoon

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance

practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1522, PMUS 2522, PMUS 3522 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4532 - Applied Clarinet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1532, PMUS 2532, PMUS 3532 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4542 - Applied Bass Clarinet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1542, PMUS 2542, PMUS 3542 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4552 - Applied Flute

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1552, PMUS 2552, PMUS 3552 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4562 - Applied French Horn

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance

practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1562, PMUS 2562, PMUS 3562 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4572 - Applied Guitar

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1572, PMUS 2572, PMUS 3572 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4582 - Applied Banjo

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1582, PMUS 2582, PMUS 3582 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4600 - Topics in Music Performance

Various topics related to music performance. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

PMUS 4612 - Applied Drum Kit

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1612, PMUS 2612, PMUS 3612 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4622 - Applied Oboe

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1622, PMUS 2622, PMUS 3622 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4632 - Applied World Percussion

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1632, PMUS 2632, PMUS 3632 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4642 - Applied Piano

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1642, PMUS 2642, PMUS 3642 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4652 - Applied Jazz Piano

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1652, PMUS 2652, PMUS 3652 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4662 - Applied Saxophone

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1662, PMUS 2662, PMUS 3662 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4672 - Applied Electronic Digital Instrument

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1672, PMUS 2672, PMUS 3672 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4682 - Applied Trombone

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1682, PMUS 2682, PMUS 3682 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4692 - Applied Trumpet

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1692, PMUS 2692, PMUS 3692 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4702 - Applied Violin

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1702, PMUS 2702, PMUS 3702 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4712 - Applied Viola

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1712, PMUS 2712, PMUS 3712 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4722 - Applied Cello

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1722, PMUS 2722, PMUS 3722 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4732 - Applied Voice

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1732, PMUS 2732, PMUS 3732 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4742 - Applied Tuba

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1742, PMUS 2742, PMUS 3742 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4762 - Applied Euphonium

Private music lessons for audition-based music majors. Lessons emphasize perfecting musical technique, memorizing professional-level repertoire, demonstrating an expert level of musicality, analyzing repertoire, achieving a musical identity, cultivating superior performance practice and preparing and performing a senior recital. Note: Students must be accepted as an audition-based music major. Instructor permission. Coreq: PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson credits. Prereq: PMUS 1762, PMUS 2762, PMUS 3762 (two semesters each), and successful completion of Junior Recital. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4772 - Applied Singer/Songwriter

This is a 2-credit course consisting of one-on-one, hour-long weekly lessons in songwriting and performance skills. Aspects of transcription, analysis, and career development will be incorporated. Plan Code: MUSC-BS SWR; Co-requisites - PMUS 1500, enrollment in an ensemble and at least 7 non-applied lesson. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 2

PMUS 4840 - Independent Study: PMUS

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

Philosophy

PHIL 1012 - Introduction to Philosophy: Relationship of the Individual to the World

Introductory course in philosophy that focuses on some of the central questions of philosophy, including theories of reality and the nature of knowledge and its limits. The knowledge of these areas is essential to the student for informed participation in the resolution of contemporary problems in today's society. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH3 **Semester Hours:** 3 to 3

PHIL 1020 - Introduction to Ethical Reasoning

Studies ethical problems and forms of ethical reasoning within the larger context of social and political philosophy. Specific ethical problems may be addressed, such as poverty, famine, abortion, punishment, animal rights, and environmental sustainability. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH3 **Semester Hours:** 3 to 3

PHIL 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: Fall. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PHIL 1700 - Philosophy and the Arts

Considers philosophical questions involved in the analysis and assessment of artistic expressions and of the objects with which the arts, including the literary arts, are concerned. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 2441 - Logic, Language and Scientific Reasoning

Intro course in argumentation, critical thinking and scientific reasoning. Covers rules of logical inference, informal fallacies, problem solving, and probabilistic reasoning. Enhances analytical and critical thinking skills tested on LSAT and MCAT, central to advancement in sciences, and broadly desired by employers. Max Hours: 3 Credits. Term offered: spring, summer, fall. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH3. **Semester Hours:** 3 to 3

PHIL 2510 - Philosophy of Nature

Critical comparison of different views of nature presupposed in science, art, religion, and environmental policy. Concepts of "natural" are examined in relation to such issues as animal rights, wilderness preservation, synthetic landscape, technology, pollution, and population control. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PHIL 3002 - Ancient Greek Philosophy

History of ancient Greek thought, including traditional myth, pre-Socratic fragments, Plato's dialogues, and Aristotle's systematic philosophy. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3005 - Roman and Early Medieval Philosophy

Surveys philosophy in the Roman era, focusing on the Hellenistic schools (Epicureanism, Stoicism and Skepticism), Neoplatonic thought, the advent of Christianity, and the earliest Christian philosophers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3010 - Medieval Philosophy

History of philosophy from Augustine through Scotus and Ockham, the 5th through the 14th centuries. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3022 - Modern Philosophy

History of philosophy from Descartes through Kant. Cross-listed with PHIL 5022. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3030 - Philosophies of the Good Life & Happiness

Examines concepts and theories of happiness and their application in everyday living as discussed by major philosophers since antiquity (e.g., Aristotle, Kant, Nietzsche). Also considers critiques of Happiness (e.g., Freud, Schopenhauer). Recommended preparation: PHIL 1012 or PHIL 1020. Term offered: summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3032 - Twentieth Century Analytic Philosophy

Surveys representative philosophers, methods, and problems in the 20th century analytic tradition. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3150 - History of Ethics

Surveys the ethical thought of major figures in the history of philosophy, beginning with Plato and ending with the 19th century. Examples: Aristotle, Hume, Kant and Mill. (Class readings of primary philosophical texts.) Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3200 - Social and Political Philosophy

Examines basic issues in social and political philosophy, including justice, freedom, individuality, power and community. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3250 - Business Ethics

Surveys some of the major moral problems which arise in business, such as the nature and scope of the moral responsibilities of corporations, affirmative action, and truth in advertising. Begins with a study of moral reasoning, ethical theory, and the challenges of applying ethical theory. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3280 - War and Morality

Attempts to identify and analyze some of the major moral issues of war. When is a war just, when is it not? What are morally acceptable rules of engagement? What, if anything, justifies violating them? How does one evaluate terrorism and war against terrorism? What are moral alternatives to the violence of war? Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3300 - Special Topics in Philosophy

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PHIL 3340 - Investigating Nature: Introduction to the Philosophy of Science

This course is designed to introduce students to the Philosophy of Science. (No background in philosophy is required.) Philosophy of Science is concerned with how best to use observation and experiment to learn about the world, whether we are investigating fundamental physical structures, the complex operations of biological organisms, or the social dynamics of human groups. Drawing on both historical and contemporary works, we will seek to understand, among other topics, what makes scientific inquiry distinct from other forms of human learning, what accounts for the credibility and objectivity of scientific claims, the influence of psycho-social biases on observation and theory formation, as well as whether accepting a scientific theory, explanation or hypothesis means that we think it is true. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3350 - Metaphysics

Studies major theories of reality, including topics such as the nature of substance, space and time, and universals and particulars. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3360 - Epistemology

Study of major theories of knowledge, including such problems as perception and the distinction between belief and knowledge. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3410 - Asian Philosophies and Religions

We in the Western world encounter a vastly different world, a radically different "universe of meaning," when we examine the traditions of the East. Even what we tacitly assume to be

"real" is claimed by the Hindus and Buddhists of India to be a grand illusion. The world of China is, again, very different from India. An examination of Tibetan and Japanese religious forms will conclude our study of Asian thought. Cross-listed with RLST 3410. Max hours: 3 Credits.

Semester Hours: 3 to 3

PHIL 3430 - Environmental Ethics

While human industry/technology creates enormous material prosperity, it can result in devastating environmental damage. This course analyzes the moral values, consequences and duties implied in relationships between human beings, animals and ecological systems, while seeking out new and ethical approaches. Cross-listed with PHIL 5430, HUMN 5430 and SSCI 5430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3440 - Introduction to Symbolic Logic

Covers truth functional and quantificational logic through polyadic first order predicate calculus and theory of identity. Attention is given to such problems in metatheory as proofs of the completeness and consistency of systems of logic. Prereq: A passing grade in PHIL 2441 or MATH 3000 or permission from the instructor is required in order for students to enroll in this course. Cross-listed with MATH 3440. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3441 - Philosophical Reasoning Skills

This course provides Philosophy majors and other philosophically interested students with the skills and tools necessary for effectively navigating philosophical discussions. In this course we will cover issues such as validity and soundness, as well as several systems useful for demonstrating validity. The course will in addition address important issues in the philosophy of language, including the very important question of definitions, as well as the use of thought experiments and avoidance of informal fallacies. Finally, since philosophical reasoning increasingly involves knowledge of the methods of scientific reasoning, those skills will also be included in the course. Cross-listed with PHIL 5441. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

PHIL 3500 - Ideology and Culture: Racism and Sexism

Surveys the nature and role of racism and sexism. Topics may include ideology theory, naturalism, the equal protection clause, recent scientific discussion, sociolegal history, and social constructionism. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3550 - Philosophy of Death and Dying

Historical overview of the metaphysical question of whether there is life after bodily death, beginning with classical arguments through the current debate over such phenomena as near death experiences and deathbed visions. Also focuses on ethical controversies such as suicide, euthanasia, and capital punishment, and the efficacy of philosophical consolations for grief. Strongly Recommended: Three hours of philosophy; preferably PHIL 1012 but if the student does not have coursework, consulting with the instructor prior to registration is strongly recommended. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3656 - Contemporary Religious Ethics: Jewish and Christian Traditions

Critical comparison of different views of nature presupposed in science, art, religion, and environmental policy. Concepts of "natural" are examined in relation to such issues as animal rights, wilderness preservation, synthetic landscape, technology, pollution, and population control. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3760 - Kant

A close study of Immanuel Kant's revolutionary thought, focusing on Kant's ontology, epistemology, and ethical theory, as they are articulated in his Critique of Pure Reason and Critique of Practical Reason. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5830. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PHIL 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PHIL 3981 - Chinese Philosophy and Culture

China is a fascinating world with its own characteristic orientation to philosophical questions. Chinese thinkers produced the "Flowering of a Hundred Schools of Thought" in the Axial Age, the same period of time in which philosophy was coming to birth in ancient Greece. Covers some of the Chinese schools, including Confucianism, Taoism, Mohism, Legalism, Chinese "logic,"

and the later schools of schools of Neo-Confucianism, Neo-Taoism and Chinese Buddhism. Cross-listed with RLST 3660. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Department consent required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

PHIL 4000 - 19th and 20th Century Continental Philosophy

A seminar on key problems and thinkers in the nineteenth & twentieth century continental philosophical traditions and their contemporary significance. Cross-listed with PHIL 5000, HUMN 5000 and SSCI 5000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4040 - Skepticism

Considers various forms of skepticism in the history of philosophy, as well as the ways that philosophers have responded to skepticism, especially in theories of belief. Note: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4101 - Pragmatism: Classical American Philosophy

The most significant philosophical tradition born in the United States is pragmatism. Examines several of the most important classical works of this tradition, the influence of thinkers who have helped to shape pragmatism, and the contemporary relevance of this tradition. Figures who may be included are: Emerson, Pierce, Royce, James, Dewey, Mead and Rorty. Prereq: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5101, HUMN 5101, SSCI 5101. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4150 - Twentieth Century Ethics

Surveys representative philosophers, methods, and/or problems in 20th century ethics. Prereq: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4200 - Philosophical Problems and Contemporary Culture

Issues and controversies in contemporary culture, their relation to modern theories of society, and their manifestations in the arts, science and technology, education, religion and ethics. Prereq: PHIL 3002 or 3022, and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have coursework, consulting with the instructor prior to registration is strongly recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4220 - Aesthetics and the Philosophy of Art

Introduction to major theories of aesthetics and contemporary discussions of problems in aesthetics and the philosophy of art, including topics such as: the nature of art, interpretation and evaluation in art. Cross-listed with PHIL 5220 and HUMN 5220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4230 - Postmodernism

Traces the history of a set of ideas collectively known as postmodern. Disrupting traditional frameworks of knowledge, these concepts have had an enormous impact on the social sciences, the humanities, and the arts. Course readings expose students to the cross-disciplinary impact of postmodernism on theory, content, and method. Prereq: Upper division standing, PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4242 - Bioethics

Examines some of the major moral issues confronting the nation's health care system. The class will search for solutions to such problems as financing health care for those unable to do so on their own, determining the extent of a patient's right to both refuse and demand certain types of medical treatment, and allocating scarce medical resources such as lifesaving vital organs. The springboard for examining these issues will be the doctor or patient relationship framed by the moral principles of respect for persons and beneficence. Prereq: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5242, SSCI 5242, HUMN 5242. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4260 - Philosophy of Law

Surveys theoretical positions on the nature of law, with particular emphasis on American law. Prereq: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5260. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4270 - Philosophy of History

Examines critical and speculative theories of history, including the problems of methodology, explanation, values, and the relationship between history and social philosophy. Prereq: PHIL 3002 or 3022 and a minimum grade of C in each previous philosophy course are strongly recommended, but if the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4300 - Philosophy of Mind

Consideration of the problems in the philosophy of mind, such as the mind-body problem, the problem of our knowledge of other minds, the compatibility of free will and determinism, and discussion of such concepts as action, intention, motive, desire, enjoyment, memory, imagination, dreaming and self-knowledge. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5300. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Cross-listed with ENGL 4308, ENGL 5308, PHIL 5308, WGST 4308, WGST 5308. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4350 - Philosophy of Science

This course examines some of the central philosophical questions concerning the nature of scientific investigation, such as the logical relation of evidence to hypothesis, the objective adjudication of competing hypotheses, the logical function of modeling in empirical inquiry, the criterion for a classificatory system to underwrite induction and explanation, the explanatory relationships between the differing sciences, as well as the theoretical and pragmatic function of scientific law and its relationship to explanation. Cross-listed with PHIL 5350. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4360 - American Legal Process

Introduces students to basic issues in American jurisprudence as well as to the elements and dynamics of the modern American legal system. Cross-listed with PHIL 5360. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4460 - Theories of Human Nature

Consideration of such problems as the changeability and definability of human nature, and the possibility of a science of human nature. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4470 - Concepts of the Soul

Asks the questions: What is the nature of the human being? What makes us "human?" Do humans have a "soul?" What is its nature? Is it different from the "spirit?" What is its ultimate fate? Examines the various theories put forward by philosophers of both Eastern and Western traditions. Cross-listed with PHIL 5470 and RLST 4440, 5440. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4480 - Perspectives on Good and Evil

Examines "problem of evil" as formulated in the philosophical tradition. Presents classical formulation of the problem, traditional solutions & classical critiques of each answer. Considers perspectives of various religious orientations, which deal differently with the question of suffering. Cross-listed with PHIL 5480, RLST 4480/5480. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4500 - Feminist Philosophy

Seminar on key debates & figures in historical & contemporary feminist philosophy. Topics may include: rights, embodiment, gender, sexuality, race, reason, & violence. Figures may include: Wollstonecraft, Stanton, Beauvoir, Judith Butler, and bell hooks. Crosslisted with PHIL 5500, WGST 4500 & 5500. **Semester Hours:** 3 to 3

PHIL 4600 - Philosophy of Religion

Nature of religion and methods of studying it. Cross-listed with HUMN 5600, PHIL 5600, RLST 4060, 5060, and SSCI 5600. Term offered: summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4650 - Differing Concepts of God

God, Gods, and Goddesses have been imagined in many different modes, forms, aspects, and guises throughout human history. This course investigates Paleolithic models of God, the Great Goddess of the Neolithic era, the Gods of mythological traditions, Biblical God, the abstract God of the philosophers, the God of the pantheists, the deists, and the God of the mystics. Cross-listed with PHIL 5655, RLST 4400 and 5400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4700 - Seminar in a Major Philosopher

The major philosophical texts of one philosopher is studied in this course. Philosophers to be studied are major figures in the history of philosophy such as Plato, Aristotle, Kant and Hume. Note: May be taken for credit more than once. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

PHIL 4710 - Western Religious Thought

Focuses on philosophers and theologians who have contributed to the evolution of the three great religious traditions of the West: Judaism, Christianity and Islam. Targets thinkers from three periods: the ancient or formative era, the medieval era, and the contemporary era. Note: Specific philosophers chosen may vary in different semesters. Cross-listed with RLST 4070. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4720 - Eastern Religious Thought

Parallels the course in Western religious thought. The great religious traditions of the East, including Hinduism, Buddhism, Confucianism, and Taoism, are examined as they are presented in the writings of key philosophical representatives of each tradition. Cross-listed with RLST 4080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4730 - Philosophy and Literature

Considers the philosophical dimensions of literature. Strongly Recommended: PHIL 3002 or 3022, and a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5730, ENGL 4735 and 5735. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4735 - Rationalism

Addresses the fundamental questions of truth and reality through natural reason. Topics vary and may include metaphysics and the rise of modern science; women and the enlightenment; historical problems and linguistic analysis. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5735. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4740 - Empiricism

Considers the nature and importance of experience. Focuses on British Empiricism, but additional themes which vary may include: American pragmatism, logical positivism, scientific empiricism, phenomenology of experience. Strongly Recommended: PHIL 3002 or 3022, a

minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4750 - Introduction to Phenomenology

Examines the contribution of phenomenology to selected topics in the theory of meaning, philosophy of mind, ontology, and epistemology, through a study of such philosophers as Husserl, Heidegger, Sartre and Merleau-Ponty. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5750. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4755 - Philosophical Psychology

Explores debates about psyche and body, mind and world, self and others, and consciousness and nature. Examines the philosophical questions related to those debates that arise within theories of perception, affect and cognition offered by influential psychological models. Cross-listed with HUMN 5750, SSCI 5750 and PHIL 5755. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4770 - Hegel

A systematic study of the thought of G.W.F. Hegel through his most important and influential works: The Phenomenology of Spirit; The Encyclopedia of Philosophical Sciences; The Science of Logic; Lectures on the Philosophy of History; and his lectures on the history of philosophy, art and religion. Focus of the course varies. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5770. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4780 - Heidegger

Studies the thought of Martin Heidegger, one of the most important philosophers of the 20th century. Includes texts from both Heidegger's early and later periods, and focuses on his analyses of human subjectivity and being. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4790 - Nietzsche

A close study of Nietzsche's philosophical writings, with attention to his significance for philosophy in the 20th century and beyond. Cross-listed with PHIL 5790. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4795 - Marx and Marxism

A close study of the most influential works of Karl Marx and subsequent theorists who provide either an influential interpretation of the works of Marx or contribute to an innovative application or elaboration of the basic tenets of Marxism. Cross-listed with PHIL 5795. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4800 - Plato

A careful study of Plato's writings, emphasizing the dialogue form, and discussion of Plato's significance for the history of ethics, political theory, psychology, metaphysics and epistemology. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5800. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4810 - Aristotle

Examines Aristotle's systematic philosophy and discusses its contributions to logic, epistemology, physics, psychology, metaphysics, ethics and political theory. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5810. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4812 - Special Topics in Philosophy

Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

PHIL 4820 - Hume

A close study of the most influential works of Karl Marx and subsequent theorists who provide either an influential interpretation of the works of Marx or contribute to an innovative application or elaboration of the basic tenets of Marxism. Cross-listed with PHIL 5795. Max Hours: 3 Credits. Considers the work of eighteenth century philosopher David Hume. Emphasis on unity of Hume's thought. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework,

consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5820. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4833 - Existentialism

Examines one of the most influential movements in recent European thought, beginning with existentialism's 19th century roots, and continuing on to the existentialist philosophers of the 20th century. Figures covered may include Dostoyevsky, Kierkegaard, Nietzsche, Heidegger, Sartre and de Beauvoir. Strongly Recommended: PHIL 3002 or 3022, a minimum grade of "C" in each previous philosophy course. If the student does not have this coursework, consulting with the instructor prior to registration is strongly recommended. Cross-listed with PHIL 5833, HUMN 5833 and SSCI 5833. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4840 - Independent Study: PHIL

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 12 Credits.

Semester Hours: 1 to 3

PHIL 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PHIL 4900 - John Dewey

John Dewey was one of the most important of the American philosophers and public intellectuals of the twentieth century. Topics may include Dewey's philosophical naturalism, pragmatist epistemology, process metaphysics and philosophies of experience, aesthetics, religion, technology and democracy. Cross-listed with PHIL 5900. Max hours: 3 Credits.

Semester Hours: 3 to 3

PHIL 4920 - Philosophy of Media and Technology

A philosophical examination of interrelationships between contemporary media, technology, and their impacts upon character of contemporary life and values. Topics may include ethics, epistemology, democracy, advertising, media literacy and criticism. Cross-listed with PHIL 5920, HUMN 5920, SSCI 5920. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4933 - Philosophy of Eros

What does it mean to understand philosophy as an erotic activity? This question will be examined, first by studying Plato's dialogues-such as Lysis, Symposium and Republic-and then by reading texts from Sigmund Freud, Michael Foucault and others. Cross-listed with PHIL 5933, WGST 4933/5933, SSCI 5933 and HUMN 5933. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 4950 - Honors Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max hours: 6 Credits.

Semester Hours: 3 to 6

PHIL 4980 - Special Topics in Philosophy

Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 3

PHIL 5013 - Methods and Practices of Graduate Interdisciplinary Humanities

The second of three required Master of Humanities core courses, this course introduces beginning graduate students to methodologies and intellectual frameworks for gathering, organizing, and developing interdisciplinary research. Focus is on the application of theories and methods of research, interpretation and analysis in humanistic research through readings that explore philosophical and cultural discourses have altered theory and method. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with HUMN/SSCI 5013. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5040 - Skepticism

Considers radical skepticism in the form of Sextus Empiricus' Outlines of Pyrrhonism. Following Peter Suber's "Essay on Classical Skepticism," the course also looks at historical responses to Pyrrhonean skepticism, especially in theories of belief. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5101 - Pragmatism: Classical American Philosophy

The most significant philosophical tradition born in the United States is pragmatism. Examines several of the most important classical works of this tradition, the influence of thinkers who have helped pragmatism, and the contemporary relevance of this tradition. Figures who may be

included in this course are: Emerson, Pierce, Royce, James, Dewey, Mead and Rorty. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4101, SSCI 5101, HUMN 5101. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5220 - Aesthetics and the Philosophy of Art

Introduction to major theories of aesthetics and contemporary discussions of problems in aesthetics and the philosophy of art, including topics such as: the nature of art, interpretation and evaluation in art. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4220 and HUMN 5220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5242 - Bioethics

Examines some of the major moral issues confronting the nation's health care system. The class will search for solutions to such problems as financing health care for those unable to do so on their own, determining the extent of a patient's right to both refuse and demand certain types of medical treatment, and allocating scarce medical resources such as lifesaving vital organs. The springboard for examining these issues will be the doctor or patient relationship framed by the moral principles of respect for persons and beneficence. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4242, HUMN 5242, SSCI 5242. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5260 - Philosophy of Law

Surveys theoretical positions on the nature of law, with particular emphasis on American law. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5300 - Philosophy of Mind

Consideration of the problems in the philosophy of mind, such as the mind-body problem, the problem of our knowledge of other minds, the compatibility of free will and determinism, and discussion of such concepts as action, intention, motive, desire, enjoyment, memory, imagination, dreaming and self-knowledge. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with ENGL 4308, ENGL 5308, PHIL 4308, WGST 4308, WGST 5308. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5350 - Philosophy of Science

This course examines some of the central philosophical questions concerning the nature of scientific investigation, such as the logical relation of evidence to hypothesis, the objective adjudication of competing hypotheses, the logical function of modeling in empirical inquiry, the criterion for a classificatory system to underwrite induction and explanation, the explanatory relationships between the differing sciences, as well as the theoretical and pragmatic function of scientific law and its relationship to explanation. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5430 - Environmental Ethics

While human industry/technology creates enormous material prosperity, it can result in devastating environmental damage. This course analyzes the moral values, consequences and duties implied in relationships between human beings, animals and ecological systems, while seeking out new and ethical approaches. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 3430, HUMN 5430 and SSCI 5430. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5441 - Philosophical Reasoning Skills

This course provides Philosophy majors and other philosophically interested students with the skills and tools necessary for effectively navigating philosophical discussions. In this course we will cover issues such as validity and soundness, as well as several systems useful for demonstrating validity. The course will in addition address important issues in the philosophy of language, including the very important question of definitions, as well as the use of thought experiments and avoidance of informal fallacies. Finally, since philosophical reasoning increasingly involves knowledge of the methods of scientific reasoning, those skills will also be included in the course. Cross-listed with PHIL 3441. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5480 - Perspectives on Good and Evil

Examines "problem of evil" as formulated in the philosophical tradition. Presents classical formulation of the problem, traditional solutions & classical critiques of each answer. Considers perspectives of various religious orientations, which deal differently with the question of suffering. Restriction: Restricted to students with Graduate standing. Cross-listed with PHIL 4480, RLST 4480/5480. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5500 - Feminist Philosophy

Seminar on key debates & figures in historical & contemporary feminist philosophy. Topics may include: rights, embodiment, gender, sexuality, race, reason, & violence. Figures may include: Wollstonecraft, Stanton, Beauvoir, Judith Butler, and bell hooks. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Crosslisted with PHIL 4500, WGST 4500 & 5500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5600 - Philosophy of Religion

Nature of religion and methods of studying it. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with HUMN 5600, PHIL 4600, RLST 4060, 5060, and SSCI 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5655 - Differing Concepts of God

God, Gods, and Goddesses have been imagined in many different modes, forms, aspects, and guises throughout human history. This course investigates Paleolithic models of God, the Great Goddess of the Neolithic era, the Gods of mythological traditions, Biblical God, the abstract God of the philosophers, the God of the pantheists, the deists, and the God of the mystics. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4650, RLST 4400 and 5400. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5730 - Philosophy and Literature

Considers the philosophical dimensions of literature. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4730, ENGL 4735 and 5735. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5780 - Heidegger

Studies the thought of Martin Heidegger, one of the most important philosophers of the 20th century. Includes texts from both Heidegger's early and later periods, and focuses on his analyses of human subjectivity and being. Prereq: Six credit hours in Western philosophy.

Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5790 - Nietzsche

A close study of Nietzsche's philosophical writings, with attention to his significance for philosophy in the 20th century and beyond. Cross-listed with PHIL 4790. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5800 - Plato

A careful study of Plato's writings, emphasizing the dialogue form, and discussion of Plato's significance for the history of ethics, political theory, psychology, metaphysics and epistemology. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4800. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5810 - Aristotle

Examines Aristotle's systematic philosophy and discusses its contributions to logic, epistemology, physics, psychology, metaphysics, ethics and political theory. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4810. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5812 - Special Topics in Philosophy

Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5833 - Existentialism

Examines one of the most influential movements in recent European thought, beginning with existentialism's 19th century roots, and continuing on to the existentialist philosophers of the 20th century. Figures covered may include Dostoyevsky, Kierkegaard, Nietzsche, Heidegger, Sartre and de Beauvoir. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4833, HUMN 5833 and SSCI 5833. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5840 - Independent Study: PHIL

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHIL 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PHIL 5900 - John Dewey

John Dewey was one of the most important of the American philosophers and public intellectuals of the twentieth century. Topics may include Dewey's philosophical naturalism, pragmatist epistemology, process metaphysics and philosophies of experience, aesthetics, religion, technology and democracy. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4900. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHIL 5920 - Philosophy of Media and Technology

A philosophical examination of interrelationships between contemporary media, technology, and their impacts upon character of contemporary life and values. Topics may include ethics, epistemology, democracy, advertising, media literacy and criticism. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate students in the Bachelors to Masters program (PHIL-BA-BMA). Cross-listed with PHIL 4920, HUMN 5920, SSCI 5920. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Physics

PHYS 1052 - General Astronomy I

The history of astronomy is studied from early civilizations to the present. The basic motions of the earth, moon, sun, and planets are discussed both qualitatively and quantitatively, using elementary principles of physics. Properties of our solar system are discussed in detail, including results from unmanned space probes. Note: An additional 30 hours of laboratory work (at times to be arranged), plus appropriate report preparation time, are required to complete laboratory component of the course. Note: High school algebra or equivalent are strongly recommended preparation for this course. Term offered: spring, fall. Max hours: 4

Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1 **Semester Hours:** 4 to 4

PHYS 1100 - Foundations of Physics

One-semester non-lab survey course especially designed for non-science majors. Acquaints students with some of the major principles and methods of physics. Includes applications of physics to everyday life and some discussion of the historical development of physics. Note: this course assumes that students have a good working knowledge of elementary algebra. Term offered: spring, summer, fall. Max Hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2 **Semester Hours:** 4 to 4

PHYS 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Offered irregularly. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 1840 - Independent Study: PHYS

Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 2010 - College Physics I

This is an algebra based physics course covering mechanics, heat and sound. Note: College algebra and trigonometry are strongly recommended preparation for optimal student success. Term offered: spring, summer, fall. Max Hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 4 to 4

PHYS 2020 - College Physics II

This is an algebra based physics course covering electricity, magnetism, light and modern physics. Prerequisite: PHYS 2010 or PHYS 2311 with a C- or higher. Term offered: spring, summer, fall. Max Hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2. **Semester Hours:** 4 to 4

PHYS 2030 - College Physics Lab I

This is an algebra-based physics lab covering subjects studied in PHYS 2010. Term offered: spring, summer, fall. Max Hours: 1 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 1 to 1

PHYS 2040 - College Physics Lab II

This is an algebra-based physics lab covering subjects studied in PHYS 2020. Prerequisite: PHYS 2030 or PHYS 2321 with a C- or higher. Term offered: spring, summer, fall. Max Hours: 1 Credit. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC1. **Semester Hours:** 1 to 1

PHYS 2311 - General Physics I: Calculus-Based

This is a calculus based physics course covering vector displacement, uniform and accelerated motion, force, momentum, energy, rotating systems, oscillations, and an introduction to thermodynamics. Emphasis is on basic principles. Prerequisite: MATH 1401 with a C- or higher. Term offered: spring, summer, fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 2321 - General Physics Lab I

This is a calculus-based physics lab covering subjects studied in PHYS 2311. Term offered: spring, summer, fall. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 2331 - General Physics II: Calculus-Based

This is a calculus based physics course covering electrostatics, magnetic fields, electromagnetic waves (including light), and optics. Prerequisite: PHYS 2311 and MATH 2411 with a C- or higher. Term offered: spring, summer, fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 2341 - General Physics Lab II

This is a calculus-based physics lab covering subjects studied in PHYS 2331. Prerequisite: PHYS 2030, PHYS 2321 or PHYS 2351 with a C- or higher. Term offered: spring, summer, fall. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 2351 - Applied Physics Lab I

Introduces physics majors to several ways that fundamental concepts in mechanics intersect with useful technologies, resulting in documented technical competencies useful in research and industry. Co-req: PHYS 2311. Restriction: Restricted to PHYS majors, minors, or instructor's permission. Term offered: spring, fall. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 2361 - Applied Physics Lab II

Introduces physics majors to several ways that fundamental concepts in electrodynamics and optics intersect with useful technologies, resulting in documented technical competencies useful in research and industry. Prereq: PHYS 2351. Co-req: PHYS 2331. Restriction: Restricted to PHYS majors, minors, or instructor's permission. Term offered: spring, fall. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 2711 - Vibrations and Waves

Introduces vibrations and waves associated with physical phenomena. Analytic and numerical methods in physical contexts. Topics include harmonic oscillators, resonance, coupled oscillators, nonlinear oscillators, waves in elastic media, sound waves, pulses and dispersion. Prerequisite: PHYS 2331 and MATH 2411 with a C- or higher. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 2811 - Modern Physics I

Presents a study of the events and discoveries that occurred during the latter part of the 19th and the first part of the 20th centuries which led to the discovery of quantum mechanics; namely, special relativity, particle nature of radiation, wave properties of particles, models of the atom, and the introduction of quantum mechanics. Prereq: PHYS 2331 and MATH 2411 with a C- or higher. Term offered: spring, fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 2840 - Independent Study: PHYS

Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: 15 hours of 2.75 GPA. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PHYS 3011 - Modern Physics II

Quantum physics used for an understanding of energy levels and configuration of hydrogen atoms, strength of molecular bonds, atomic and molecular spectroscopy, solid state physics, band theory, nuclear and subatomic physics. Also includes quantum statistics, general relativity and cosmology. Note: Students will not earn credit for this course if they have already earned credit for PHYS 2821. Prereq: PHYS 2811 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3040 - Modern Cosmology

Designed for non-majors, covering the large-scale structure of the universe. Topics covered are gravitational concepts, neutron stars, pulsars, black holes, big bang universe and cosmological tests. Prereq: PHYS 2010 with a C- or higher. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3050 - General Astronomy II

Evolution of our sun and other stars is studied, as well as the methods used to gain the information. Discussion includes objects such as neutron stars, novae and supernovae, and black holes. Large-scale structures, including clusters and galaxies, are studied. Prereq: PHYS 1052 or PHYS 2010 or PHYS 2311. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3070 - Physical Cosmology

Designed for science and engineering maj, stud. in quantitative fields/ w req math skills interested in physical universe. Covers large-scale structure of universe & its evolution from birth well into future. Gravitational concepts, neutron stars, black holes, big bang univ, cosmological tests, dark matter & energy. Problem solving emphasized. Prereq: PHYS 1052 or PHYS 2010 or PHYS 2311 or permission. Note: This course assumes that students have completed PHYS 2010 or PHYS 2311 prior to taking this course. Note: Routine knowledge of algebra, geometry and trigonometry is assumed. Knowledge of trig and calculus also useful. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3082 - Energy and the Environment

For students of various backgrounds who wish to increase their understanding of the environmental and technical issues of supplying the energy demands of our society. Alternative energy sources and conservation are explored as solutions to promote sustainable society. Note: One college-level science course and MATH 1110 or equivalent are strongly recommended as preparation for optimal student success. Cross-listed with ENVS 3082. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3120 - Methods of Mathematical Physics

Typically covers calculus of variations, special functions, partial differential equations, integral transforms, linear vector spaces, and tensor analysis. Pre: MATH 2421 and either MATH 3195 or MATH 3191 and MATH 3200 with a C- or higher. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3151 - Biophysics Outlook I

Designed as a companion to General Biology I (but can take stand-alone), this course explores how biophysics concepts and experimental methods add to the knowledge of life's processes at the molecular and cellular level. Note: PHYS 2010 and 2020 strongly recommended for optimal student success. Term offered: fall. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 3161 - Biophysics Outlook II

Designed as a companion to General Biology I (but can take stand-alone), this course explores how biophysics concepts and experimental methods contribute to the understanding of the structure and function of plants, animals & ecological systems. Note: PHYS 2010 and PHYS 2020 strongly recommended for optimal student success. Term offered: spring. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 3211 - Analytical Mechanics

Topics include the Lagrange and Hamiltonian formulations, the two-body problem, rigid body motion, and small oscillations. Pre-req: PHYS 2711, MATH 2421 and either MATH 3195 or MATH 3191 and MATH 3200 with a C-or higher. Co-req PHYS 3120. Term offered: fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 3251 - Biophysics of the Body

Fundamental ideas of anatomy, physiology, and biomechanics from the viewpoint of physics. Biological topics covered include: skeletal systems, muscular systems, circulatory systems, and human motion. Analytical mechanics topics include: Newtonian mechanics, harmonic motion, energy conservation, and introductory fluid dynamics. Prereq: PHYS 2711, 3161, MATH 2421 and 3195 or equivalent or permission of instructor. Term offered: infrequent. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 3252 - Biophysics of the Body NM

Fundamental ideas of anatomy, physiology, and biomechanics from the viewpoint of physics. Biological topics covered include: skeletal systems, muscular systems, circulatory systems, and human motion. Analytical mechanics topics include: newtonian mechanics, harmonic motion, energy conservation, and introductory fluid dynamics. Prereq: PHYS 2010 and PHYS 2020. Term offered: infrequently. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 3411 - Thermal Physics

Covers the basic concepts of the three related disciplines of thermodynamics, statistical mechanics, and kinetic theory. Prereq: PHYS 2331, PHYS 2811 and MATH 2421 with a C- or higher; Prereq or Coreq: MATH 3195 or MATH 3191 and MATH 3200 with a C- or higher if completed prior to PHYS 3411. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3451 - Biophysics of the Cell

Fundamentals of cellular biology from the viewpoint of physics. Biological topics covered include: the central dogma of molecular biology, cellular signaling, genetic regulation, molecular crowding, and ion channels. Statistical and thermal physics topics include: statistics, probability, thermodynamics, heat, and entropy. Prereq: PHYS 2811, 3151 and MATH 2421 or

permission of instructor. Coreq: MATH 3195. Term offered: on demand. Max Hours: 4 Credits.
Semester Hours: 4 to 4

PHYS 3452 - Biophysics of the Cell NM

Fundamentals of cellular biology from the viewpoint of physics. Biological topics covered include: the central dogma of molecular biology, cellular signaling, genetic regulation, molecular crowding, and ion channels. Statistical and thermal physics topics include: statistics, probability, thermodynamics, heat, and entropy. Prereq: PHYS 2020, 2040 and 3151 or permission of instructor. Term offered: infrequent. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 3620 - Sound and Music

Considers the basic nature of sound waves, the ear and hearing, and musical instruments. Although this course is mainly descriptive, some high school algebra will be used. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 3711 - Junior Laboratory I

Advanced laboratory in classical and modern physics. Prereq: PHYS 2811 with a C- or higher. Term offered: spring, fall. Max Hours: 2 Credits. **Semester Hours:** 2 to 2

PHYS 3721 - Junior Laboratory II

Advanced laboratory in classical and modern physics. Prereq: PHYS 3711 with a C- or higher. Term offered: spring, fall. Max Hours: 2 Credits. **Semester Hours:** 2 to 2

PHYS 3811 - Quantum Mechanics

A course in which both wave and matrix mechanics are developed and applied to selected problems in atomic physics. Prereq: PHYS 2811 and 3211 with a C- or higher. Term offered: spring. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 3840 - Independent Study: PHYS

Note: Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PHYS 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher and

at least a 2.75 cumulative GPA. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PHYS 4251 - Physical Fluid Dynamics

Fundamental concepts and methods in fluid dynamics are developed through basic laws, the Navier-Stokes equation, viscous fluid flow, dimensional analysis, vorticity, boundary layers, linear stability and turbulent flow. Cross-listed with PHYS 5251. Prereq: Restricted to students who have completed PHYS 2311, PHYS 2331 and PHYS 3120 with a C- or higher or with instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4331 - Principles of Electricity and Magnetism

Elements of mathematical theory of electricity and magnetism, including electrostatics, magnetostatics, polarized media, direct and alternating current theory, and introduction to electromagnetic fields and waves. Prereq: PHYS 2331 and 3120 with a C- or higher. Term offered: fall. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 4351 - Bioelectromagnetism

The fundamental theory of electric and magnetic fields is developed and applied to problems of biology and medicine. Examples in medical diagnostics and treatment are built upon rigorous application of Maxwell's equations and constitutive models of electromagnetic properties of biomaterials. Prereq: PHYS 2331 and 3120 or permission of instructor. Cross-listed with PHYS 5351. Term offered: spring infrequently. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 4352 - Bioelectromagnetism NM

This course is the non-majors' companion to PHYS 4351/5351 (taught simultaneously) using modeling approaches accessible to the general science student. Prereq: PHYS 2010, 2020 and MATH 1401 or permission of instructor. Cross-listed with PHYS 5352. Term offered: spring. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 4400 - Scientific Instrumentation

Conceptual and practical knowledge needed to design scientific instruments, develop technical products, and use special laboratory procedures to research. Topics include materials, mechanisms, electronics, and optics. Note: Two semesters of 2000-level introductory physics strongly recommended for optimal student success. Cross-listed with PHYS 5400. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 4401 - Special Topics

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 4440 - Electricity and Magnetism II

This course is a continuation of material presented in Electricity and Magnetism (PHYS 4331) and concentrates on electromagnetic radiation. Topics include the propagation of electromagnetic waves, interference and refraction, wave guides, the emission of electromagnetic radiation from antennas, and electromagnetic fields due to accelerating point charges. An introduction to relativistic electromagnetism is also included. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4510 - Optics

Presents a contemporary treatment of selected topics in optics, such as matrix methods in geometrical optics, the Fourier analysis approach to physical optics, and interaction of light with matter. Prereq: PHYS 2331, 2811 and 3120 with a C- or higher. Term offered: spring odd years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4550 - Astrophysics

Covers stellar astrophysics, solar physics, star formations, stellar evolution, processes in the interstellar medium, galactic dynamics and evolution, formation of galaxies and cosmology. Note: MATH 3195; PHYS 2821 and 3050 are strongly recommended preparation for optimal student success. Term offered: spring odd years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4611 - Computational Physics

Designed to provide an understanding of the role of the computer in modern theoretical physics by studying the simulation of physical phenomena in various fields of physics. Prerequisite: PHYS 3120. Note: Students will not earn credit for PHYS 4611, if they have already earned credit for PHYS 4610. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4620 - Computational Physics II

Assigns the student to an individual, advanced-level project modeling a physical phenomenon on the computer. Prereq: PHYS 4610 with a C- or higher. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PHYS 4650 - Solid State Physics

Covers the basic thermal and electrical properties of solids which are explained in terms of the Brillouin zone structures of phonons and electrons. Prereq: PHYS 3411 and PHYS 3811 with a C- or higher. Term offered: fall odd years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4711 - Senior Laboratory I

Individual project laboratory with emphasis on modern methods of physical experimentation.

Prereq: PHYS 3721 with a C- or higher. Term offered: spring, fall. Max Hours: 2 Credits.

Semester Hours: 2 to 2

PHYS 4721 - Senior Laboratory II

Individual project laboratory with emphasis on modern methods of physical experimentation.

Prereq: PHYS 4711 with a C- or higher. Term offered: spring, fall. Max Hours: 2 Credits.

Semester Hours: 2 to 2

PHYS 4810 - Atomic and Molecular Structure

A course in which quantum mechanical methods are applied to problems in atomic and molecular physics, such as the one-electron atom, atomic and molecular spectra, and particle scattering. Prereq: PHYS 3811 with a C- or higher. Term offered: fall even years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4820 - Subatomic Physics

Introductory treatment of the various concepts and models used to describe nuclear and high energy particle phenomena. Prereq: PHYS 2811 with a C- or higher. Term offered: spring even years. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4840 - Independent Study: PHYS

Note: Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PHYS 4850 - Physics for Design and Innovation I

A service-learning project using fundamental physical principles to design a prototype scientific instrument, technical device, or technical process for a real-world client. Includes instruction on project management, intellectual property, and market analysis. Cross-listed with PHYS 5850. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 4852 - Physics for Design and Innovation II

A capstone project using fundamental physical principles to prototype a scientific instrument, technical device or technical process. The focus is on the student's own product idea. Includes online guided readings on the wider context of product development. Students should consult with instructor on necessary physics and mathematics preparation for the project. Prereq: PHYS

4850 with a grade of C- or higher. Cross-listed with PHYS 5852. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Term offered: spring, summer, fall. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PHYS 4920 - Advanced Undergraduate Seminar

Studies a focused topic such as: size and age of the universe, critical phenomena, non-linear optics, energy, fiber-optic communications, among others. Students research these topics and give a seminar outlining their findings. Prereq: PHYS 2811 with a C- or higher. Term offered: infrequent. Max Hours: 1 Credit. **Semester Hours:** 1 to 1

PHYS 4939 - Internship

Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PHYS 4950 - General Relativity

This course will introduce classical general relativity, a generalized theory of gravity that reduces to Newtonian gravity in the weak gravity limit. This course covers the basic principles of Einstein's general theory of relativity, differential geometry, experimental tests of general relativity, black holes, and cosmology. Since this course will emphasize both analytic calculation and physical understanding of classical gravity and is a 3 credit hour senior-level physics course, it can be very challenging, especially if taken with other physics courses. A good rule of thumb for a college course of this type is to expect to spend a minimum of 2 to 4 times the amount of time outside of class as you do in class. For this course, that means a minimum of 6 to 12 hours per week outside of class. Term offered: infrequent. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PHYS 4980 - Advanced Physics Topics

Covers a particular topic, as announced in the 'Schedule Planner.' Note: May be taken more than once for credit in different topics. Prereq: PHYS 2811 with a C- or higher. Repeatable. Term offered: spring, fall. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PHYS 5351 - Bioelectromagnetism

The fundamental theory of electric and magnetic fields is developed and applied to problems in biology and medicine. Examples in medical diagnostics and treatment are built upon rigorous application of Maxwell's equations and constitutive models of electromagnetic properties of biomaterials. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Cross-listed with PHYS 4351. Term offered: infrequent. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 5352 - Bioelectromagnetism NM

This course is the non-majors' companion to PHYS 4351/5351 (taught simultaneously) using modeling approaches accessible to the general science student. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Cross-listed with PHYS 4352. Term offered: infrequent. Max Hours: 4 Credits. **Semester Hours:** 4 to 4

PHYS 5400 - Scientific Instrumentation

Conceptual and practical knowledge needed to design scientific instruments, develop technical products, and use special laboratory procedures to research. Topics include materials, mechanisms, electronics, and optics. Cross-listed with PHYS 4400. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 5401 - Special Topics

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 5840 - Independent Study: PHYS

Note: Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PHYS 5850 - Physics for Design and Innovation I

A service-learning project using fundamental physical principles to design a prototype scientific instrument, technical device, or technical process for a real-world client. Includes instruction on project management, intellectual property, and market analysis. Cross-listed with PHYS 4850. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 5852 - Physics for Design and Innovation II

A capstone project using fundamental physical principles to prototype a scientific instrument, technical device or technical process. The focus is on the student's own product idea. Includes online guided readings on the wider context of product development. Students should consult with instructor on necessary physics and mathematics preparation for the project. Prereq: PHYS 4850 or 5850. Cross-listed with PHYS 5852. Repeatable. Term offered: infrequent. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PHYS 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PHYS 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Note: Students must check with a faculty member before taking this course. Repeatable. Term offered: spring, summer, fall infrequently. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

PHYS 5950 - Master's Thesis

Note: Students must check with a faculty member before taking this course. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

PHYS 5960 - Master's Project

Note: Students must check with a faculty member before taking this course. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

PHYS 5980 - Advanced Physics Topics

Covers a particular topic as announced in the 'Schedule Planner.' Note: May be taken more than once for credit in different topics. Note: this course assumes that students have completed PHYS 2811 or equivalent. Prereq: Graduate standing. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PHYS 6840 - Independent Study: PHYS

Note: Students must check with a faculty member before taking this course. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

Political Science

PSCI 1001 - Introduction to Political Science: The Quest for Freedom and Justice

Introduces the study of politics, its human importance, and its relationship to social institutions. Analysis of the relationship between individual political behavior and characteristics of the political system. Development of key concepts such as power, legitimacy, authority, political socialization, and revolution. Note: Required of all PSCI majors. Term offered: fall, spring,

summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1 **Semester Hours:** 3 to 3

PSCI 1101 - American Political System

General introduction to the American political system with emphasis upon citizen involvement, the relationships among the various levels and branches of government, formal and informal institutions, processes, and behavior. Note: Required of all PSCI majors. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1 **Semester Hours:** 3 to 3

PSCI 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 2001 - Topics in Political Science

Covers different areas of politics. Note: May be taken more than once for credit when topics vary. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

PSCI 2006 - Global Political Issues

Studies global political issues, exploring the broad forces at play in the world: international economics, national interests, military power, nationalism, ethnicity, the environment and human rights. Discussion of world events and underlying global issues, incorporating analytical tools used by political scientists. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 2011 - Logic of Political Inquiry

This course builds critical thinking techniques, logical habits of mind, and research skills necessary for political study. Includes argumentation basics, logical fallacies, evaluating evidence, understanding statistics, effective writing, and internet research. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 2365 - Politics of Climate Change

This course shows how Political Science addresses today's most severe threat to our planet. It analyzes how societies try to mitigate and adapt to climate change at various governance levels. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 2410 - Political Science through Science Fiction

Explore political science concepts by analyzing works of science fiction. Course examines utopian and dystopian communities, imagined futures, and political theorizing in both classic and unusual works of fiction. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 2840 - Independent Study

An opportunity for lower division students who demonstrate academic potential to pursue the study of some subject of interest in greater detail, with supervision from a faculty member in the department. Subjects chosen and arrangements for assignments to be made between student and faculty. Prereq: One semester of course work at Downtown Denver Campus. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: 15 hours of 2.75 GPA. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 3000 - Topics: Conference Participation

Max hours: 1 Credit. **Semester Hours:** 1 to 1

PSCI 3002 - Topics in Political Science

Covers different areas of politics. Note: May be taken more than once for credit when topics vary. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PSCI 3011 - Research Methods

Design of political/social research, both qualitative and quantitative. Applications of statistical techniques and procedures to social and political phenomena. Use of computer and the Internet. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3022 - Political Systems of the World

The class focuses on the analyses of various political systems around the world. Students will look at democracies and dictatorships, industrialized countries and developing countries. Though a structured comparison, students will assess and test key theories in Political Science. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3034 - Race, Gender, Law and Public Policy

Historical overview of race and gender relations in the U.S. and an examination of the treatment of issues of race and gender in the judicial system and public policy. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3035 - Political Movements: Race and Gender

Examines the emergence, growth, and decline of social movements for race and gender equality. Discussion of political issues of race and gender in the 1990s. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3042 - Introduction to International Relations

Basic background and theories of international relations with focus on the interaction between nation states, international organizations, regimes and transnational movements. Themes examined include foreign policy conduct, international security and political economy, human rights and environmental management. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3050 - Islamophobia

Islamophobia depicts Islam and its followers as threats to civilization, human rights and progress. Course examines historical and current Islamophobia, including impacts on international relations and on domestic politics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3064 - Power and Empowerment in the United States

Introduces U.S. political economy. Analysis of the political and economic forces and structures that shape the opportunities available to the American people. Among topics included are reciprocal impacts of government and business, the federal budget, taxation, lobbying and special interests, community organizing, and elections. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3214 - Federal Law and American Indians

Examines the legal and political history of the U.S. in relation to American Indian Nations. Focuses on specific laws and Supreme Court cases in federal Indian law, with analysis of U.S. policy. There will be some comparison with Indian policies of other countries. Cross-listed with ETST 3216. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3347 - Film and Politics

Presents historical and contemporary films to introduce students to critical evaluation of film as a political medium. Whether designed as propaganda or entertainment, films shape and reflect critical issues in our political and social culture. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3840 - Independent Study: PSCI

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PSCI 3914 - The Urban Citizen

Course emphasis is community, the individual, and the good life. Experiential learning and classroom discussions about capacities of urban citizens. Focus is on social, political, and economic resources that individuals command, issues of equality and inequality, and possibilities of constructive change. Prereq: A willingness to spend a semester working and studying together as a team in both the classroom and the community. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 3939 - Internship

Designed experiences involving application of political concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing or higher. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

PSCI 4002 - Topics in Political Science

Specialized areas of politics. Note: May be taken more than once for credit when topics vary. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

PSCI 4009 - Politics of the Budgetary Process

Develops each student's understanding of budgeting and financial management in the public and nonprofit sectors. An overview of public sector and nonprofit fiscal management is provided, along with thorough exploration of the political influences that affect financial decision-making. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4011 - GIS in Political Science

Computer lab course developing methodological skills in Geographic Information Systems (GIS) in political contexts. Geospatial computerized mapping skills are important in political fields such as urban planning, electoral analysis, environmental justice, demographics, public health,

and criminal justice. Designed for beginners. Cross-listed with PSCI 5011. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4014 - Media and Politics

Explores the impact of the news media on the American political system, including public policy and citizen participation, and addresses trends in news coverage and media ownership, and their impact on public opinion. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4024 - State Politics: Focus Colorado

Examination of American state politics, with an emphasis on Colorado. Course examines the special role of state governments in the American federal system. Focus on dominant current issues facing Colorado state government. Term offered: fall, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4025 - Local Governance and Globalization

Introduces international political economy, consequences of globalization for localities, interplay between wealth and power among nations, multinational corporations, NGOs and the UN, and impact of their actions on local governments. Topics include development, aid, trade, outsourcing, eco-sustainability and global equity. Cross-listed with PSCI 5025. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4034 - Political Parties and Pressure Groups

Democrats, Republicans, third parties, and pressure groups in the United States. Analysis of pressure politics and political behavior. Impact of parties and pressure groups on the public good. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4044 - The Presidency

An overview of the historical, constitutional, and functional aspects of the presidency. Focuses on the powers and vulnerabilities of the presidency and on the style and politics of the current president. Cross-listed with PSCI 5044. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4057 - Religion and Politics

Exploration of: (1) theoretical perspectives on the relationship between religion and politics; (2) causes of and justifications for the historical development of the Western separation of "church and state;" (3) contemporary responses to and analyses of this separation; and (4) several current debates about public policy in America that reveal tensions between these two spheres. Cross-listed with PSCI 5057 and RLST 4500, 5500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4074 - Urban Politics

The crisis and the promise of U.S. cities. Nature and roots of critical urban problems. Citizen involvement in urban decision making. Government as problem and as solution. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4075 - Gentrification and Social Equity

Study causes and consequences of urban gentrification, and explore strategies of grassroots resistance and social equity solutions that are being mobilized to challenge the forces of gentrification. Contrast common celebrations of the waves of capital reinvestment that are fueling urban revitalization with the frequent claim of many low-income neighborhoods: "Gentrification is Class War!" Cross-listed with PSCI 5075. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4084 - Local Government and Administration

Policy and administrative challenges faced by local government in the 21st century. Emphasis on cities under federalism, alternative forms of city governance, and new challenges from increasingly diverse constituents. Issues of poverty, public safety, health, transportation, environment, corruption, and accountability. Cross-listed with PSCI 5084. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4085 - Comparative Governance: Environment and Society

Focuses on how public & private actors at various levels of governance address pressing social & environmental issues such as aging societies, drug abuse, air pollution & global warming. Students will learn to analyze the dynamics of conflict & cooperation, using main concepts and theories of governance literature. Cross-list PSCI 5085. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4094 - Seminar: American Politics

Foundations of U.S. politics and contemporary political issues. Federal/state/community relations. Relationship among the three branches of the Federal government. Colorado controversies arising under the U.S. Constitution. Cross-listed with PSCI 5014. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4105 - Comparative Politics: Europe

An intensive and comparative analysis of the political systems and processes of Europe. Emphasis on political culture and economy; executive-legislative relationships; electoral systems; political parties and interest groups; political conflict and citizen participation; and the impact of social changes on political institutions. Note: This course may count for the

International Studies major or minor. See your INTS advisor for more information. Cross-listed with PSCI 5105. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4115 - Third World Politics

Examines the factors challenging political stability in low income nations and the prospects for democracy and economic development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4124 - Denver Politics

Surveys Denver's dominant political and economic forces and community agendas that compete with the downtown growth machine. Examines urban renewal strategies, gentrification and grass-roots resistance, and the role of officials in shaping Denver's distribution of wealth and life-opportunities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4126 - Introduction to International Political Economy

A short introduction to international economy, including classic readings of international political economy (such as Smith, Ricardo, Marx, Lenin), and more recent work on globalization, applying related theories to the current world economy. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PSCI 4144 - Indigenous Political Systems

Surveys political theory and practice in indigenous societies in the Americas. Examines the impact of indigenous political thought on Euro-American politics, especially the U.S. Constitution, and explores the contemporary impact of indigenous people on current politics. Cross-listed with ETST 4144. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4146 - Indigenous Politics

Surveys the status of the world's native peoples and nations, and the role of law and politics in the future of indigenous peoples in the global arena. Examines questions of human rights, economic development, and international law and politics. Cross-listed with PSCI 5145 and ETST 4146. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism

This course is about Middle Eastern women's subjectivity and various forms of agency. It explores the nexus of domestic, regional and international forces that shapes the lives of Middle Eastern women, in particular in the Algerian, Egyptian, Iranian, Israeli and Palestinian contexts. Far from being silent observers of the contests among these forces, as is often assumed, Middle Eastern women have been active actors in the public arena since the 19th

century colonial encounter and the importation of the modern state to the region using an array of means to make their voices heard. Theirs were often more militant than those of their countrymen. The course is divided into two parts. The first part provides an overview of the theoretical notions discussed such as Orientalism, agency, colonialism and post-colonialism. Related to this theoretical section is a historical overview that is necessary to the understanding of the contemporary conditions of Middle Eastern women and the continuities and changes between past and present. The second part covers pressing topics in the lives of Middle Eastern women in the post-independence era such as the rise of Political Islam, the global trend of democratization, war and occupation. The emphasis in this section is on women as active participants in the debates surrounding these issues, rather than as objects of them. The readings assigned include both texts written by scholars from the region and by others from without. They provide analyses of the contexts within which Middle Eastern women's struggles take place. In addition, students will be exposed to materials produced by Middle Eastern women activists that express their own opinions and views in order to avoid misrepresentation and to reflect the diversity among them. Cross-listed with WGST 4150. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4155 - Political Systems of the Middle East and North Africa

Comparative analysis of political processes in the Middle East and North Africa. Islamic political theory and its contemporary manifestations. The role of nationalism and the quest for modernity in the political development of this region. Parties and programmed modernization in transitional politics. Violent and nonviolent change. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4156 - The Arab-Israeli Peace Process

Critical analysis of Arab and Israeli perspectives on the on-going peace negotiations in the Middle East. Historical background and religious-cultural aspects of current problems. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with ETST 4156. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4165 - Islamic Politics and Culture

Comprehensive, in-depth study of Islam and Muslims. Islam is viewed as a "way of life" with social, economic, psychological, spiritual, and political implications. Among topics to be examined are: women in Islam, Jihad, fundamentalism, Islamic movements, Islam and the West. Cross-listed with RLST 3100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4176 - Gandhi's Legacy: Non-Violent Resistance Today

This course assesses the legacy of Gandhi's nonviolent struggle against systemic oppression. We examine Gandhi's ideas and practices, consider Western images of political violence, and then

focus on questions and possible answers raised by empirical studies. Cross-listed with PSCI 5176. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4185 - Corruption in the U.S. and Abroad

Explores the causes and consequences of administrative and political corruption in developed and developing countries, and evaluates various anti-corruption strategies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4186 - East Asia in World Affairs

Political and economic systems and foreign policies of East Asian powers, such as China, Japan, Taiwan, South Korea and Hong Kong; interactions of these powers and their collective economic and political roles in world affairs; major theoretical approaches to the study of East Asian powers. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4195 - Political Systems of Sub-Saharan Africa

Analysis of major types of political systems in sub-Saharan Africa and intensive case studies of selected countries exemplifying each type. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4206 - Social Movements, Democracy and Global Politics

Examines global social movements as new political actors within world politics; how theoretical perspectives in international relations and democracy address these actors; and the forms of interaction among these actors, states, and global governance institutions. Cross-listed with PSCI 5206. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4207 - Theories of Social and Political Change

Investigation of social and political power with respect to possibilities of change. Location of present barriers to change within ongoing histories of marginalization, exclusion, and violence. Critical examination of political inclusion and recognition. Imaginations and pursuits of just, equitable, and/or Utopian worlds. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4215 - Women's Rights, Human Rights: Global Perspectives

Explores the global feminist movement's campaign to "engender" human rights. Examination of women's human-rights issues and the critique of this campaign as representing cultural imperialism. Note: this course assumes that students have completed at least two political science courses. Cross-listed with WGST 4215. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4216 - International Politics: Human Rights

The system of nation states, concepts of national interest, goals of foreign policies, conduct of diplomacy, and the bearing of these elements on the problem of human rights. Presentation and evaluation of the solutions that have been offered for the securing of justice and the maintenance of peace. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4224 - Dictatorships in 21st Century

Analyzes and classifies political systems of non-democratic regimes. Reviews earlier and contemporary theories that explain the origins, survival and death of authoritarian regimes. Discusses the impact of dictatorial rule on domestic developments as well as on international relations. Cross-listed with PSCI 5224. PSCI 3022 recommended for student success. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4225 - Democracy and Democratization

Examines the conditions under which countries turn from authoritarianism towards democracy and become stable democratic regimes. Also examines the impact of foreign and international factors on new democracies. Cross-listed with PSCI 5225. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4226 - The United Nations in World Affairs

Current operation and future potential of the United Nations as a complex actor in world affairs, both expressing conflicting interests of its participants and promoting universal goals, including world peace, human rights, and environmental protection. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4235 - Politics and Markets in Latin America

Explores political economic development in Latin America within the context of the world system. Includes the study of colonization, land tenure, foreign investment, authoritarianism, militarism, social and revolutionary movements, human rights and democratization. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PSCI 4236 - American Foreign Policy

Examines the postwar events, controversies, and most recent challenges in U.S. foreign policy. Analyses of the major sources of U.S. foreign policy, such as ideology, national interests, and national power. Attention to the pattern and process of foreign policy-making. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4237 - American National Security

Examines American national security, utilizing an interdisciplinary analysis of its domestic historical development and its function in the current global context. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4240 - International Security

Examines old and emerging "threats" to national security, and policy responses, from theoretical, historical and geographical perspectives. Explores challenges of ethnic conflict, weapons of mass destruction, environmental and economic security. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4248 - Gender, Globalization and Development

Analyzes the effects of globalization on the gendered processes of international development and strategies to empower women to achieve gender justice across race, class and national divisions. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with PSCI 5245 and WGST 4248/5248. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4265 - Social Justice and Globalization

Examines issues of justice and ethical responsibility in a globalizing world. Do moral obligations of individuals and institutions end at national borders or do they encompass all human beings and extend to the environment and to future generations? Cross-listed with PSCI 5265. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4266 - International Law

Investigates the body of law that regulates relations between nations and provides a framework for solving common problems and disputes between nations. Note: this course is intended for political science majors. Cross-listed with PSCI 5266. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4274 - Conflict Resolution and Public Consent Building

Alternative strategies for resolving or mediating conflicts facing public or nonprofit organizations and for building public consent, with emphasis on personal, interpersonal, organizational, interest-group, cross-cultural, and roots of conflict and bases for consent. Cross-listed with PSCI 5274. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4276 - Conflicts and Rights in International Law

Explores contending interpretations and practices in international law regarding issues such as the legitimacy of humanitarian intervention, efficacy of truth commissions, tensions between truth and justice in cases of genocide and war crimes, and legal changes needed to devise viable rules. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with PSCI 5276. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4280 - The Politics of War Law

Examines international laws governing armed conflict, including human rights law. Investigates the reasons for instances of compliance and violation within this international legal regime regulating war and conflict. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4286 - International Relations: War or Peace?

Presents alternative theoretical frameworks for the explanation of war and peace. Investigations of the efficacy of international law, just-war norms and the UN in preventing or containing conflict. Cross-listed with PSCI 5286. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4326 - Advanced International Political Economy: Globalization

Engages the current debate about globalization. Conceptualizes globalization and evaluates the pros and cons of global trade and finance for developed and developing countries. Develops a model for a sustainable and just global economy. Prereq: PSCI 4126. Cross-listed with PSCI 5326. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PSCI 4330 - U.S. Health Policy

The role of public health policy as legislated at the federal and state levels. Individual health policy (e.g. social security and managed care) and public health policy (e.g. mandatory immunizations, HIV testing, air and water quality). Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4354 - Environmental Politics

Political, legal, and economic forces in environmental law and policy. Special emphasis on air and water pollution and on threats to public and agricultural land. Environmental groups and their opponents. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4365 - Global Ecological Crises

Overview of global ecological problems such as climate change, transboundary pollutions, and loss of bio-diversity in an attempt to understand the political, economic, and cultural forces

behind these problems and the status of legal and policy initiatives to address them. Cross-listed with PSCI 5365. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4407 - Early Political Thought

Main currents of political thought in their historical setting from Plato to Machiavelli, with a critical evaluation of those elements of continuing worth. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4414 - Non-Profits and Social Change

Explores role of non-profits in catalyzing social change. What are obstacles and opportunities to leveraging social change through nonprofits? What factors shape non-profits to be either transformational or systemstabilizing forces? Cross-listed with PSCI 5514. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4417 - Modern Political Thought

Theories of modernity and its lasting social and political consequences. Topics may include liberalism and neoliberalism, capitalism and Marxism, humanism and posthumanism, racial slavery, colonialism, and ecology. PSCI 4407 is not a prerequisite for PSCI 4417. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4427 - Law, Politics and Justice

Analysis of the relationship of politics, law, and justice, particularly the degree to which moral norms and political concerns should and do influence legal standards and their perceived legitimacy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4444 - Contemporary Culture and Politics in America

Intellectual and experiential investigation of the interplay of culture and politics in American society, as manifested in literature, social and political philosophy, psychological writings and trends, radical movements, popular culture, and daily behavior. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4446 - Advanced Indigenous Peoples' Politics

Builds upon the theoretical and applied foundations of PSCI 4146. Intensive study of international legal and political developments are examined, particularly in the United Nations and the Organization of American States systems. Prereq: PSCI 4144 or PSCI 4146. Cross-listed with PSCI 5446. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4457 - American Political Thought

Critical examination of American political life at the intersections of social categories such as race, class, gender, sexuality, disability, and Indigeneity. Exploration of key and marginal thinkers through a variety of texts and genres. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4477 - Constitutional Law I

Nature and scope of the following American constitutional principles as developed by the U.S. Supreme Court: federalism, jurisdiction of the federal courts, separation of powers, the taxing power, and the commerce power. Case method. Term offered: fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 4487 - Constitutional Law II

Continuation of PSCI 4477, with emphasis on the war powers of the president, citizenship, the Bill of Rights, and the Civil War amendments. (Case method.) Note: PSCI 4477 is not a prerequisite for PSCI 4487. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4494 - Judicial Politics

Examines principal actors in the legal system: police, lawyers, judges, citizens. About half of this course is devoted to the study of judicial behavior, especially at the Supreme Court level. Political and personal influences on judicial behavior. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4505 - Political System of Russia and Its Neighbors

The class focuses on the political values, institutions and actors of Russia and its neighboring countries, covering the political developments since the late 20th century. The relations between Russia, the European Union and the United States are also analyzed. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4535 - Labor and Working Class Politics

Explores the status of the labor movement both in the U.S. and internationally, as well as the political, philosophical, and social implications of socioeconomic class status and identity. Cross-listed with PSCI 5535. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4545 - Immigration Politics

Introduces students to central theories of migration and a survey of immigration law and policy in the 20th century. Highlights experiences of Mexican and Latin American immigrants and related topics, including: U.S.-Mexican foreign relations, bilingual education, undocumented

immigration and globalization. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with PSCI 5545. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4554 - Chicano and Latino Politics

Analysis of the social, cultural, and economic factors that affect political behavior of Latinos. Special attention is paid to the Mexican American cultural heritage and to relations between Mexican Americans and Anglo Americans. Cross-listed with ETST 4558. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4555 - International Women's Resistance

Examines local and international struggles of women to build peace and justice by resisting systems of inequality such as colonialism, racism, patriarchy, globalization, and religious intolerance. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with PSCI 5555, ETST 4555 and WGST 4555/5555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4564 - Gender and Politics

Inter-sectional examination of the personal and political life of gender. Exploration of constructions, performances, and creative reconfiguration of gender through a variety of texts, genres, and media. Cross-listed with WGST 4564. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4605 - Politics and Governments of South Asia

Studies the political systems of Bangladesh, India, Pakistan, Sri Lanka and Nepal. The impact of British rule on the development of political institutions on the subcontinent as well as problems of political development at all levels. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4615 - Politics and Government of China

Political and governmental changes within China, from the 19th century to the present. Primary emphasis on contemporary political systems and sociopolitical problems. China's struggle for independence and economic development. The Chinese revolutions, Maoist communism, and the post-Maoist period. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4645 - Comparative Political Leadership

Comparative study of historical, socio-cultural, and psychological bases of political leadership. Leadership types in peasant societies, empires, and revolutionary movements. Dilemmas of democratic versus authoritarian leadership in modernizing and industrial states. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4726 - Seminar on U.S. and China Relations

Detailed examination of historical context and current issues in U.S./China relations. Emphasis on modern period, with particular attention to changing relations in context of rising power of China. Cross-listed with PSCI 5726. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4736 - The Middle East in World Affairs

Evolution and revolution in the Middle East. The character of nationalism in the area. Analysis of inter-regional and international problems affecting the Middle East, with special emphasis on current Arab-Israeli relations. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4757 - Legal Reasoning and Writing

Introduces the fundamentals of legal reasoning and legal argumentation through intensive class discussion, formal debate and writing. Attention is given to the relationship between case and statutory law and their application in trial and appeals courts in the United States. Note: this course assumes that students have completed ENGL 1020, 2030, and any 3000-level English/writing course, or COMM 3120. Cross-listed with PSCI 5747, COMM 4750, 5750. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4807 - Political Violence

Investigates different types of political violence including genocide, ethnic and religious conflict, revolution, terrorism, war, state repression and others. Introduces theories of individual, collective and institutional violence, applies them to a range of case studies and explores possible solutions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4808 - Strategies of Peacebuilding

The course investigates the theories and strategies of peacebuilding in societies that have endured intrastate conflict and/or massive human rights violations and asks whether peace and justice and democracy can or should work together and how forgiveness and reconciliation might develop. Cross-listed with PSCI 5808. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4827 - Women and the Law

Examines the role of the courts in the development of public policy toward women; how the legal system affects the economic power, family roles, safety and political participation of women. Cross-listed with ETST 4827 and WGST 4827. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4837 - Contemporary Issues in Civil Liberties

Conflicting rights of individuals and groups in several areas of civil liberties, including religious groups, free speech, sexual freedom, racial quotas, and anti-governmental actions and publications. This course includes case law, readings, guest speakers and case discussions. Cross-listed with PSCI 5837. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4840 - Independent Study: PSCI

An opportunity for advanced students with good scholastic records, and with appropriate courses completed, to pursue independently the study of some subject of special interest to them. Subjects chosen and arrangements made to suit the needs of each student. Note: Primarily for seniors. Prereq: 15 semester hours in political science and permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PSCI 4878 - War, Film, and International Law

This course examines interactions of culture, politics, and law by chronologically investigating 20th-century war movies and the ways experiences and norms have shaped and been shaped by cinematic representations. Cross-listed with PSCI 5878. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PSCI 4914 - Community Organizing and Community Development

The theory and practice of community organizing strategies and community development innovations. How can social activists build power at the grassroots to build equitable, sustainable, and healthy communities? Cross-listed with PSCI 5914. Note: Students will not receive credit for this course if they have already earned credit for PSCI 3075. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4934 - CU at the Capitol

Examines current year legislative session of Colorado General Assembly. Study of various elected leaders; Colorado party system; Governor-Assembly relations; citizen and lobbyist influence; corruption and virtue in politics; current affairs. Each student will be placed in a state government internship. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4944 - CU in the City

Investigation of community development strategies through seminar discussions, urban walking tours, and student field placement with a local community based organization, non-profit, or public office engaged in community development work. Cross-listed with PSCI 5944.

Recommended Preparation: PSCI 3075 Community Organizing and Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4960 - Capstone in Political Science

Course facilitates independent student research in Political Science and assists students in developing advanced writing and communication skills. Students will design, execute and present advanced research project. Restriction: Students must have completed 27 credits hours in Political Science (PSCI) with a C- or higher in order to register. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Cross-listed with PSCI 5995. Term offered: summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 5000 - State of the Discipline

Introduces graduate study in political science. Provides an overview of theories and methods in the four fields of American politics, political theory, comparative politics and international relations. Guest lectures by department faculty. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5008 - Graduate Topics in Political Science

Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PSCI 5009 - Politics of the Budgetary Process

Explores budgeting and financial management in the public and nonprofit sectors. An overview of public sector and nonprofit fiscal management is provided, along with thorough exploration of the political influences that affect financial decision-making. Note: Offered as a special topics course in an intensive three-weekend format, which is reflected in the syllabus. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 5011 - GIS in Political Science

Computer lab course developing methodological skills in Geographic Information Systems (GIS) in political contexts. Geospatial computerized mapping skills are important in political fields such as urban planning, electoral analysis, environmental justice, demographics, public health, and criminal justice. Designed for beginners. Cross-listed with PSCI 4011. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Term offered: spring. Max Hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 5014 - Seminar: American Politics

Foundations of U.S. politics and contemporary political issues. Federal/state/community relations. Relationship among the three branches of the Federal government. Colorado controversies arising under the U.S. Constitution. Cross-listed with PSCI 4094. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 5024 - State Politics: Focus on Colorado

Analysis of unique aspects of Colorado government and politics. Political comparison of Colorado with other states. Preparation and discussion of research papers. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Term offered: fall, summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5025 - Local Governance and Globalization

Introduces international political economy, consequences of globalization for localities, interplay between wealth and power among nations, multinational corporations, NGOs and the UN, and impact of their actions on local governments. Topics include development, aid, trade, outsourcing, eco-sustainability and global equity. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA).. Cross-listed with PSCI 4025. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5054 - The Legislative Process

An intensive examination of the structures and interactions through which laws are made in the United States. The major emphasis is the national level, but considerable attention is devoted to state legislatures and local lawmaking bodies. Impact of money and interest groups.

Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits.

Semester Hours: 3 to 3

PSCI 5075 - Gentrification and Social Equity

Study causes and consequences of urban gentrification, and explore strategies of grassroots resistance and social equity solutions that are being mobilized to challenge the forces of gentrification. Contrast common celebrations of the waves of capital reinvestment that are fueling urban revitalization with the frequent claim of many low-income neighborhoods: "Gentrification is Class War!" Cross-listed with PSCI 4075. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5084 - Local Government and Administration

Policy and administrative challenges faced by local government in the 21st Century. Emphasis on cities under federalism, alternative forms of city governance, and new challenges from increasingly diverse constituents. Issues of poverty, public safety, health, transportation, environment, corruption and accountability. Cross-listed with PSCI 4084. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5085 - Comparative Governance: Environment and Society

Focuses on how public & private actors at various levels of governance address pressing social & environmental issues such as aging societies, drug abuse, air pollution & global warming. Students will learn to analyze the dynamics of conflict & cooperation, using main concepts and theories of governance literature. Cross-list PSCI 4085. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5094 - Seminar: Urban Politics

An intensive analysis and research of major aspects of politics and government in metropolitan areas. Impact of corporations and higher levels of government on cities. Opportunities for, and barriers to, citizen participation. Restriction: Restricted to Graduate and Graduate Non-Degree

Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5105 - Comparative Politics: Europe

Examination and writing of research papers on selected topics of industrial democracies, especially those of Europe. Cross-listed with PSCI 4105. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5135 - Seminar: Political Economy of Latin America

Focuses on the political economies and cultures of Latin America. Particular attention is given to the impact of the export-led growth strategy on social and political development. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5145 - Indigenous Politics

Surveys the status of the world's native peoples and nations, and the role of law and politics in the future of indigenous peoples in the global arena. Examines questions of human rights, economic development, and international law and politics. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4146 and ETST 4146. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5176 - Gandhi's Legacy: Non-Violent Resistance Today

This course assesses the legacy of Gandhi's nonviolent struggle against systemic oppression. We examine Gandhi's ideas and practices, consider Western images of political violence, and then focus on questions and possible answers raised by empirical studies. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4176. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5206 - Social Movements, Democracy and Global Politics

Examines global social movements as new political actors within world politics; how theoretical perspectives in international relations and democracy address these actors; and the forms of interaction among these actors, states, and global governance institutions. Cross-listed with PSCI 4206. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5216 - Seminar: International Relations

Introduces contending theories, empirical studies, and research methods in the field. Writing and discussion of comprehensive research papers in the field of international power politics and alternative attempts at controlling conflicts among nations. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5217 - Human Rights in Theory and Practice

Explores the ideas of human rights and the practical efforts to actualize rights in society. Students study the theories of rights and the evolution of rights in history, as well as work with a service organization. Cross-listed with PSCI 4217. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5224 - Dictatorships in 21st Century

Analyzes and classifies political systems of non-democratic regimes. Reviews earlier and contemporary theories that explain the origins, survival and death of authoritarian regimes. Discusses the impact of dictatorial rule on domestic developments as well as on international relations. Cross-listed with PSCI 4224. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5225 - Democracy and Democratization

Examines the conditions under which countries turn from authoritarianism towards democracy and become stable democratic regimes. Also examines the impact of foreign and international factors on new democracies. Cross-listed with PSCI 4225. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5236 - Seminar: American Foreign Policy

Examines selected methodological and substantive problems. Particular emphasis on elements of national decision making, America's adaptation to the changing world, and opportunities for student contributions through research and discussion. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5238 - Seminar: Comparative Foreign Policy

Examination of the effects of leaders, groups, institutions, strategic cultures and external influences on national foreign policy-making processes and comparative analysis of foreign policy making of great and emerging powers. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5245 - Gender, Globalization and Development

Analyzes the effects of globalization on the gendered processes of international development and strategies to empower women to achieve gender justice across race, class and national divisions. Cross-listed with PSCI 4248 and WGST 4248/5248. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5256 - Seminar: National Question and Self-Determination

Designed to provide students with a broad theoretical and empirical understanding of the causes of ethnic conflicts and to assess different strategies of conflict resolution. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5265 - Social Justice And Globalization

Examines issues of justice and ethical responsibility in a globalizing world. Do moral obligations of individuals and institutions end at national borders or do they encompass all human beings and extend to the environment and to future generations? Cross-listed with PSCI 4265. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5266 - International Law

Investigates the body of law that regulates relations between nations and provides a framework for solving common problems and disputes between nations. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4266. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5274 - Conflict Resolution and Public Consent Building

Alternative strategies for resolving or mediating conflicts facing public or nonprofit organizations and for building public consent, with emphasis on personal, interpersonal, organizational, interest-group, cross-cultural, and roots of conflict and bases for consent. Cross-

listed with PSCI 4274. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5276 - Conflicts and Rights in International Law

Explores contending interpretations and practices in international law regarding issues such as the legitimacy of humanitarian intervention, efficacy of truth commissions, tensions between truth and justice in cases of genocide and war crimes, and legal changes needed to devise viable rules. Cross-listed with PSCI 4276. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5286 - International Relations: War or Peace?

Presents alternative theoretical frameworks for the explanation of war and peace. Investigations of the efficacy of international law, just-war norms and the UN in preventing or containing conflict. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4286. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5326 - Advanced International Political Economy: Globalization

Engages the current debate about globalization. Conceptualizes globalization and evaluates the pros and cons of global trade and finance for developed and developing countries. Develops a model for a sustainable and just global economy. Cross-listed with PSCI 4326. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PSCI 5354 - Seminar: Environmental Politics and Policy

Consideration of competing models of the policy process in natural-resources decision making. Focus on selected case studies. Impact of environmental and pro-growth forces on the political process. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5365 - Global Ecological Crises

Overview of global ecological problems such as climate change, transboundary pollutions, and loss of bio-diversity in an attempt to understand the political, economic, and cultural forces behind these problems and the status of legal and policy initiatives to address them. Cross-listed with PSCI 4365. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or

undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5414 - Non-Profits and Social Change

Explores role of non-profits in catalyzing social change. What are obstacles and opportunities to leveraging social change through nonprofits? What factors shape non-profits to be either transformational or systemstabilizing forces? Cross-listed with PSCI 4414. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5424 - The Social Economy and Sustainable Development

Theory and practice of social economy initiatives like worker cooperatives, micro-credit networks, mutual aid associations and the fair trade movement. How do grass-roots activists and legal frameworks affect the direction and possibilities of the solidarity economy? Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5434 - The Cooperative Movement: Politics and Policy

Explores the history, current status, and emerging developments in the cooperative movement, both domestic and global. Topics include the political, organizational, and financial challenges and opportunities facing worker, producer, and consumer cooperatives. Examines how cooperative enterprises have adopted both reformist and revolutionary responses to the capitalist system, and how legal regimes and grassroots movements shape the future of cooperative enterprises. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5446 - Advanced Indigenous Peoples' Politics

Builds upon the theoretical and applied foundations of PSCI 4146. Intensive study of international legal and political developments are examined, particularly in the United Nations and the Organization of American States systems. Note: this course assumes that students have completed PSCI 4144 or 4146 or equivalent. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4446. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5457 - Seminar: American Political Thought

An intensive research in and presentation of competing ideas in the development of American political thought and practice, beginning with those of the Iroquois Confederacy and the founders of the United States Constitution. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5468 - Research Methods in Political Science

Analysis and evaluation of research methods, techniques, and empirical materials in political science application to Internet research. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5477 - The U.S. Constitution: Law and Politics

An intensive analysis of the most recent doctrinal developments in the areas of federal jurisdiction, federalism, separation of powers, commerce, taxing and war powers, civil liberties and civil rights. Note: this course assumes that students have completed PSCI 4477 or 4487 or equivalent. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5535 - Labor and Working Class Politics

Explores the status of the labor movement both in the U.S. and internationally, as well as the political, philosophical, and social implications of socioeconomic class status and identity. Cross-listed with PSCI 4535. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5545 - Immigration Politics

Introduces students to central theories of migration and a survey of immigration law and policy in the 20th century. Highlights experiences of Mexican and Latin American immigrants and related topics, including U.S.-Mexican foreign relations, bilingual education, undocumented immigration and globalization. Cross-listed with PSCI 4545. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5548 - Labor Law and Collective Bargaining

Explores the history, current status, and emerging developments in U.S. labor law. Examines how labor law structures worker organizing and collective bargaining efforts. Focus on labor/management relations in such processes as contract administration, workplace anti-

discrimination efforts, and labor organizing rights. Explore new developments like labor law in relations to social media usage and independent contracting. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5550 - Labor, Trade Unions and the Global Economy

Examines transnational trade unionism amid the global economy, with an emphasis on trade unions in a comparative perspective. How do labor activists and trade unions strive to establish institutions and mechanisms to assert worker rights and power in today's international political-economy? Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5555 - International Women's Resistance

Examines local and international struggles of women to build peace and justice by resisting systems of inequality such as colonialism, racism, patriarchy, globalization, and religious intolerance. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4555, WGST 4555/5555 and ETST 4555. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5610 - Seminar: Middle East Politics

Examines the Middle East regional system and the region's role in world politics. Investigates questions regarding politics in Iran, Iraq, Palestinian-Israeli relations, political Islam, and relations with the United States. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5615 - Seminar: Chinese Development

Discussion of readings about China. Analysis of several of the following: party-government relations, ideology and political behavior, leadership, diplomacy, political and economic development and post-Mao reforms. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5726 - Seminar on U.S. and China Relations

Detailed examination of historical context and current issues in U.S./China relations. Emphasis on modern period, with particular attention to changing relations in context of rising power of

China. Cross-listed with PSCI 4726. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5808 - Strategies of Peacebuilding

The course investigates the theories and strategies of peacebuilding in societies that have endured intrastate conflict and/or massive human rights violations and asks whether peace and justice and democracy can or should work together and how forgiveness and reconciliation might develop. Cross-listed with PSCI 4808. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5837 - Contemporary Issues in Civil Liberties

Conflicting rights of individuals and groups in several areas of civil liberties, including religious groups, free speech, sexual freedom, racial quotas, and anti-governmental actions and publications. This course includes case law, readings, guest speakers and case discussions. Cross-listed with PSCI 4837. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5840 - Independent Study: PSCI

Prereq: Graduate standing or permission of the instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PSCI 5878 - War, Film, & International Law

This course examines interactions of culture, politics, and law by chronologically investigating 20th-century war movies and the ways experiences and norms have shaped and been shaped by cinematic representations. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Cross-listed with PSCI 4878. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Prereq: Graduate standing or permission of the instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PSCI 5914 - Community Organizing and Community Development

The theory and practice of community organizing strategies and community development innovations. How can social activists build power at the grassroots to build equitable, sustainable, and healthy communities? Cross-listed with PSCI 4914. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing or permission of the instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

PSCI 5944 - CU in the City

Investigation of community development strategies through seminar discussions, urban walking tours, and student field placement with a local community based organization, non-profit, or public office engaged in community development work. Cross-listed with PSCI 4944. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (PSCI-BA-BMA or INTS-BA-BMA). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PSCI 5950 - Master's Thesis

Prereq: Graduate standing or permission of the instructor. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

PSCI 5960 - Master's Project

Prereq: Graduate standing or permission of the instructor. Term offered: fall, spring, summer. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Prereq: Graduate standing or permission of the instructor. Cross-listed with PSCI 4995. Term offered: summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PSCI 6840 - Independent Study: PSCI

Prereq: Graduate standing or permission of the instructor. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

Pre-Nursing

PRNU 2939 - Internship

Pre-Health internship offering students an opportunity to obtain hands-on experience in a clinical setting; will not apply to the Biology major. Involves application of technical concepts and skills in supervised allied health environment, such as a hospital or medical clinic. Note: May not be used as an upper-division elective. Prereq: One year of general biology with a grade of 'C' (2.0) or higher, junior standing, and a GPA of 2.75 or higher. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PRNU 3939 - Internship

Pre-Health internship offering students an opportunity to obtain hands-on experience in a clinical setting; will not apply to the Biology major. Involves application of technical concepts and skills in supervised allied health environment, such as a hospital or medical clinic. Note: May not be used as an upper-division elective. Prereq: One year of general biology with a grade of 'C' (2.0) or higher, junior standing, and a GPA of 2.75 or higher. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

Psychology

PSYC 1000 - Introduction to Psychology I

Introduces the scientific study of behavior, including an overview of the biological basis of behavior, sensation or perception, states of consciousness, learning and memory, thinking and language, intelligence, motivation and emotion. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3 **Semester Hours:** 3 to 3

PSYC 1005 - Introduction to Psychology II

Introduces the scientific study of behavior, including an overview of the history of psychology, development, personality, psychological disorders, therapy, health psychology and social behavior. PSYC 1000 is not a prerequisite for this course. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3 **Semester Hours:** 3 to 3

PSYC 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PSYC 2050 - Improving Memory

Applies psychological principles of memory function and process to everyday settings and experiences. Covers topics such as how memory works, principles of memory improvement, and strategies for effective learning. Max hours: 2 Credits. **Semester Hours:** 2 to 2

PSYC 2060 - Psychology Applied to Everyday Life

A primer in psychological principles applied to everyday situations. Covers topics such as learning, stress and health, attraction and love, and personality. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 2090 - Statistics and Research Methods

Introduces statistics and research methods in the field of psychology. Note: Intended for those who plan to major in psychology. Completion of college algebra or equivalent is recommended. Prereq: PSYC 1000 with a C- or higher. Term offered: fall, spring, summer. Max hours: 4 Credits. **Semester Hours:** 4 to 4

PSYC 2205 - Lifespan Developmental Psychology for Health Majors

This course will examine the normative physical, cognitive and soci-emotional changes and milestones that occur through the human lifespan highlighting health-related issues at each stage. Prereq: PSYC 1000 or PSYC 1005 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 2220 - Biological Basis of Behavior

Introduces the biological basis of behavior. This course will feature concepts like neurons, synaptic and hormonal transmission, and physiological set-points. Behavior of simple (invertebrate) and complex organisms (vertebrates) will be related to the activity of specific brain neural networks. Prereq: PSYC 1000 or BIOL 2051 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SC2 **Semester Hours:** 3 to 3

PSYC 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have completed 15 hours of PSYC courses with a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PSYC 2990 - Topics in Psychology

Studies special topics to be selected by the instructor. Note: May be repeated for credit. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PSYC 3050 - Decision Making

This course discusses current research on decision making/behavioral economics, as well as its application to individual well-being and public policy. You will gain insights on how and why people can be irrational in their daily decisions. Max hours: 3 Credits. Cross-listed with PBHL 3050 and ECON 3050. **Semester Hours:** 3 to 3

PSYC 3090 - Research Methods in Psychology

Covers principles of experimental methodology in Psychology. Includes active participation in data collection and interpretation, presentation of results, evaluation of scientific literature, scientific writing and advanced statistical concepts as they relate to the field of Psychology. Prereq: PSYC 1000, 1005 and 2090 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3104 - Behavioral Genetics

Interdisciplinary course on relationships between behavior and heredity, with emphasis on human behavioral genetics. Prereq: BIOL 2051/2095, 2061/2097, 2071/2096, and 2081/2098 with a C- or higher. Cross-listed with BIOL 3104. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3144 - Human Cognition

Studies information processing in humans, with emphasis on memory, thinking and language. Prereq: PSYC 1000 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3145 - Industrial and Organizational Psychology

Surveys the fields of industrial and organizational psychology. These fields apply psychological principles to improving productivity and satisfaction in the workplace. Topics include motivation, leadership, group processes, team functioning, occupational health, selection and training of employees, and performance management. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3205 - Human Development I: Child Psychology

Studies human development covering birth, infancy, toddler, preschool and school-aged child. Covers biological, cognitive and social processes. Prereq: PSYC 1000 and PSYC 1005 or PSYC 3215 with a grade of C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3215 - Human Development II: Adolescence and Adulthood

Study of human development from adolescence through adulthood and aging. Covers biological, cognitive, and social processes. Prereq: PSYC 1000 and PSYC 1005 or PSYC 3205. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3222 - Principles of Learning and Behavior

Introduces the scientific study of learning and behavior, focusing on "Behaviorism." Principles of operant and classical conditioning are discussed. A particular emphasis is placed on the relevance and application of these principles to understanding human behavior and psychopathology. Prereq: PSYC 1000 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3235 - Human Sexuality

Examines the physiological, psychological, and social psychological bases of human sexuality. Research on the range of sexual behaviors, individual sexual response, sexual development, sexual dysfunction, and variants of sexual orientation. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3254 - Introduction to Animal Behavior

Surveys the behavior of nonhuman animals, emphasizing the evolution through natural selection. One semester of general biology, biological anthropology, or other course emphasizing evolutionary perspective is strongly recommended as preparation for optimal student success. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3262 - Health Psychology

An overview of the scientific study of attitudes, behaviors, and personality variables related to health and illness. Emphasis is on the interaction of biological, psychological, and social factors that cause illness and influence its treatment and prevention. Prereq: PSYC 1000 and 2220 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3263 - Hormones and Behavior

The hormonal regulation of behavior will be the primary focus of this course. Topics include: hormonal basis of sexual differentiation and behavioral differences, parental behavior, biological rhythms, aggression, mood and stress. Prereq: PSYC 1000 and 2220 with a C- or higher. Cross-listed with PSYC 5263. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3264 - Exercise, Brain and Behavior

This course explores the impact of physical activity status-being sedentary or physically active-on brain function and behavior. Topics include effects of exercise on cognitive function, mood disorders, stress, anxiety, sleep and drug addiction. Emphasis will be placed on understanding the neurobiological mechanisms by which exercise impacts behavior. Students who have received credit for this topic listed under PSYC 3600 may not receive credit for this course. Prereq: PSYC 1000 and PSYC 2220 with a C- or higher. Term offered: fall. Cross-listed with PSYC 5264. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3265 - Drugs, Brain and Behavior

Explores the pharmacological, biological, and behavioral basis of drug effects. Topics include mechanisms of drug action, brain reward pathways, role of environment and history on drug effects, and the impact of science on drug abuse and medication development. Prereq: PSYC 1000 and 2220 with a C- or higher. Cross-listed with PSYC 5265. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3305 - Abnormal Psychology

This course applies a scientific approach to the examination of the symptoms, etiologies, and treatments of mental illnesses, including disorders of mood, anxiety, stress, addictions and those seen in childhood and older age. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3385 - Psychology of Mindfulness

This course will explore significant psychological, neurological, historical, societal and cultural aspects of mindfulness. It will integrate this current knowledge with more traditional aspects of the concept through classroom activities, guest lecturers, projects and field trips. Prereq: PSYC 1000 or 1005 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3405 - Family Psychology

Overview of theory and research pertaining to marital and family structure, functioning and dynamics. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3415 - Experimental Social Psychology

Surveys the field of Social Psychology, the study of the way in which cognitions, emotions, and behaviors are influenced by the presence, or perceived presence, of others. Heavily focuses on experimentation and experimental methods within the field of Social Psychology. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3460 - Military Clinical Psychology

This course focuses on clinical psychological issues facing service members, veterans, and military families. Topics include contemporary military culture, challenges of the military lifestyle/deployment/reintegration, specific types of military trauma, psychological issues of PTSD, TBI, depression, substance abuse, and suicidality, and psychological interventions for these issues. Prerequisite: PSYC 1005 with a C- or higher. Students will not earn credit for this course if they have already earned credit for PSYC 3600 with a similar topic title. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3505 - Psychology and the Law

Examines the legal and extralegal applications of psychology, such as assessment of insanity and competence, psychologists as expert witnesses, accuracy of eyewitness accounts, and issues relating to employment discrimination. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3600 - Topics in Psychology

Studies special topics to be selected by the instructor. Note: May be repeated for credit. Term offered: fall, spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PSYC 3610 - Psychological Trauma

Overview of psychological trauma, including: history, theoretical application, trauma models, diagnosis and treatment implications. Topics include family violence, child abuse, sexual abuse, and the trauma of war. Prereq: PSYC 1000 and 1005 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3611 - Psychology of Women

Reviews psychological theories and research of women's social, cultural, emotional and behavioral experience. Examines the sociocultural context of women's experience and explores women's socialization, developmental issues, cognitive abilities and achievement motivation, personality variables, stereotypes, psychological disorders, victimization, intimacy and sexuality. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3612 - Domestic Abuse

Examines the nature and extent of domestic violence. Personal characteristics and dynamics that contribute to spouse abuse are reviewed. Theories and research in the general field of family violence, victims' and perpetrators' treatment, and child abuse are discussed. Prereq:

PSYC 1000 and 1005 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3615 - Positive Psychology

This course provides an introduction to the science of positive traits, subjective experiences and institutions. It focuses on the empirical study of the factors that enable humans to flourish, develop resilience, mature and master life's challenges. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3724 - Developmental Psychobiology

Explores the biological influences on the development of brain and behavior. Emphasis is on the evolution and development, the role of experience in prenatal and postnatal development, the ontogeny of sensory systems, learning and memory, and the biological bases of language acquisition. Prereq: PSYC 1000/1005 or BIOL 2051/2061 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3810 - Neuropsychology

Brain organization and function and its relationship to human memory, language, perception, and other cognitive abilities. Covers the application of clinical neuropsychology to working with individuals that have neurological disorders. Prereq: PSYC 1000 and 2220 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3822 - Aging, Brain and Behavior

Examines the aging process, behavioral changes during senescence and the accompanying changes in the aged brain. Changes that are part of healthy aging are studied, as will age-related brain disorders. Prereq: PSYC 1000 and 2220 with a C- or higher. Cross-listed with PSYC 5822. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3832 - Neural Basis of Learning

Survey of advances in neuroscience that further the understanding of how neurons within our brains are modified by experience and thus influence subsequent behavior. Includes discussions of how these mechanisms contribute to various psychopathologies. Prereq: PSYC 1000 and 2220 with a C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have Junior standing, have completed at least 12 hours in PSYC courses with a 2.0 GPA in PSYC courses and must work with Experiential

Learning Center advising to complete a course contract and gain approval to enroll. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PSYC 4054 - Behavioral Neuroscience

The morphological, neurochemical and physiological bases of behavior. Emphasis is on structure and function of the brain. Prereq: PSYC 1000/PSCH 1001, 1005, 2090, 2220, 3090 and (6 credits hours or 2 courses from PSYC 3050-4990) with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4090 - Research Design and Development

This advanced writing and research methods course is designed to help students develop independent research ideas into formal products, such as a thesis proposal, grant application, presentation, and study protocols. Prereq: PSYC 3090 and instructor permission. Cross-listed with MARC 4090. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4101 - Applied Statistics Using SAS and SPSS I

Teaches the practical statistical tools social scientists use to analyze real-world problems. It is split into four modules, each taught by a different instructor. The first module introduces SAS and SPSS; modules 2-4 are problem-based and cover topics such as ANOVA, multivariate regression, and cluster analysis. Students are recommended to have taken and completed at least one statistics course, at any level, as preparation for optimal success. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4102 - Applied Statistics Using SAS and SPSS II

Students use the skills they learned in the previous semester to analyze a social issue of their choosing and present their findings. Note: A continuation of PSYC 4101. In addition to lectures, weekly one-on-one meetings between faculty and students are required. Prereq: PSYC 4101 with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4111 - Senior Seminar in Psychology: Career Capstone

This course provides a focused integration of the skills and knowledge gained through the psychology major curriculum. As a capstone course, it will prepare students to apply what they have learned to their professional careers. Prereq: PSYC 3090 with a grade of C- or higher. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4164 - Psychology of Perception

Studies sensory processes and perceptual variables. Covers processes related to vision, audition, gustation and olfaction. Prereq: PSYC 1000 and 2220 with a C- or higher. Cross-listed with PSYC 5164. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4455 - Theories of Personality

An in-depth look at several major theories of personality, including those from psychodynamic, behavioral, and humanistic schools of thought. Students are required to think actively and abstractly, and communicate their ideas in papers and classroom contributions. Prereq: PSYC 1000 and 1005 with a C- or higher. Term offered: fall, summer. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSYC 4485 - Psychology of Cultural Diversity

Studies diversity in the development of the individual across Asian, Black, Hispanic, and Native American cultures. The experience of self, role of the family, expression of emotions, and psychology of prejudice are emphasized. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4500 - Psychotherapy

Overview of the major systems of psychotherapy, including psychoanalysis, person-centered therapy, family therapy, cognitive or behavioral approaches, and relationships among the various approaches. Prereq: PSYC 1000/PSCH 1001, 1005, 2090, 2220, 3090 and (6 credits hours or 2 courses from PSYC 3050-4990) with a C- or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4511 - History of Psychology

Development of psychological theories since 500 B.C. Schools of psychology and their adherents. Readings of primary and secondary sources. Prereq: PSYC 1000/PSCH 1001, 1005, 2090, 2220, 3090 and (6 credits hours or 2 courses from PSYC 3050-4990) with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4680 - Behavioral & Biomedical Sciences Research Seminar

Introduces research in the behavioral and biomedical sciences. Students will learn about research programs at CU Denver and other centers, present their own research, and interact with the local scientific community. Prereq: permission of the instructor. Cross-listed with MARC 4680. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 2

PSYC 4730 - Clinical Psychology: Ethics and Issues

An in-depth exploration of the values and ideas that guide professional practice in psychology, including professional codes of conduct and philosophical ethical principles. Topics include confidentiality, informed consent, competence, integrity and respect. Prereq: 1000, 1005, 2090, 2220 and 3090 with a C- or higher. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4780 - Behavioral & Biomedical Sciences Research: Ethics & Issues

Students will critically review and analyze some of the major ethical and policy issues that arise during the conduct of basic and applied behavioral research. Prereq: PSYC 1000, 1005, 2090, 2220 and 3090 with a C- or higher or instructor permission. Term offered: fall. Cross-listed with MARC 5780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4803 - Principles of Psychological Testing

Principles underlying construction, validation, and use of tests of ability, intelligence, and personality and of attitude surveys. Covers statistical topics such as content and construct validity, item analysis, and reliability analysis. Students are recommended to have taken and completed at least one statistics course, at any level, as preparation for optimal success. Cross-listed with PSYC 5803. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 4840 - Independent Study: PSYC

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: Permission of instructor. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PSYC 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PSYC 4939 - Internship

Prereq: Students must have Junior standing, have completed at least 12 hours in PSYC courses with a 2.0 GPA in PSYC courses and must work with Experiential Learning Center advising to complete a course contract and gain approval to enroll. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PSYC 4990 - Topics in Psychology

Advanced study of special topics to be selected by the instructor. May be repeated for credit. Prereq: Permission of instructor. Cross-listed with PSYC 5990. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PSYC 5164 - Psychology of Perception

Studies sensory processes and perceptual variables. Covers processes related to vision, audition, gustation and olfaction. Prereq: PSYC 1000 and 2220 with a C- or higher or Graduate standing. Cross-listed with PSYC 4164. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 5263 - Hormones and Behavior

The hormonal regulation of behavior will be the primary focus of this course. Topics include: hormonal basis of sexual differentiation and behavioral differences, parental behavior, biological rhythms, aggression, mood and stress. Prereq: PSYC 1000 and 2220 with a C- or higher or Graduate standing. Cross-listed with PSYC 3263. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 5264 - Exercise, Brain and Behavior

This course explores the impact of physical activity status-being sedentary or physically active-on brain function and behavior. Topics include effects of exercise on cognitive function, mood disorders, stress, anxiety, sleep and drug addiction. Emphasis will be placed on understanding the neurobiological mechanisms by which exercise impacts behavior. Students who have received credit for this topic listed under PSYC 3600 may not receive credit for this course. Prereq: PSYC 1000 and PSYC 2220 with a C- or higher or Graduate standing. Term offered: fall. Cross-listed with PSYC 3264. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 5265 - Drugs, Brain and Behavior

Explores the pharmacological, biological, and behavioral basis of drug effects. Topics include mechanisms of drug action, brain reward pathways, role of environment and history on drug effects, and the impact of science on drug abuse and medication development. Prereq: PSYC 1000 and 2220 with a C- or higher or Graduate standing. Term offered: fall, spring, summer. Cross-listed with PSYC 3265. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 5822 - Aging, Brain and Behavior

Examines the aging process, behavioral changes during senescence and the accompanying changes in the aged brain. Changes that are part of healthy aging are studied, as will age-related brain disorders. Prereq: PSYC 1000 and 2220 with a C- or higher or Graduate standing. Cross-listed with PSYC 3822. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

PSYC 7144 - Advanced Cognition and Emotion

Overview of contemporary psychological theories and research in human learning, memory, cognition, and emotion. Emphasis on cognitive and affective neuroscience and the physiological-psychological organization of functional systems. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7205 - Advanced Developmental Psychology

A survey of neurobiological, cognitive, social and cultural processes in human development from conception through adulthood. Prereq: Admission to the Psychology MA, Clinical program or Clinical Health Psychology Ph.D. program or with permission of instructor and a graduate program director. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7220 - Advanced Biological Bases of Behavior

Survey course of advances in psychobiology which inform our understanding of the brain and behavior with special emphasis on perception, action, and cognition. A major goal of the course is to foster appreciation of the importance of interdisciplinary research. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7262 - Health Psychology I

Part I of a 2-course sequence. Presents crucial aspects of health psychology and behavioral medicine, including theoretical models, anatomy and physiology epidemiology, health promotion and primary prevention of medical problems. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7350 - Psychotherapy I

Surveys some of the major schools of psychotherapy, including cognitive and cognitive-behavioral therapies as well as motivational interviewing. Coverage also includes therapy techniques, process of therapy, and treatment-outcome research. Prereq: Admission to the Psychology MA, Clinical program or the Clinical Health Psychology Ph.D. program or with

permission of instructor and graduate program director. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7360 - Psychotherapy II

Theoretical approaches and techniques used in research, assessment and treatment of major forms of psychopathology, including anxiety, depression, schizophrenia and substance abuse, as well as marital problems and childhood disorders. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7410 - Assessment I: Personality

Reviews the process of selection, evaluation, administration, utilization, and interpretation of psychological tests related to psychosocial functioning. Issues of validity, reliability, utility, clinical judgement, ethics, and cross-cultural competence are reviewed. Prereq: Admission to the Clinical Health Psychology Ph.D. program, Clinical Psychology MA program, or by permission of instructor and graduate program director. Term offered: fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSYC 7420 - Assessment I: Intellectual and Cognitive Assessment

Reviews the process of selection, evaluation, administration, utilization, and interpretation of psychological tests related to cognitive functioning. Issues of validity, reliability, utility, clinical judgement, ethics, and cross-cultural competence are reviewed. Prereq: Admission to the Clinical Health Psychology Ph.D. program, Clinical Psychology MA program, or by permission of instructor and graduate program director. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7485 - Diversity in Clinical Psychology

Designed to foster understanding of diversity and its implications for clinical practice, research, and mental health policy. Students will learn to orient to the worldviews of clients from diverse backgrounds and to tailor their interventions to competently serve individuals in a pluralistic society. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7490 - Topics in Health Psychology Summer Lecture Series

Weekly lectures given by Clinical Health Psychology department faculty, advanced graduate students, alumni and area professionals on selected topics in the field. Note: This course is required for first, second and third-year graduate students. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

PSYC 7500 - Advanced Psychopathology

Key features of major mental disorders in adult populations. Includes classification, DSM diagnosis, epidemiology, course and prognosis, age/culture/gender features, etiology and biological bases. Prereq: Admission to Psychology MA, Clinical program or the Clinical Health Psychology Ph.D. program or with permission of instructor and graduate program director. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7511 - Historical and Philosophical Foundations of Psychology

Philosophical and historical antecedents to contemporary psychology, with particular emphasis on clinical psychology. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7700 - Clinical Research Methods

Principles of research methodology in clinical psychology. Major topics include research ethics, subject recruitment, ethnic and cultural considerations, selecting and evaluating research measures, epidemiology and comorbidity, taxonomic and outcome research and research design. Prereq: Admission to the Psychology MA, Clinical program or the Clinical Health Psychology Ph.D. program or with permission of instructor and graduate program director. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7710 - Multivariate Statistics

Topics include multiple regression, logistic regression, factor analysis, and structural equation modeling. Both experimental and non-experimental designs will be considered. Students will learn underlying theory of these techniques as well as how to perform analyses using software like SPSS and Mplus. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7713 - Advanced Statistics

Experimental design and analysis of controlled interventions and evaluations. Emphasis on multifactor analysis of variance, orthogonal contrasts, post-hoc tests, multiple regression, and analysis of co-variance. Prereq: Admission to the Psychology MA, Clinical program or the Clinical Health Psychology Ph.D. program or with permission of instructor and graduate program director. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 7730 - Ethics and Professional Issues in Psychology

An in-depth exploration of the values and ethical ideas that guide professional practice in psychology, including philosophical ethical principles and professional codes of conduct. Specific topics include confidentiality, informed consent, competence, and respect for persons.

Students are expected to be able to think about and communicate difficult ethical concepts in the form of class participation and a major paper. Prereq: Admission to the Psychology MA, Clinical program or the Clinical Health Psychology Ph.D. program or with permission of instructor and graduate program director. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSYC 7910 - Clinical Practicum

Clinical experience under supervision of licensed, doctoral-level professionals. Students participate in assessment, intervention, and/or evaluation and research in a variety of settings.

Note: All field placements must be approved by the Director of Clinical Training (DCT) in advance of registration. Students should enroll in 1 credit hour during year one (spring and summer semesters only) and 3 credit hours during years two (fall, spring, and summer semesters) and three (fall semester only). A total of 14 credit hours of PSYC 7910 are required. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall, spring, summer. Repeatable. Max Hours: 14 Credits. **Semester Hours:** 1 to 3

PSYC 7911 - Clinical Practicum II

Clinical experience under supervision of licensed, doctoral-level professionals. Students participate in assessment, intervention, and/or evaluation and research in a variety of settings.

Note: All field placements must be approved by the Director of Clinical Training (DCT) in advance of registration. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PSYC 8100 - Clinical Behavioral Medicine

Presents basic assessment and psychotherapeutic techniques used for patients with various disorders, focusing on cognitive-behavioral methods and the unique needs of patients experiencing chronic disease. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 8200 - Teaching Skills Workshop

Students will learn, explore, and practice the basic principles and strategies of good teaching. We will also explore research and theory for teaching at the college level. Restrictions:

Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

PSYC 8262 - Health Psychology II

Part II of a 2-course sequence. Further aspects of health psychology and behavioral medicine, including health service utilization, patient-provider relationships, social support, terminal

illness and issues related to chronic disease states. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 8502 - Cardiovascular Health Psychology

The course focuses on research and clinical practice regarding psychological factors related to cardiovascular functioning and disease. The physiology of the cardiovascular system will be presented and primary and secondary prevention as related to psychological functioning will be emphasized. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 8503 - Group Interventions in Health Psychology

The course will serve as an introduction to group psychotherapy and group process principles with a focus on the design, implementation and delivery of evidence-based group interventions in the field of Clinical Health Psychology. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 8550 - Advanced Social Psychology

This is a graduate level seminar that broadly covers the social bases of behavior from a social psychological perspective. It includes discussion of topics such as group processes, attribution theory, discrimination, and perspectives on attitudes. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PSYC 8910 - Advanced Clinical Practicum

Advanced clinical experience under supervision of licensed, doctoral-level professionals. Students participate in assessment, intervention, and/or evaluation and research in a variety of health care settings to address the interface between physical and psychological functioning. Note: All field placements must be approved by the Director of Clinical Training (DCT) in advance of registration. Students should enroll in 3 credit hours during years three (spring and summer semesters only) and four (fall and spring semesters only). A total of 12 credit hours of PSYC 8910 are required. Restrictions: Restricted to Graduate majors in PSYC and PSYH. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 4

PSYC 8938 - Pre-Doctoral Internship

Intensive full-time clinical experience with supervision by licensed, doctoral-level professionals. Interns participate in assessment, intervention, and/or evaluation and research in a variety of settings. Students apply through the Association of Psychology Postdoctoral and Internship Centers (APPIC) national matching process. Note: All field placements must be approved by the Director of Clinical Training (DCT) in advance of registration. Restrictions: Restricted to

Graduate majors in PSYC and PSYH. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

PSYC 8990 - Doctoral Dissertation

Independent research on the doctoral dissertation in Clinical Health Psychology. Prereq: Admission to the Clinical Health Psychology Ph.D. Program. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 10 Credits. **Semester Hours:** 1 to 10

Public Administration

PUAD 1000 - Public Service Online Success and Career Exploration

Offers Public Service majors the chance to explore their career field and adapt to an online learning environment. Topics will include Canvas tips, online course etiquette, community building for the online learner, how online students can utilize CU Denver student-success resources, writing and citation tips, and contemporary time management techniques. Restriction: Restricted to BAPS Majors only. Max hours: 1 Credit. **Semester Hours:** 1 to 1

PUAD 1001 - Introduction to Leadership and Public Service

This course provides a broad introduction to public service and encourages exploration of personal values and interests related to leadership, community, and life choices. Multiple paths to advancing the public good are explored, including volunteerism, citizenship, and service in government and nonprofits. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 2001 - Management for Public Service

Learn how managers in public sector organizations foster human capital and manage performance in a diverse, inclusive, and collaborative workforce. Examine strategic management techniques, human resource law and procedures. Explore the values of character and competence in creating effective organizations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 3001 - Financial Management for Public Service

Explore topics in public financial management including budget preparation, monitoring, and reporting. Learn how to build public service capacity through sound fiscal discipline and equitable allocation of resources for the public good. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 3002 - Program Design, Evaluation, and Decision-Making

Effective public service program outcomes are systematically managed, monitored, and evaluated. Learn the analytical, critical thinking, and problem-solving skills required for program design, implementation, evaluation, and evidence based decision-making. Max hours: 3 Credits.

Semester Hours: 3 to 3

PUAD 3003 - Introduction to Nonprofit Organizations

Explore the historical background, development, role, auspices, organization, and purposes of nonprofit agencies. Expand awareness of the scope and breadth of the nonprofit sector in the U.S., examine the inner workings of nonprofit organizations as the foundation for further study.

Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 3004 - Managing Nonprofit Organizations

Examine leadership and decision-making theory and practice in the nonprofit sector. Explore classic and contemporary theories on leadership, management, governance and organizational effectiveness of nonprofit organizations. Techniques for effective board meetings, committee work, development of board members, and policy development. Max hours: 3 Credits.

Semester Hours: 3 to 3

PUAD 3005 - Collaboration Across Sectors

Organizations across sectors respond to complex problems with innovative and flexible responses through networks. Managing within and across organizations is essential to effective performance in a networked system. Explore collaborative governance across sectors-- nonprofit, for-profit, and public--with analyses and applications. Max hours: 3 Credits.

Semester Hours: 3 to 3

PUAD 3110 - Seminar in Nonprofit Management

This course provides an overview of the principles and concepts that are unique to nonprofit management. Topics include executive management, funding diversity, human resource management, marketing, volunteer management and ethics. Students are also given an introduction to the history and the importance of the nonprofit sector. Cross-listed with PUAD 5110 and CRJU 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4001 - Ethics in Public Service

Understand ethics in public service, explore ethical concerns in public affairs, and confront ethical challenges in government and nonprofit organizations. Through theoretical and case study readings and applied projects, students analyze ethical issues and proposed responses.

Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4002 - Leading for the Public Good

Explore how service and regulation intersect and challenge public servants to balance management, politics, and law. Investigate cultural competency, social justice, and citizenship, and issues related to organizational development, leadership, motivation, change management, and teamwork. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4003 - Effective Communication for Public Service

Cultivate skills in making a well-reasoned argument, locating supporting evidence, speaking and writing persuasively, and effectively fostering partnerships across sectors and media. Address varied audiences with presentations that communicate diverse viewpoints in the public service context. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4004 - Building Public and Financial Support for Nonprofit Organizations

Examines methods, techniques, and directed experience in fundraising for nonprofit agencies. Explores relationships with umbrella organizations, government funding, grantsmanship, budget control, and accountability. Discusses social entrepreneurship and social innovation. Examines communications, marketing, and public relations intersection with resource development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4006 - Organizational Development

Examine structures, life-cycles, and change dynamics of government and nonprofit organizations including organizational culture, the relationship between organizational structure and service provision, and organizational strategy and effectiveness. Learn diagnostic and assessment tools, methods, and processes for improving organizational performance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4007 - Nonprofit HR: Governance, Staff, Volunteer Management

Current issues in human resource administration for employees of nonprofit organizations. Topics include such areas as recruitment, staff development, volunteer management, performance, evaluation, labor-management issues, and affirmative action. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4008 - Current Issues in Public Sector Organizations

Explore the impact on public sector organizations of emergent issues such as globalization, changing demographics of the citizenry and workforce, sustainability, declining budgets, and information technology. Examine ways public sector organizations adapt to these trends. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4009 - Human Service Organizations

Provides an overview of human services delivery in government and nonprofit organizations. Explore causes and conditions that give rise to the need for effective and equitable human service organizations. Learn essential skills including cultural competencies, boundaries, and collaboration. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4010 - Public Service in Emergency Management and Homeland Security

Introduces emergency management and homeland security including: management of hazards, emergencies, disasters, and the networks of government and nonprofit organizations providing services. Focuses on principles of emergency management and homeland security at state and local jurisdictional levels. Cross-listed with PUAD 5650, CRJU 4010, and CRJU 5650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4012 - Principles of Emergency Management

Introduces the discipline and practice of emergency management. Topics include administrative practice and processes by which public policy shapes governmental responses to hazards, emergencies, and disasters. Cross-listed with PUAD 5655, CRJU 4012 and CRJU 5655. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4020 - Social Entrepreneurship

Social entrepreneurship, practices, theories, and allied concepts. Using private, nonprofit, and government examples, explore innovation, creativity, profit for social welfare, and innovative management. Advance an organization's social good mission, and increase effectiveness, accountability, and efficiency through market-based techniques. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4140 - Nonprofit Financial Management

Provides a grounding in financial management for the "non-accountant" by focusing on an array of knowledge and management skill areas necessary for allocating and controlling resources and for analyzing, reporting and protecting the fiscal health of the organization. Topics include key accounting principles, understanding and using financial statements, the budget development process, cash flow analysis, banking relationships, using the audit report, maximizing investment policy and strategy, and understanding the boundaries of tax exemption. Cross-listed with PUAD 5140 and CRJU 5140. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4145 - Philanthropy

Today, the organized field of philanthropy and its companion field, impact investing, are growing at a remarkable speed. This course will explore the origins of philanthropy and impact investing and provide students with an in-depth understanding of how philanthropy works today and the nuances that exist among different forms of philanthropy and investment: individual giving, foundations, corporate philanthropy, and impact investing. It will also explore new trends among individual and institutional investors and unpack the different approaches that funders are taking to influence how services are delivered and the striking efforts to affect systems changes. Cross-listed with PUAD 5145. Max hours: 3 credits **Semester Hours: 3**

PUAD 4160 - Nonprofit Boards and Executive Leadership

The important roles and responsibilities of a voluntary board of directors and the process of governing are often misunderstood. This course explores the special powers of a nonprofit board of directors as framed by and responsive to public policy. From the perspective of organizational behavior and theory, the course examines the leadership role and interplay between board members and the executive director. The examination includes a comparative analysis of different governing models, and explores fundamental questions of board composition, the role of advisor boards, achieving effective board meetings, the realm of liability, using committees, and the board's role in fundraising, among other special subject matter. Crosslisted with PUAD 5160. Max hours: 3 Credits. **Semester Hours: 3 to 3**

PUAD 4220 - Human Resource Management

Covers human resource functions in public and nonprofit agencies. Topics include job analysis, compensation, recruiting, selection, rewarding, training and development. Contemporary issues concerning civil service reforms are also presented. Cross-listed with PUAD 5220. Max Hours: 3 Credits. **Semester Hours: 3 to 3**

PUAD 4325 - Public Private Partnerships

This course has been designed to introduce students to public private partnerships (PPPs) as a field of study and practice using Colorado as a laboratory for current practice, policy, strategy, management and finance. Students will engage current examples of PPPs as cases, learn and exchange in class presentations with guest lecturers currently leading PPPs and evaluate projects in class assignments doing research, analysis, and field interviews. Students will enhance their knowledge as well as skills commonly used in public, private, nonprofit and enterprise management and the public policy context and narrative of PPPs in international and U.S. practice. Cross-listed with PUAD 5325. Max hours: 3 credits **Semester Hours: 3**

PUAD 4440 - Negotiation and Conflict Resolution

Focuses on concepts and skills necessary to negotiate policy and management decisions and manage internal and external conflicts. Designed to help students understand the dynamics that affect negotiations and to apply the principles and strategies of negotiation in a variety of

decision making and dispute resolution contexts. Cross-listed with PUAD 5440. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4600 - Special Topics in Public Service

This highly specialized seminar addresses cutting-edge and emerging developments in the field of public service and provides students and faculty with the opportunity to explore significant themes, issues and problems from a broad interdisciplinary perspective. Topics vary from semester to semester. Repeatable. Max hours: 18 Credits. **Semester Hours:** 1 to 6

PUAD 4630 - Economic Development

As governments search for new ways to be efficient, improve performance and leverage resources, they are also looking at their communities, states and regions in terms of competitiveness, international trade and globalization innovation, collaboration and partnerships. This course will look at practices where economic development includes these elements: the Colorado Innovation Network, the Colorado Office of Economic Development and International Trade, the Metro Denver and Denver South Economic Development Partnerships, Mile High Connects, the Downtown Denver Partnership, and public-private partnerships across multiple sectors in transportation, broadband, water and innovation. Students will develop an economic development strategy based on knowledge and tools learned in the course. Political and professional leadership will be part of the dialog. Crosslisted with PUAD 5630. Max hours: 3 credits **Semester Hours:** 3 to 3

PUAD 4633 - Economic Development

As governments search for new ways to be efficient, improve performance and leverage resources, they are also looking at their communities, states and regions in terms of competitiveness, international trade and globalization innovation, collaboration and partnerships. This course will look at practices where economic development includes these elements: the Colorado Innovation Network, the Colorado Office of Economic Development and International Trade, the Metro Denver and Denver South Economic Development Partnerships, Mile High Connects, the Downtown Denver Partnership, and public-private partnerships across multiple sectors in transportation, broadband, water and innovation. Students will develop an economic development strategy based on knowledge and tools learned in the course. Political and professional leadership will be part of the dialog. Cross-listed with PUAD 5633. Max hours: 3 credits. **Semester Hours:** 3 to 3

PUAD 4638 - Colorado Politics, Policy, and Administration

This course focuses on the state-level policy-making process in Colorado, and how that process is affected by local, state, and federal politics, administration, and other policy-making constraints applicable to the state. Substantive topics covered will vary, but students will be exposed to a wide range of perspectives and experiences from practitioners and policy

influencers engaged in state-level politics, policy-making, and administration. Cross-listed with PUAD 5638. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 4740 - Sustainable Energy Policy

This course will cover the basic principles and operation of policy and regulation that impact the production and use of energy (with a focus on transportation and electricity generation) from all of the major sources currently available and used. We will analyze (and, through a sustainability lens, critically evaluate) energy from water (hydroelectric, hydrokinetic), coal, domestic and international petroleum, natural gas and nuclear reactors. A significant portion of the course will focus on electricity generation and associated policy, technologies and regulation. In the context of each energy source and use, we will review and discuss sustainability practices, policies, and, issues. Cross-listed with PUAD 5740. Max hours: 3 credits **Semester Hours:** 3 to 3

PUAD 4840 - Independent Study

This course consists of faculty-guided research in an area of mutual interest to the student and instructor. Students are responsible for selecting their area of inquiry prior to contacting the instructor. Permission of instructor is required. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PUAD 4939 - Public Service Internship

The internship course, required for all Public Service majors unless waived, provides career-related experiential learning in a government agency or nonprofit organization. Students must apply to the internship course in the semester before they hope to enroll and obtain permission from their advisor and the instructor prior to enrolling. Prereq: PUAD 1001 plus any other 2000 level (or higher) PUAD course, a GPA of 2.0, and a minimum of 15 UCD credit hours completed. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 9

PUAD 5001 - Introduction to Public Administration and Public Service

Examines fundamental theories, structures, and processes of governance in the United States, including the evolving roles and responsibilities of public, nonprofit, and private sectors. Covers topics including public service values and ethics, cross-sector and intergovernmental partnerships, and comparative public administration. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5002 - Organizational Management and Behavior

Course covers elements which, when combined, create a resilient learning organization. Topics include organization theory and design, managing human capital, group development and

performance, inter- and intra-group communication, information management, and ethical decision-making. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5003 - Research and Analytic Methods

Examines qualitative and quantitative research methods used to answer questions and inform decisions in public and nonprofit settings. Methods covered include reviewing scholarly literature; formulating research questions; selecting appropriate design, data collection and sampling strategies; and analyzing data. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5004 - Economics and Public Finance

Evaluates the role of government with respect to provision and financing of public goods. Explores 5 broad topics: 1) welfare & microeconomics 2) expenditure theory 3) resource mobilization (emphasis on taxation) 4) fiscal federalism 5) basic budgeting & analytical tools. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5005 - The Policy Process and Democracy

Introduces theoretical and applied studies of the policy process. Policy process includes how (I) issues are conceptualized and brought forward as problems needing action; (II) policies are designed and selected; and (III) enacted policies are implemented, monitored, evaluated, and revised. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5006 - Public Service Leadership and Ethics

Provides understanding of the role played by leaders within and across public and nonprofit organizations, and in complex social environments. Examines theories of leadership, skills and processes employed by effective leaders, and ethical conduct of leaders in shaping societal values. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5007 - Qualitative Research Methods

Focuses on qualitative research methods that incorporate field work techniques such as observation, interviews, and content analysis. The main objective is to discover practicalities and limitations of ethnographic methods with a comparative methodology perspective. Students are required to conduct a research project. Prereq: PUAD 5003 with a B- or higher. Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 7007. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5008 - Evidence-Based Decision-Making

Course provides opportunities for students to use skills developed in Research and Analytic Methods (including developing research/evaluation questions, designing surveys/interview guides, and analyzing data) to inform decisions and/or develop recommendations in multiple policy, management, and program evaluation scenarios. Prereq: PUAD 5003 with a B- or higher. Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5010 - Rocky Mountain Program

This program encourages participants to examine their public sector roles, develop an understanding of their leadership styles, develop communication skills, and enhance their ability to think more systematically and strategically in their positions. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5030 - Denver Community Leadership Forum

Designed to increase cross sector cooperation and enhance personal leadership skills and knowledge, program is administered annually February to November. Students gain skills in conflict management, participate in Outward Bound program in July, and learn leadership theories and concepts from a variety of presenters and trainers. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5110 - Seminar in Nonprofit Management

This course provides an overview of the principles and concepts that are unique to nonprofit management. Topics include executive management, funding diversity, human resource management, marketing, volunteer management and ethics. Students are also given an introduction to the history and the importance of the nonprofit sector. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 3110 and CRJU 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5115 - Effective Grant Writing for Nonprofit and Public Sector Managers

This course is designed to provide students with the knowledge and skills to perform one of the most critical functions for any public or nonprofit sector agency today: gaining funds through proposals. Students learn how to locate and analyze funding opportunities through public and private funders and how to research, plan and write effective and competitive proposals. The course provides theoretical and practical knowledge about persuasive writing, the proposal submission and review process, building effective relationships with funders and how to proceed after post-funding decisions (positive or negative). Restrictions: Restricted to Graduate

and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5120 - Nonprofits and Public Policy

Examines the intersection of public policy and the nonprofit world and the ways in which each affects the other. The course examines current policy issues that relate to the nonprofit sector such as conversion of nonprofit to for-profit status, regulation of the nonprofit sector, issues of financial management, the role of nonprofits in devolution and privatization of government services, tax exemptions, "charitable choice," donor control, governance and the future of the future of the sector. The course examines the ways nonprofits have affected the policy process and public policies by exploring the factors that shape social movements, nonprofit advocacy, strategies of influence, and the role of nonprofits in social movements such as Civil Rights and the environment. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5125 - Civil Society and Nongovernmental Organizations

This course is designed for students interested in the international nonprofit sector. The course compares non-Western forms of civil society with the American tradition of civil society. Students will learn about the efforts of Nongovernmental Organizations (NGOs) working in Third World countries to influence democracy, free association, and/or increased political and societal pluralism. Additionally, the course will focus on NGO management and governance issues in countries where there are strict controls and limits on the activities of NGOs. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5130 - Collaboration Across Sectors

The blurring of the three economic sectors - government, business and nonprofits-- continues to increase as more partnerships are developed across sectors. This course focuses on collaboration and partnerships involving public, nonprofit and for-profit organizations. Additionally, students are expected to gain an understanding of the issues and policies associated with the bidding, contracting, program delivery and reporting processes when nonprofit organizations are contracted to achieve public sector goals and/or private sector objectives. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5140 - Nonprofit Financial Management

Provides a grounding in financial management for the "non-accountant" by focusing on an array of knowledge and management skill areas necessary for allocating and controlling resources and for analyzing, reporting and protecting the fiscal health of the organization. Topics include key accounting principles, understanding and using financial statements, the budget

development process, cash flow analysis, banking relationships, using the audit report, maximizing investment policy and strategy, and understanding the boundaries of tax exemption. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 4140 and CRJU 5140. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5145 - Philanthropy

Today, the organized field of philanthropy and its companion field, impact investing, are growing at a remarkable speed. This course will explore the origins of philanthropy and impact investing and provide students with an in-depth understanding of how philanthropy works today and the nuances that exist among different forms of philanthropy and investment: individual giving, foundations, corporate philanthropy, and impact investing. It will also explore new trends among individual and institutional investors and unpack the different approaches that funders are taking to influence how services are delivered and the striking efforts to affect systems changes. Cross-listed with PUAD 4145. Max hours: 3 credits **Semester Hours:** 3 to 3

PUAD 5150 - Fundraising & Financial Resource Development

Designed to provide a comprehensive overview of funding sources available to nonprofit organizations (e.g., foundation and governmental grants, individual and corporate donations, entrepreneurial sources of revenue and events.), as well as detailed information on how to secure support of the various sources presented. Additionally, students are expected to gain both theoretical and practical knowledge relevant to why it is important to diversify an organization's revenue streams. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5160 - Nonprofit Boards and Executive Leadership

The important roles and responsibilities of a voluntary board of directors and the process of governing are often misunderstood. This course explores the special powers of a nonprofit board of directors as framed by and responsive to public policy. From the perspective of organizational behavior and theory, the course examines the leadership role and interplay between board members and the executive director. The examination includes a comparative analysis of different governing models, and explores fundamental questions of board composition, the role of advisor boards, achieving effective board meetings, the realm of liability, using committees, and the board's role in fundraising, among other special subject matter. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5170 - Strategic Management for Nonprofit and Public Managers

Designed to train public and nonprofit managers in the effective use of strategic management tools and techniques traditionally used by corporations. Strategic management tools and skills,

although traditionally used by business, should not be seen as the exclusive domain of corporations. The course teaches students how to adapt traditional strategic management capabilities to the particular conditions of public and nonprofit organizations. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5180 - Social Entrepreneurship

Designed to introduce students to the concept of social entrepreneurship. Using nonprofit (and public) organizational examples, students gain an understanding of what it means to be an innovative manager. Students study techniques designed to advance an organization's mission and increase organizational effectiveness, accountability and efficiency through the use of for-profit techniques within a nonprofit context. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5200 - Education Policy

This course provides a broad overview of the history, purposes, and structure of public education in the United States, including topics such as education systems and governance, institutional actors, funding, education reform trends, and policy implementation and outcomes. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5220 - Human Resource Management

Covers human resource functions in public and nonprofit agencies. Topics include job analysis, compensation, recruiting, selection, rewarding, training and development. Contemporary issues concerning civil service reforms are also presented. Cross-listed with PUAD 4220. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5250 - Intergovernmental Management

Surveys the basic literature of intergovernmental management and examines the interactive role of managers at federal, state, and local levels of government. Emphasis is placed on current intergovernmental issues. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5260 - Managing Diversity

Using a systems approach, diversity within organizations is examined through the construction and review of theories in private, public, and nonprofit organizations. Existing models of managing diversity are examined and analyzed. Restrictions: Restricted to Graduate and

Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5271 - Managing Conflict and Change

Explores the process of change in organizations, communities, society, and conflicts that arise. Through the use of relevant case studies and role playing exercises, students are provided a practical framework for looking at change and managing conflict associated with change. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5280 - American Public Service Environment

The American Public Service Environment. This course, intended for students from cultures outside the United States and for whom English is a second language, introduces students to public service professionals working at area government and nonprofit organizations. Students learn about the American system of government, American political and cultural values, and the workplace context for public service in America. Through interactions with public service professionals and course assignments, students improve their language skills as well as their knowledge about government and civil society in America. Restriction: This course is restricted to International students enrolled in the International MPA (IMPA program). Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5290 - Comparative Public Administration for International Students

This year-long course provides mid-career international students with individualized attention as they actively compare and contrast American public administration with that of their home countries, develop their own organizational and personal leadership skills, and prepare to implement lessons learned in the U.S. in their own cultural and professional context. Restriction: Restricted to International students enrolled in the International MPA (IMPA) program only. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PUAD 5310 - Policy Formulation & Implementation

Building on PUAD 5005, students learn how policy is developed and implemented in several levels of government - local, state, federal - and within organizations themselves. The course makes use of the case studies to explore the intricacies of developing and implementing policy and the political, economic, and institutional contexts that affect these two states of policy development. Students also consider the different criteria that can be used to judge the effectiveness of programs and policies. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5320 - Public Policy Analysis

Provides training in the systematic analysis of policy and program initiatives using an economics orientation and employing a case method. The course covers benefit-cost analysis, cost-effectiveness analysis, present values, and the treatment of multiple criteria in public sector program analysis. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5325 - Public Private Partnerships

This course has been designed to introduce students to public private partnerships (PPPs) as a field of study and practice using Colorado as a laboratory for current practice, policy, strategy, management and finance. Students will engage current examples of PPPs as cases, learn and exchange in class presentations with guest lecturers currently leading PPPs and evaluate projects in class assignments doing research, analysis, and field interviews. Students will enhance their knowledge as well as skills commonly used in public, private, nonprofit and enterprise management and the public policy context and narrative of PPPs in international and U.S. practice. Cross-listed with PUAD 4325. Max hours: 3 credits **Semester Hours:** 3 to 3

PUAD 5330 - Intermediate Statistical Analysis

Follows PUAD 5003/7003 and is focused on more advanced statistical techniques to be used in research. These techniques include the use of regression in time series analysis; binary response; nonlinear, logistic, and profit models; and factor and path analysis. Evaluating potential problems with model specification and the remedies are included. Students are required to test hypotheses using these models with a data set. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 7330. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5350 - Program Evaluation

Describes the theory and methodology for the design of social research and demonstration projects and the application of analytic and statistical methods for evaluating public programs. Focus is on the application of evaluation methods and techniques of data interpretation. Report preparation is emphasized. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5361 - Capstone Seminar

Synthesizes competencies gained throughout the course of study into a client-based research project. Students conduct independent research, complete a final written project demonstrating their qualifications and expertise, and orally present findings to a committee of faculty and public administration professionals. Prereq: PUAD 5001, 5002, 5003, 5004 or 5503, 5005 and 5006 and 5008 with a B- or higher. Restriction: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5370 - Media and Public Policy

Explores the conventions and practices of the print and electronic media in the United States. The course enables students to better understand the place of the media in society, the way the media look at themselves and how journalists confront conflicting values in the performance of their roles. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5380 - Citizen Participation: Theory and Practice

Tackles the issues of citizen participation and community involvement in theory and practice. Students work in class on understanding the theoretical foundations that are relevant to citizen participation. Students engage in significant out-of-class projects to ground them in the practice of public involvement. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5410 - Administrative Law

Examines legal aspects of policy implementation particularly the relationship between courts and administrative agencies. Covers standards of judicial review and agency action; administrative procedure and due process; selected special topics such as rights, liabilities, and immunities of public employees; and administrative discretion and scientific uncertainty. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5420 - Law and Public Policy

Examines the relationship between courts and legislative assemblies. Explores how legislators use the policy process to shape and influence the exercise of judicial authority, and how the courts affect the policy process in reviewing the constitutionality of state and federal legislation. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5440 - Negotiation and Conflict Resolution

Focuses on concepts and skills necessary to negotiate policy and management decisions and manage internal and external conflicts. Designed to help students understand the dynamics that affect negotiations and to apply the principles and strategies of negotiation in a variety of decision making and dispute resolution contexts. Cross-listed with PUAD 4440. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5455 - Environmental and All-Hazards Management Law

Conveys knowledge of the statutes, regulations, administrative law, and court decisions governing the management of hazards, natural resources, and environmental protection, with a focus on the risk and liability that individuals and organizations face in these areas of law. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5455. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5455 - Environmental and All-Hazards Management Law

Conveys knowledge of the statutes, regulations, administrative law, and court decisions governing the management of hazards, natural resources, and environmental protection, with a focus on the risk and liability that individuals and organizations face in these areas of law. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5455. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5460 - Political Advocacy

Addresses advocacy & lobbying issues of public policy & govt problems. Special attention is given to how advocacy process works in the public sector & policy making bodies & how lobbying techniques & processes can be understood. General focus on practical applications at all levels of govt with primary attention to state & local govt. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5501 - Contemporary Issues in Revenue and Tax Administration and Policy

This course provides a contemporary evaluation of Colorado's tax structure, revenue system, and the state budget. The interaction of politics, the initiative process, the State Constitution, and stakeholders is studied. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5502 - Public Financial Management and Policy

Provides basic understanding of issues & tools relevant to financial mgmt of public & non-profit org, including managerial acct (managing resources & obligations, investing idle funds, reporting, financial statement analysis, overview of budgeting, revenue forecasting, & costing) & debt management. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5503 - Public Budgeting and Finance

Covers concepts to manage the fiscal purse, prioritize resources, use financial documentation, and analyze fiscal data. Includes budget policy, content, format, processes, performance management, forecasting, inflation adjustment, time value of money, cost analysis, financial condition analysis, and spreadsheet competency. Restrictions: Restricted to Graduate and

Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5540 - Organization Development

Studies the dynamics involved in managing and facilitating change in organizations by application of behavioral science knowledge. Emphasis is placed on both cognitive and experiential learning. A background in organization theory and administrative behavior is required. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5615 - Health Policy

Draws upon existing policy models and evaluates the status of health policy formulation and implementation. Health policy topics include Medicaid and Medicare, managed care, health care reform proposals, telemedicine, the non-profit and for-profit role in health. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5625 - Local Government Management

Relates the systems, processes, and principles of public management to the local government environment. Public management concepts such as strategic planning, bureaucracy, formal and informal organizational structures, human resource planning, management control, systems theory, and administrative behavior are explored within the context of local government. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5626 - Local Government Politics and Policy

Examines local government from the perspective of politics and public policy making. The course focuses on local government political structures, policy analysis and formulation, political forces in administrative decision making, and the relationships between professional administrators and elected officials. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5628 - Social Problems and Policies

Examines local government and nonprofit approaches to addressing common urban social problems. Topics covered may include urban poverty, crime, education, housing, and immigration. Cross-listed with URPL 6449. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5630 - Economic Development

As governments search for new ways to be efficient, improve performance and leverage resources, they are also looking at their communities, states and regions in terms of competitiveness, international trade and globalization innovation, collaboration and partnerships. This course will look at practices where economic development includes these elements: the Colorado Innovation Network, the Colorado Office of Economic Development and International Trade, the Metro Denver and Denver South Economic Development Partnerships, Mile High Connects, the Downtown Denver Partnership, and public-private partnerships across multiple sectors in transportation, broadband, water and innovation. Students will develop an economic development strategy based on knowledge and tools learned in the course. Political and professional leadership will be part of the dialog. Crosslisted with PUAD 4630. Max hours: 3 credits **Semester Hours:** 3 to 3

PUAD 5631 - Seminar in Environmental Politics and Policy

Examines the fundamental principles of politics and policy that shape strategies of environmental protection. Focuses on the role of institutional processes, government organizations and nongovernmental organizations in environmental politics and policy. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5632 - Seminar in Environmental Management

Examines the practical challenges facing environmental managers today, using a series of case studies. Focuses on the role of institutional processes, government organizations and nongovernmental organizations in the practice of environmental management. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5638 - Colorado Politics, Policy, and Administration

This course focuses on the state-level policy-making process in Colorado, and how that process is affected by local, state, and federal politics, administration, and other policy-making constraints applicable to the state. Substantive topics covered will vary, but students will be exposed to a wide range of perspectives and experiences from practitioners and policy influencers engaged in state-level politics, policy-making, and administration. Cross-listed with PUAD 4638. Restriction: Restricted to Graduate level and Non-Degree Graduate students only. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5644 - Environmental and Hazards Law

This course provides a broad overview of issues in all hazards management as well as natural resource and environmental health law. It will convey knowledge of the statutes, regulations and court decisions governing the management of hazards by governmental agencies. The course will also cover aspects of environmental policy implementation and enforcement

including the legal aspects of natural resource allocation and management and environmental protection. Cross-listed with CRJU 5644. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5650 - Public Service in Emergency Management and Homeland Security

Introduces emergency management and homeland security including: management of hazards, emergencies, disasters, and the networks of government and nonprofit organizations providing services. Focuses on principles of emergency management and homeland security at state and local jurisdictional levels. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with PUAD 4010, CRJU 4010, and CRJU 5650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5655 - Principles of Emergency Management

Introduces the discipline and practice of emergency management. Topics include administrative practice and processes by which public policy shapes governmental responses to hazards, emergencies, and disasters. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5655, CRJU 4012, and PUAD 4012. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5710 - Public Sector Technology

This course addresses the impact and current use of technology in the modern government and nonprofit sector environments, including implications for interacting with citizens and organizational stakeholders, organizational decision-making and communication, and core functions such as budgeting and human resources. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5720 - Public Policies for Hazards and Disasters

Examines public policymaking and administration related to homeland security and disasters in the United States, including the interplay between security and traditional hazards management concerns. Assesses the role of institutional processes, governmental and nongovernmental organizations in policy development and implementation. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5740 - Sustainable Energy Policy

This course will cover the basic principles and operation of policy and regulation that impact the production and use of energy (with a focus on transportation and electricity generation) from all of the major sources currently available and used. We will analyze (and, through a

sustainability lens, critically evaluate) energy from water (hydroelectric, hydrokinetic), coal, domestic and international petroleum, natural gas and nuclear reactors. A significant portion of the course will focus on electricity generation and associated policy, technologies and regulation. In the context of each energy source and use, we will review and discuss sustainability practices, policies, and, issues. Cross-listed with PUAD 5740. Max hours: 3 credits

Semester Hours: 3 to 3

PUAD 5910 - Nature and Scope of Interpersonal Violence

Analyzes the social, historical, political, legal, and psychological aspects of gender-based violence. Topics include definitions of the problem, demographics, children and youth exposure, and national and global perspectives. Strategies for prevention, intervention, treatment, and social change are explored. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5910. Max hours: 3 Credits.

Semester Hours: 3 to 3

PUAD 5920 - The Psychology of Interpersonal Violence

Addresses the contributions and limitations of current empirical and clinical psychological literatures on interpersonal violence (IPV). Special attention is paid to the effects of IPV on adult and child survivors, their psychological needs, and the contribution of psychological knowledge to understanding and addressing the problem of IPV. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5920. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5930 - Interpersonal Violence Law and Policy

Examines public policy and law related to interpersonal violence (e.g., welfare reform, child maltreatment, criminal and civil court responses). Topics include the role of law enforcement agents, victim advocacy, and methods to change law and policy. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5930. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5940 - Interpersonal Violence Leadership, Advocacy, and Social Change

Examines different models of social change and various approaches to public address, including social movements and campaigns. Strategies for engaging diverse individuals, systems and communities to address interpersonal violence will be emphasized. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Cross-listed with CRJU 5940. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5960 - Interpersonal Violence and Health Care

Provides students with the knowledge and skills necessary for responding to the health care needs of patients experiencing interpersonal violence (IPV). Also explores how healthcare professionals can develop public & institutional discourses that transform healthcare policies & systems to address the health needs of IPV survivors. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 5961 - Interpersonal Violence, Health Advocacy and Systems Change

Explores how healthcare professionals can develop successful public & institutional discourses that transform healthcare policies & systems to address the health needs of patients experiencing interpersonal violence. Methods of advocacy, activism & organizational change that produce positive results including effective educ techniques. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 6600 - Special Topics: Public Administration

Studies special topics relevant to public administration, such as public/private sector partnerships, community participation, international development, conflict management, regionalism, managing economic options for Colorado, and nonprofit management and marketing. Each semester various topics are studied. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 6

PUAD 6650 - Professional Topics in Public Service

This series of elective courses delivers just-in-time professional skills and topical content relevant to the needs of today's public service workforce. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

PUAD 6700 - Community-Based Field Experience and Seminar

Students work in small groups to complete substantive projects for government agencies and community organizations, led by faculty instructor. Topics addressed will vary depending on the needs of the community partner. Prerequisite: Completion of PUAD 5003 and permission of instructor. Restriction: Restricted to SPA graduate students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 6840 - Independent Study: PUAD

Affords students the opportunity to do independent, creative work. Prereq: Permission of instructor. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

PUAD 6910 - Internship

For students who have not had government experience. Studies and reports are made while students have full- or part-time administrative traineeships, internships, or similar positions in government agencies or government-related organizations. Prereq: Completion of the common core courses. It is recommended that at least three of the track courses also be completed. Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Max hours: 3 Credits. **Semester Hours:** 1 to 3

PUAD 6950 - Master's Thesis

Restrictions: Restricted to Graduate and Graduate Non-Degree majors within CU Denver. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 6

PUAD 7007 - Qualitative Research Methods

Focuses on qualitative research methods that incorporate field work techniques such as observation, interviews, and content analysis. The main objective is to discover practicalities and limitations of ethnographic methods with a comparative methodology perspective. Students are required to conduct a search project. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Cross-listed with PUAD 5007. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 7010 - Advanced Seminar in International Public Policy

Explores advanced approaches and techniques in the study of public policy from international perspectives. The course includes lectures, student research presentations, and discussions with international public policy scholars. The course also includes public policy readings and writing assignments tailored to the student interests and needs. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8010 - Historical and Comparative Foundations of Public Administration

A doctoral seminar on developments and changes in public administration as a field of study. It examines how theory and practice have evolved and how the field is defined, studied and taught. It must normally be taken during the first full semester of the doctoral program. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8020 - Seminar in Public Management

An in-depth examination of contemporary literature, concepts, and theories of public management. Current issues and research problems are emphasized to prepare students for their advanced research. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8030 - Seminar in Public Policy

Offers an in-depth examination of contemporary literature, concepts, and theories of public policy, with an emphasis on policy process. Current issues and research problems are emphasized to prepare students for their advanced research. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8040 - Seminar In Economic and Institutional Foundations of Public Affairs

Offers an in-depth examination of the economic and institutional foundations of public affairs, with an emphasis on the evolution of theory and research in these fields. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8060 - Seminar On The Conduct Of Empirical Inquiry

Introduces basic elements of research design in the social sciences, focusing on the relationship between theories and methods, concept development and measurement, selection of observations or cases, and alternative methods of data collection and analysis. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8070 - Quantitative Methods II

Moves beyond basic linear regression techniques by covering advanced analytic methods for improved causal inference. Students will also be introduced to data management skills and techniques for using longitudinal data. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PUAD 8840 - Independent Study: PUAD

(Doctoral level) Affords students the opportunity to do independent, creative work. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

PUAD 8990 - Doctoral Dissertation

Once students are admitted to candidacy, they must be continuously registered for dissertation credit each fall and spring semester or be automatically dropped from the program. Students must register for 5 credit hours per semester. In cases where students will not be using any university resources during a particular semester, they may petition the Ph.D. director to register for fewer semester credit hours. Students must be registered for dissertation credit during the semester they have a colloquium or defense. Restrictions: Restricted to students in the Public Affairs PhD program (PAFF-PhD) only. Repeatable. Max hours: 30 Credits. **Semester Hours: 1 to 10**

Public Health

PBHL 1001 - Race, Gender, Class, & Health

Course focuses on the principles, tools, and population approach of social epidemiology as it relates health to race, gender, and class. Contemporary topics in public health will be used as case studies to illuminate principles and tools both in lecture and in recitation sections. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

PBHL 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Max Hours: 6 Credits. **Semester Hours: 3 to 3**

PBHL 2001 - Introduction To Public Health

An overview of the discipline and practice of public health. Includes the history of the field, its population perspective, emphasis on prevention, tools and techniques. General principles of the field are illustrated through contemporary public health case studies. Term offered: fall, spring. Max hours: 4 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3. **Semester Hours: 4 to 4**

PBHL 2052 - Global Demography and Health

This course examines current issues in population growth, fertility, mortality and migration throughout the globe; introduces basic demographic tools; encourages critical thinking about the causes and consequences of population change. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours: 3 to 3**

PBHL 2990 - Topics in Public Health

An in-depth study of selected social science perspectives/theories and their applications to population health. Topics will vary from semester to semester, with a particular emphasis on current, salient population health problems. Repeatable. Max Hours: 6 Credits. **Semester Hours: 3 to 3**

PBHL 3001 - Introduction to Epidemiology

Introduces the basic concepts of public health and epidemiology, including assessment of disease in the community, the study of causation and association of disease with lifestyle and environmental risk factors, as well as related special topics. We recommend coursework in college algebra or higher as preparation for this class. We have found that students who take this class before completing their math requirements are at a distinct disadvantage in this course, which is math-intensive. Therefore a grade of C or higher in MATH 1110 or equivalent is strongly recommended. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

PBHL 3002 - Ethnicity, Health and Social Justice

Surveys core issues contributing to racial or ethnic minority differences in health status. Historical and contemporary U.S. health and social policy, including the areas of environmental health, sexual and reproductive health, children and immigrants, are examined. Cross-listed with ETST 3002. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3010 - Human Sexuality and Public Health

The focus of this course is on human sexuality using a public health lens, examining a number of sexual health issues and their relationship to individual, familial, organizational, and social-level influences. Additionally, we will focus on identifying both primary prevention and intervention approaches to reducing sexual risk factors and increasing healthy behaviors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3020 - Introduction to Environmental Health

This introductory survey course focuses on the human health implications of environmental exposures. Topics include pathways of exposure, toxicology, risk assessment, regulations, and policy development. Additionally, environmental equity, ethics, globalization, international perspectives, climate change, sustainability, and activism are considered. Prereq: PBHL 2000 or 2001 with a C- or higher. Note: Students will not earn credit for this course if they have already earned credit for PBHL 2020. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3020 - Introduction to Environmental Health

This introductory survey course focuses on the human health implications of environmental exposures. Topics include pathways of exposure, toxicology, risk assessment, regulations, and policy development. Additionally, environmental equity, ethics, globalization, international perspectives, climate change, sustainability, and activism are considered. Prereq: PBHL 2000 or 2001 with a C- or higher. Note: Students will not earn credit for this course if they have already

earned credit for PBHL 2020. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3021 - Fundamentals of Health Promotion

Provides an overview of the field of health promotion, including an introduction to key theories and methods, as well as exposure to the breadth of programs and diversity of settings through several case studies. Includes attention to health behaviors as contributors to current public health problems and community-based approaches to health promotion in addressing them. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3030 - Health Policy

Health policies may have a profound effect on quality of life. Accessibility, cost, quality of health care; safety of food, water, and environment; the right to make decisions about our health; these issues are vitally tied to health policies. This course provides a framework for understanding the social, political and economic dimensions of health policy. Prereq: PBHL 2000 or 2001 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3031 - Health, Human Biology and Behavior

Introduces the multi-factorial nature of human health and well-being. Considers the influences of biology (genetics), behavior, environment, culture and social determinants, and health policy on the nature of disease and health problems from an integrated perspective. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3041 - Health, Culture and Society

Examines health and illness for individuals, families, and societies from multiple international perspectives, focused on topics such as traditional vs. Western medicine, characteristics of healers and therapeutic relationships, and stigmatized segments of society and their health status. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3050 - Decision Making

This course discusses current research on decision making/behavioral economics, as well as its application to individual well-being and public policy. You will gain insights on how and why people can be irrational in their daily decisions. Cross-listed with ECON 3050 and PSYC 3050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3051 - Mental Illness and Society

This course takes a social and public health--as opposed to medical, biological or psychiatric--approach to understanding mental disorder and society. Course addresses historical definitions of mental illness, social patterns of mental disorder and treatment and experience of mental illness patients, focusing on the U.S. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3070 - Perspectives in Global Health

Avian flu, disaster relief, aging populations and primary health care are key issues in a world where diseases cross borders rapidly, but health care resources may not. Examines improvements in global health, growing inequalities and social justice in health. Prereq: PBHL 2000 or 2001 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3071 - Global Topics In Sexual and Reproductive Health

Surveys trends and determinants of sexual and reproductive health around the globe and in the United States. Examines the social and behavioral determinants of sexual and reproductive health and the influence of policy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3200 - Human Migration: Nomads, Sojourners, and Settlers

Explores the relationship between human migration, voluntary and forced, and social organization and culture in the modern world. Case studies include pastoralists, foragers, refugees, immigrants, sojourners, and settlers and their impact on health, culture, identity, ethnicity, tradition and nationality. Cross-listed with ANTH 3200. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3440 - Medical Sociology

This course covers key issues in population health and emphasizes how sociological perspectives both challenge and augment biomedical perspectives on health and health care. We also discuss the social causes and consequences of race/ethnic, sex, and socioeconomic disparities in health. Cross-listed with SOCY 3440. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 3939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

PBHL 3999 - Special Topics in Public Health

Explores topics in public health. Topics will vary from semester to semester, with a particular emphasis on current topics. Prereq: Junior or senior standing or permission of instructor. Max Hours: 6 Credits. **Semester Hours:** 1 to 4

PBHL 4020 - Global Health: Comparative Public Health Systems

Within a limited period of time, middle and low income countries have experienced dramatic changes that affect the length and quality of peoples' lives. The health indicators for each country reflect a rich and meaningful context within interacting systems of economic, social, cultural patterns, and environmental and social justice. Analysis and contrast of public health indicators such as the millennium development goals develop an understanding of the complexity against a background of change. Prereq: Junior or Senior standing or permission from instructor. Cross-listed with URPL 6349. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4021 - Community Health Assessment

Introduces applied methods of public health, including: analyzing community-level assessment data, developing a casual model for selected health outcomes, maximizing community participation in the assessment process, developing assessments as a team, and setting the stage for effective intervention and evaluation. Prereq: Upper division standing, a course in statistics, and an introductory course in epidemiology (HBSC 4001, 5001). Cross-listed with HBSC 5021. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4031 - Ethnographic Research In Public Health

Qualitative, ethnographic tools for practical applications in public health, including methods of direct observation, informant interviews, focus groups, structured ethnographic methods, rapid assessment and participatory action research. Basic analytic strategies, including review of computer software, coding and data display techniques. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4040 - Social Determinants of Health

This course explores social inequalities in physical and mental health, the illness experience, the healing professions, health policy, relations between providers and patients, and the structure, access to, and financing of health care organizations, with some cross-national discussions.

Prereq: PBHL 2000 or 2001 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

PBHL 4060 - Evolutionary Medicine

Evolutionary medicine is a relatively new approach for understanding patterns of human health and disease. In this course, students will learn how human evolutionary history has shaped our

susceptibility and resistance to both chronic and infectious diseases. Prereq: ANTH 1303. Cross-listed with ANTH 4060 and 5060. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4070 - Health Disparities

The purpose of this seminar is to provide students with an understanding of how historical, psychosocial, environmental, and to some degree, biological and genetic factors contribute to inequality in health and health care. Course Prerequisites: PBHL 4040, PBHL 3001, PBHL 2051 with a grade of C- or better. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

PBHL 4080 - Global Health Practice

A travel-study course that provides students the opportunity to work on global health issues in the context of a supervised internship experience. In addition to a formal internship placement or directed research opportunity, students attend formal lectures and participate in seminars devoted to addressing those health issues most relevant to the country in which the course is being taught. Prereq: Junior or Senior standing or permission from instructor. Cross-listed with ANTH 4080/5080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4090 - Drug Syndemic

Psychotropic drugs, both legal and illicit, are a predominant part of our everyday lives. This course examines their use and meaning within cultures, and the social, political and economic issues that surround their production, use and misuse. Prereq: Junior or Senior standing or permission from instructor. Cross-listed with ANTH 4090/5090. Max hours: 3 Credits.

Semester Hours: 3 to 3

PBHL 4099 - Capstone Experience in Public Health

Offers students the opportunity to integrate, synthesize and apply concepts learned throughout the core curriculum of the public health major to real-world issues. The course involves extensive writing and small group presentations on the epidemiological, global, social, environmental, and policy dimensions of current problems in public health. Prereq/Co-req: PBHL 2000 or 2001 and all or all but one of PBHL 2020 or 3020, PBHL 3001, PBHL 3030, PBHL 3070, PBHL 4040 with a C- or better. Students must enroll in that remaining course concurrently with PBHL 4099. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4110 - Public Health Perspectives On Family Violence

Public health views family violence from a prevention perspective. Our exploration of child abuse, intimate partner violence, and other forms of family violence will complement other disciplinary approaches by focusing heavily on the community and social factors that contribute to abusive relationships. Theories of power and coercion and approaches to researching these issues will be analyzed and discussed through our exploration of the various forms of family

violence. Prereq: Junior or Senior standing or permission from instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4200 - The Global HIV/AIDS Epidemic

Provides a foundation for a critical analysis of HIV/AIDS in global context, concerning topics such as disease, the body, ethnicity/race, gender, sexuality, risk, addiction, power, and culture together with a set of ethnographic texts that explore the epidemic's impact. Cross-listed with HBSC 4200. Term offered: summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4620 - Health Risk Communication

Acquaints students with contemporary theory, research, and practice in health risk communication. Cross-listed with COMM 4620/5620 and ENVS 5620. Max hours: 3 Credits. **Semester Hours:** 3 to 3

PBHL 4840 - Independent Study

This course requires active independent learning based upon a written curricular outline and agreement with faculty in Public Health who supervise the student's work throughout the semester. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Permission of instructor required. Term offered: fall, spring, summer. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

PBHL 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

PBHL 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Prereq: Upper division undergraduate standing and permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 9

PBHL 4999 - Topics in Public Health

An in-depth study of selected social science perspectives/theories and their applications to population health. Topics will vary from semester to semester, with a particular emphasis on current, salient population health problems. Prereq: Junior or senior standing or permission of instructor. Cross-listed with HBSC 5999. Repeatable. Max hours: 12 Credits. **Semester Hours:** 0 to 4

Recording Arts

MSRA 5000 - Introduction to Graduate Studies

Surveys existing literature and research in science, technology, and pedagogy of recording arts. Extensive use of available resources in library, electronic and print, trade and scientific publications are explored. Use of computer applications for research and publication are developed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5001 - MSRA Research Seminar

In preparation for their thesis/portfolio, students learn research techniques by: applying skills from MSRA 5000, learning research design, performing research, interpreting results, and writing. Students will discover opportunities to add to the body of audio literature and recording techniques. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5004 - Topics in Media Forensics

Students learn theory and application through topical subjects designed to enhance theoretical and practical training in the analysis of forensic media. Emphasis will be placed on emerging technologies, methodological developments, and strengthening fundamental skills. These courses are repeatable for credit. Repeatable. Max Hours: 5 Credits. **Semester Hours:** 1 to 3

MSRA 5014 - Research Practices in Media Forensics

An introduction to practical research techniques and forensic science periodicals provides students with a foundation for projects and reports in subsequent classes and for the research thesis. Library resources, research design, writing styles, and information technology will be discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5054 - Experiential Lab

Students will understand laboratory procedures and the application of A/V technology in the field and in analysis through professional conferences and site visits to crime labs and government agencies. Students will respond to experiences regarding presentation, demonstration, and discussion components. Repeatable. Max Hours: 5 Credits. **Semester Hours:** 1 to 1

MSRA 5114 - Foundations in Media Forensics

Students learn the foundational processes integral to forensic audio, video, and image analysis demonstrating knowledge through reading responses and documentation of procedures and methodology used in assigned projects. Topics include: media recording technology, analog/digital theory, multimedia compression, and equipment characterization. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5124 - Forensic Science and Litigation

Critical analysis of legal precedent and court proceedings reveal to students the correlation between science and law in the litigation of forensic evidence. Assigned reading and research papers regarding evidence admissibility and scientific methodology will prepare students for evidence examination. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5134 - Computer Forensics

Students explore computer forensics through guided projects and group discussion. An overview of computer hardware/software and characterization of storage media and file types will be covered through mock evidence examination documenting the search, seizure, and acquisition of forensic media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5144 - MATLAB Foundations

An introduction to MATLAB workflow and its use in Media Forensics will be explored. Students will learn how to build program commands in scripts for signal analysis and to display graphical representations of data and statistics. Max hours: 2 Credits. **Semester Hours:** 2 to 2

MSRA 5214 - Forensic Audio Analysis

Students learn concepts through the application of techniques related to audio enhancement, digital media authentication, acoustic analysis, and automatic speaker recognition. The acquisition and analysis of digital evidence applying reliable methods prepares students for forensic audio analysis in the laboratory. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5224 - Forensic Video and Image Analysis

Students learn concepts through the application of techniques related to forensic video collection and image enhancement, authentication, photogrammetry, and comparison. The acquisition and analysis of digital evidence applying reliable methods prepares students for working on forensic imagery in the laboratory. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5244 - Mobile Phone Forensics

Students learn concepts regarding the proper handling of mobile phones to ensure evidence integrity and approaches to address the ever-changing field. Students are prepared for the acquisition and analysis of forensic media on personal devices through exercises and group projects. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MSRA 5254 - MATLAB for Forensic Audio Analysis

Advanced application of MATLAB for the forensic analysis of audio will be presented including file access, FFT and waveform plotting, and signal detection. Through the exploration of correlation and using mean quadratic difference students will be prepared for media authentication. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MSRA 5264 - MATLAB for Forensic Video and Image Analysis

Advanced application of MATLAB for the forensic analysis of images will be presented covering image processing and analysis techniques. Through exploring analyses such as Photo Response Non-Uniformity and the BI-Dimensional DFT, students are prepared for image authenticity examinations. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MSRA 5314 - Report Writing and Court Testimony

Students are prepared for expert witness testimony through the analysis of mock evidence, complimentary report preparation, and subsequent mock trial. This capstone experience will demonstrate a student's technical writing and presentation skills and exercise the creation of demonstrative materials. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5500 - Topics in Professional Audio

Selected topical subjects to include live or studio sound recording, sound reinforcement, new technologies or practices in the audio industry. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 1

MSRA 5505 - Introduction to Audio Post Production

Reviews all aspects of audio synchronized with picture, including music, sound effects, narration, and dialog replacement. Topics studied with respect to film, video and multi-media. Cross-listed with MUSC 3505. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5510 - Topics in Recording Arts

Selected topical subjects to include live or studio sound recording, sound reinforcement, new technologies or practices in the audio industry. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5515 - History of 20th Century Film Music

This survey of the history of 20th century music in film will acquaint aspiring filmmakers and musicians with a history of the music, as well as concepts of film theory and the creative use of film music. Restricted to RCDA-MS majors within the College of Arts and Media. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5525 - Multimodal Interaction for Music

This course explores human-computer interaction in music composition and performance. Students will learn to program and use open-source hardware to build novel and creative musical interfaces and instruments. Restriction: Restricted to Graduate Students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5530 - Live Sound Reinforcement

This course focuses on the basic elements of sound reinforcement: acoustics, equalization, equipment and mixing techniques. The major emphasis is the production of the final sonic product. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5535 - Sound Effects & Foley for Visual Media

Techniques for recording sound effects in the field and recording Foley in the studio. Use of library effects. Use of mixing techniques and plug-ins to create more complex sounds. Cross-listed with MUSC 4535. Prereq: MSRA 5505. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5545 - Music Editing in Visual Media

Music editing for film and television. Spotting notes, temp tracks, cue sheets, scoring session management, dubbing stage fixes, and Performing Rights Artists notes. Cross-listed with MUSC 3545. Prereq: MSRA 5505. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5550 - Audio Production III

Advanced studies in sound recording and reinforcement, aesthetics and techniques of multi-track analog and digital recording and stereo imaging. Team lab recording projects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5555 - Dialogue Editing & Mixing for Visual Media

Dialogue editing and mixing for film and television. Recording Voiceover, Automated Dialogue Replacement, Group ADR, Efforts. Noise-reduction, mix levels, compression, limiting, EQ and use of reflected sound. Cross-listed with MUSC 3555. Prerequisite: MSRA 5505. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5560 - Mastering & Advanced Digital Audio

A study and practice of the art of mastering. Topics covered include: history, monitoring, signal flow, metering, jitter, audio restoration, limiting, creating a CD pre-master, & mastering for new media. Students will get practical experience mastering their own projects. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5565 - Re-recording Mixing for Visual Media

Techniques for mixing dialogue, ADR, music, sound effects, background ambiences and Foley. Different level standards and deliverables. Cross-listed with MUSC 4545. Prereq: MSRA 5535 or MSRA 5555. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5575 - Graduate Surround Sound

This lecture-lab course deals with surround sound in film, digital TV and DVD's. Topics include monitoring, microphone techniques, recording, mixing, mastering, delivery formats and psychoacoustics. Students work on two lab projects in the semester. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5576 - Surround Sound II

Students will work on advanced surround sound projects and study mixing aesthetics, high-definition technology and authoring. Students will have advanced knowledge of these topics and produce professional, competitive material for their demo. Prereq: MSRA 5550, 5575 and 5505, or permission of instructor. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MSRA 5580 - Graduate Audio Seminar I

Faculty and majors of the music engineering program assemble to discuss and demonstrate issues of artistic and technical applications of recording technology. Student projects, faculty, and guest lectures provide topical focus. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

MSRA 5581 - Graduate Audio Seminar II

Capstone project based course in which students complete professional quality projects in music production and/or post production. Students refine their engineering skills and develop new skills required for integration in the music industry such as portfolio design and resume development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5590 - Graduate Audio Production

Deals with advanced audio skills for music recording, including technical and artistic considerations. This is a required course for the MSRA degree. Max hours: 4 Credits. **Semester Hours:** 3 to 3

MSRA 5600 - Topics in Music

Various topics relating to the study of music performance, music technology and music business. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

MSRA 5605 - Audio Post Production II

Students will learn advanced Pro Tools techniques by designing, conceptualizing, and completing sound for a student film project. This interdisciplinary course prepares students for working relationships between Recording Arts, Film and Video areas and an entry level job in post production. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5820 - Digital Music Techniques

Studies the general principles and applications of digital music technology, emphasizing the function and operation of specific computer software. Topics include digital audio workstations, MIDI sequencers, digital signal processing programs, and distribution on optical discs and computer-based mediums. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 5840 - Independent Study for MSRA

Allows graduate students to pursue in-depth study of an audio-related topic, to be discussed with and approved by the Graduate Advisor. A final report or other tangible results will be determined on a case- by-case basis. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

MSRA 6214 - Forensic Audio Analysis

Students learn concepts through the application of techniques related to audio enhancement, digital media authentication, acoustic analysis, and automatic speaker recognition. The acquisition and analysis of digital evidence applying reliable methods prepares students for forensic audio analysis in the laboratory. Coreq: MSRA 6254 and admittance to Certification in Forensic Audio Analysis Program required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 6224 - Forensic Video and Image Analysis

Students learn concepts through the application of techniques related to forensic video collection and image enhancement, authentication, photogrammetry, and comparison. The acquisition and analysis of digital evidence applying reliable methods prepares students for working on forensic imagery in the laboratory. Coreq: MSRA 6264 and admittance to Certification in Forensic Video and Image Analysis Program required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 6254 - MATLAB for Forensic Audio Analysis

Advanced application of MATLAB for the forensic analysis of audio will be presented including file access, FFT and waveform plotting, and signal detection. Through the exploration of correlation and using mean quadratic difference students will be prepared for media authentication. Coreq: MSRA 6214 and admittance to Certification in Forensic Audio Analysis Program required. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MSRA 6264 - MATLAB for Forensic Video and Image Analysis

Advanced application of MATLAB for the forensic analysis of images will be presented covering image processing and analysis techniques. Through exploring analyses such as Photo Response Non-Uniformity and the Bi-Dimensional DFT, students are prepared for image authenticity examinations. Coreq: MSRA 6224 and admittance to Certification in Forensic Video and Image Analysis Program required. Max hours: 1 Credit. **Semester Hours:** 1 to 1

MSRA 6510 - Graduate Audio Studies Pedagogy

Surveys available resources for audio education. Interdisciplinary materials in physics, acoustics, engineering, music, broadcast, medicine, psychology, multi-media, theater, and film or video are reviewed. Emphasis on design and development of new methods and materials are pursued. (MSRA graduate students only.) Prereq: MUSC 5000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MSRA 6550 - Sound Design

Deals with designing sound for live theater, film, video, television, theme parks, games and soundscapes. Focuses on using technology to achieve specific esthetic aspects of audio production. This is accomplished through lectures, listening assignments, research and lab practice. (For graduate students only.) Max hours: 4 Credits. **Semester Hours:** 4 to 4

MSRA 6950 - Thesis in Professional Audio

With the guidance of a thesis advisor, each candidate for the MSRA degree select an approved topic for scholarly review, research and publication. The approved materials are evaluated for written and oral defense. Prereq: MUSC 5000, 5590, 6510, 6580, 6530. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MSRA 6951 - Professional Audio Portfolio Thesis

With the guidance of a portfolio advisor, each candidate for the MSRA degree produce specified documentation and audio materials that reflect the career intentions of the candidate. A completed "Show kit" or professional "Demo" of the candidate's specialty are produced. The approved materials are evaluated for written, audio and oral defense. Max hours: 4 Credits. **Semester Hours:** 4 to 4

MSRA 6954 - Research Thesis in Media Forensics

Students work closely with their thesis advisor in selecting a topic for original research and scientific publication. This capstone project creates an area of specialty for MSRA-MF degree candidates. Approved materials are evaluated through report submission and oral defense. Max hours: 4 Credits. **Semester Hours:** 4 to 4

Religious Studies

RLST 1010 - Greek I: Biblical

Intended for students of languages, religious studies, and philosophy. Introduces the forms and syntax of Greek so that in the 13th week students will be able to read about 85% of the New Testament in the original language. Cross-listed with GREK 1010. Max hours: 5 Credits.

Semester Hours: 5 to 5

RLST 1610 - Introduction to Religious Studies

Religion is a complex phenomenon which involves social norms, beliefs and fears, and overarching world view. Religious experiences are among the most profound an individual can have. The course examines religious phenomena from various perspectives, including philosophical, historical, psychological, anthropological, political, sociological, the symbolic and ritual. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH3 **Semester Hours:** 3 to 3

RLST 2660 - World Religions

Provides an introduction to the basic beliefs and concepts of the world's great religious traditions. Covers the history, development, belief patterns, and institutional forms of the world's religions, including Judaism, Zoroastrianism, Christianity, Islam, Hinduism, Buddhism, Confucianism, Taoism and Shintoism. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH3 **Semester Hours:** 3 to 3

RLST 2680 - The American Indian Experience

Surveys the relationships between Indian and non-Indian peoples, particularly in the context of the unique interaction between tribes and the federal government. Cross-listed with ETST 2606. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 2700 - The Bible as Literature

Introduces students to biblical literature. Selections from the various genres of writing in Hebrew (history, wisdom, prophecy, literature) are read and discussed, as well as representative sections from the New Testament, including the gospels and the writings of Paul. Cross-listed with ENGL 2520. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3000 - Judaism, Christianity and Islam: Affinity and Difference

Judaism, Christianity and Islam have much in common, beginning with their common patriarch Abraham. But there are also elements in each that are unrecognizable from the perspectives of the other two. This course will trace the relationships among the Children of Abraham across history and in today's turbulent world. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3060 - History of Early Christianity

History of the rise of Christianity and the decline of paganism in the Roman Empire from the birth of Jesus of Nazareth to ca. 500 C.E. Special emphasis on social, historical, legal, and cultural context of Christianity's rise and paganism's decline. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3100 - Islamic Politics and Culture

Comprehensive, in-depth study of Islam and Muslims. Islam is viewed as a "way of life" with social, economic, psychological, spiritual, and political implications. Among topics to be examined are: women in Islam, Jihad, fundamentalism, Islamic movements, Islam and the West. Cross-listed with PSCI 4165. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3120 - Islamic Traditions

Examines birth and history of Islam, its evolution from beginning to current trends and issues. Covers core beliefs, practices, differences between Sunni and Shi'a sects, and relationship to other Western religions. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3300 - Shamanic Traditions

Explores shamanic religious traditions across the world. This form of religion, involving spiritism, animism, trance states, and "mind power," is the oldest and most widespread religion in world history. Cross-listed with ETST 3300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3410 - Asian Philosophies and Religions

We in the Western world encounter a vastly different world, a radically different "universe of meaning," when we examine the traditions of the East. Even what we tacitly assume to be "real" is claimed by the Hindus and Buddhists of India to be a grand illusion. The world of China is, again, very different from India. An examination of Tibetan and Japanese religious forms will conclude our study of Asian thought. Cross-listed with PHIL 3410. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3486 - Renaissance and Reformation

Explores the late 13th through middle 17th centuries when European art and culture changed dramatically, and when Europe was torn by explosive ideological conflicts and religious upheaval. Cross-listed with HIST 3486. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3500 - Religions of India

Examines the transcendentalist philosophy of India, which rests at the foundation of the great Eastern religious traditions of Hinduism and Buddhism. The Indian ideas of God, the soul, time, the nature of the universe, and its ultimate goal are examined. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3660 - Chinese Philosophy and Culture

China is a fascinating world with its own characteristic orientation to philosophical questions. Chinese thinkers produced the "Flowering of a Hundred Schools of Thought" in the Axial Age, the same period of time in which philosophy was coming to birth in ancient Greece. Covers some of the Chinese schools, including Confucianism, Taoism, Mohism, Legalism, Chinese "Logic," and the later schools of Neo-Confucianism, Neo-Taoism and Chinese Buddhism. Cross-listed with PHIL 3981. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3720 - Religious Narratives

Investigates the language and structure of religious discourse in Western literature. Welcomes interdisciplinary and comparative perspectives with a focus on cultural constructions of the sacred. Cross-listed with ENGL 3520. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3740 - Biblical Traditions: Old Testament

Investigates the history and nature of the Biblical text. Follows the tradition of critical scholarship beginning in the Enlightenment era and continued down to the present day, sometimes entitled "Secular Humanism." Topics include theories of authorship of the Torah, its general nature and content; the historical books of the Bible, the Prophets, and the Wisdom Literature. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3760 - Biblical Studies: New Testament

Examines the books of the New Testament from a scholarly, historical-critical perspective, which views it as a historically and culturally conditioned text, reflecting the beliefs and attitudes of the authors who produced it. The course covers the canonical gospels, letters, and other writings of the New Testament. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3770 - Archaeological Discoveries Relating to the Bible

Examines the revolutionary impact of archaeology on Biblical Studies. Among these discoveries are Egyptian, Mesopotamian, and Canaanite texts, the Dead Sea Scrolls, and the Gnostic texts. Through these investigations, the Bible will be placed in its appropriate historical, literary and cultural context. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 3800 - Spirituality and Ecology in Global Societies

This course will examine the historical and contemporary attitudes and actions of religion in responding to the societal impacts of environmental concerns. We will investigate four worldviews in particular: indigenous traditions, Christianity, Judaism and Buddhism, and also consider how these traditions interact with public policy debates and their position on social justice and environmental issues. Religions both create and mitigate conflict. This course will consider ethical and moral approaches, philosophical principles and social movements including ecofeminism and ethics to provide tools for dialogue and critical thinking around ecological challenges. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4000 - Religion and Cultural Diversity

Religion is one of the key elements which creates multiculturalism. This course explores issues in religion and religious identity in contemporary America, including Native American spiritual traditions, Jewish-American traditions, Muslim-American traditions, Asian-American traditions, the African-American Pentecostal movement, and the growth of the Black Muslim movement. Attention is also given to the question of gender issues, as the traditional model for gender roles was formulated, in part, from a religious basis. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4010 - Comparative Religious Systems

A cross-cultural analysis of religious belief and behavior. Emphasis is placed on religions found among non-Western cultural groups and includes consideration of how major religions of the world are manifested on local levels. Cross-listed with ANTH 4130, 5130, RLST 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4020 - Sociology of Religion

This course introduces students to the nature and functions of religion in society, emphasizing western religions in the U.S. Students will develop and apply an understanding of classic and modern sociological theories of religion to current events and disciplinary developments. Cross-listed with SOCY 4610, SOCY 5610, RLST 5020. Prereq: Junior or Senior standing or permission from instructor. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4030 - Race, Religion and Belonging in the United States

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images?as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Cross-listed with ETST 4030, ETST 5030, RLST 5030, HIST 4209 and HIST 5029. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4040 - Psychology of Religion

Examines the theories developed by some of the great names in the field of psychology and their approaches to religion. Questions addressed include why people become religious, how religion functions in their lives, religious experience and assessment of the validity of religious claims. Key theorists studied include: William James, Sigmund Freud, Carl G. Jung, Abraham Maslow and Erich Fromm. Cross-listed with RLST 5040. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4060 - Philosophy of Religion

Nature of religion and methods of studying it. Cross-listed with HUMN 5600, PHIL 4600, 5600, RLST 5060, and SSCI 5600. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4070 - Western Religious Thought

Focuses on philosophers and theologians who have contributed to the evolution of the three great religious traditions of the West: Judaism, Christianity and Islam. Targets thinkers from three periods: the ancient or formative era, the medieval era, and the contemporary era. Note: Specific philosophers chosen may vary in different semesters. Cross-listed with PHIL 4710. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4080 - Eastern Religious Thought

Parallels the course in Western religious thought. The great religious traditions of the East, including Hinduism, Buddhism, Confucianism, and Taoism, are examined as they are presented in the writings of key philosophical representatives of each tradition. Cross-listed with PHIL 4720. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4100 - Special Topics in Religion

This special topics course allows for a variety of subjects to be explored in different semesters, including such issues as the nature of religious experience, communication with the divine, specific historical themes and events in religion. Term offered: spring. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

RLST 4160 - Mysticism

Explores the mystical strains within the world's great religious traditions. Jewish, Christian, and Islamic mystics did not always express the same beliefs and attitudes as mainstream adherents. When mystics are placed side-by-side, amazing similarities appear. One cannot always tell whether a given mystical statement is Hindu, Jewish, Sufi, or Christian. This class examines these mystical traditions, East and West. Cross-listed with RLST 5160. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4300 - Myth and Symbol

Approaches the field of classical Greek mythology and religion from the perspective of Jungian archetypal theory. The deities of the ancient Greeks are presented as archetypal patterns with universal correlates elsewhere in world religions. A foundation in C. G. Jung's archetypal theory will be offered to ground the course material. Cross-listed with RLST 5300. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4320 - Spirituality in the Modern World

Examines the issue of spiritual currents in the modern world. Joseph Campbell claimed that Western culture long ago lost an active sense of the sacred and that the traditional religions have not been the spiritual center for the vast majority of moderns for centuries. This class looks at the modern spiritual awakening in Shamanism, Eastern thought, the New Age movement, the men's movement, paganism and Goddess religion, and the revival of traditional religious forms in recent decades. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4340 - The Hero's Journey

The myth of the hero's journey serves as a metaphor for the vicissitudes life puts each of us through. The hero or her represents the ego-self who undertakes the journey--a grand adventure into the realm of the unknown--to seek the treasure. He or she is greatly transformed by the process, ultimately into the great self, who wins the boon to share with all

humanity. Versions of the story are found all over the world, such as in the sagas of Gilgamesh, Odysseus, Psyche, King Arthur, Dorothy of Oz, and Luke Skywalker from a galaxy far, far, away. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4360 - Freudian and Jungian Perspectives in Dream Analysis

Focuses on the phenomenon of dreams in a way that differs distinctly from the traditional approach to the subject in the field of psychology. "Spiritual" approaches to dreams are examined, as well as some major theorists on dreams, especially the work of Sigmund Freud and C. G. Jung. Cross-listed with RLST 5360. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4400 - Differing Concepts of God

God, Gods, and Goddesses have been imagined in many different modes, forms, aspects, and guises throughout human history. This course investigates Paleolithic models of God, the Great Goddess of the Neolithic era, the Gods of mythological traditions, Biblical God, the abstract God of the philosophers, the God of the pantheists, the deists, and the God of the mystics. Cross-listed with RLST 5400, PHIL 4650 and 5655. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4420 - Goddess Traditions

Explores the many forms which Goddesses have assumed through history, including the Neolithic Great Mother and her heiresses in the ancient Mediterranean cultures, such as: Isis, Ishtar, Demeter, Hecate, Aphrodite, Artemis, Athena and others, and their parallels in India. Goddess traditions have encompassed a full spectrum from virgins to Great Mothers to dark underworld Goddesses of death and destruction. Cross-listed with RLST 5420 and WGST 4420/5420. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4440 - Concepts of the Soul

Asks the questions: What is the nature of the human being? What makes us "human?" Do humans have a "soul?" What is its nature? Is it different from the "spirit?" What is its ultimate fate? Examines the various theories put forward by philosophers of both Eastern and Western traditions. Cross-listed with RLST 5440 and PHIL 4470, 5470. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4460 - Death and Concepts of Afterlife

Examines how the major religious traditions approach the issue of death. Where the Egyptians were fascinated by death, their Mesopotamian and Hebrew neighbors saw no kind of experience continuing after death. Concepts of the Final Judgment Day and the end of the world follow in Zoroastrianism, Christianity, and Islam, while Indian religions developed a

sophisticated theory of reincarnation and the "art of dying." Finally, we will turn to Chinese belief in ancestral spirits. Cross-listed with RLST 5460. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4462 - Islam in Modern History

This course studies Islamic thought and practice over the last two centuries in terms of major historical processes that have operated at local, national, and global scales. Cross-listed with RLST 5462, HIST 4462, HIST 5462. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4480 - Perspectives on Good and Evil

Examines "problem of evil" as formulated in the philosophical tradition. Presents classical formulation of the problem, traditional solutions & classical critiques of each answer. Considers perspectives of various religious orientations, which deal differently with the question of suffering. Cross-listed with PHIL 4480/5480, RLST 5480. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4500 - Religion and Politics

Exploration of: (1) theoretical perspectives on the relationship between religion and politics; (2) causes of and justifications for the historical development of the Western separation of "church and state;" (3) contemporary responses to and analyses of this separation; and (4) several current debates about public policy in America that reveal tensions between these two spheres. Cross-listed with PSCI 4057, 5057 and RLST 5500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4710 - Women and Religion

A sociological exploration of the contemporary roles of women in religion. Course examines American and world religious groups with an eye to women's involvement. Considers how women have changed these traditions as they take on leadership roles and discusses the tensions that arise within these traditions as a result of their expanded participation. Cross-listed with HUMN 5710, SSCI 4710/5710, WGST 4710/5710, RLST 5710. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4730 - Whores and Saints: Medieval Women

Studies how women are presented in texts, as well as works by women. Investigates the roles open to women and societal attitudes toward women, who were considered seductresses, saints, scholars and warriors in the middle ages. This course assumes that students have completed at least 9 hours of literature coursework. Cross-listed with ENGL 4510/5510, RLST 5730 and WGST 4510/5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4840 - Independent Study: RLST

Various topics in religious studies pursued in independent research. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

RLST 4850 - Family Systems Therapy, Religion and Spirituality

This course examines how the intersection between different religious and spiritual frameworks affects family systems. A strengths-based ecological perspective, family therapy theories and family systems theories will be used to understand religious and spiritual frameworks in working with families in schools and communities. Cross-listed with HDFR 4850. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

RLST 5030 - Race, Religion and Belonging in the United States

Race/ethnicity and religion are conconstitutive social and cultural formations that have played a fundamental part in determining the boundaries of belonging of the United States. In this course, students will interrogate when, why and how race/ethnicity and religion have been used to delineate borders, determine citizenship, navigate legal classifications, dictate social mobility, and regulate economic possibilities. We will analyze both primary sources ?such as sermons, reality TV shows, court cases and graphic images?as well as scholarly writing to explore how formations of race and religion have shaped notions of belonging in the US nation?state, thereby constructing the boundaries of the state itself. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ETST 4030, ETST 5030, RLST 4030, HIST 4209 and HIST 5029. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5040 - Psychology of Religion

Examines the theories developed by some of the great names in the field of psychology and their approaches to religion. Questions addressed include why people become religious, how religion functions in their lives, religious experience and assessment of the validity of religious

claims. Key theorists studied include: William James, Sigmund Freud, Carl G. Jung, Abraham Maslow and Erich Fromm. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4040. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5060 - Philosophy of Religion

Nature of religion and methods of studying it. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5600, PHIL 4600, 5600, RLST 4060, and SSCI 5600. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5160 - Mysticism

Explores the mystical strains within the world's great religious traditions. Jewish, Christian, and Islamic mystics did not always express the same beliefs and attitudes as mainstream adherents. When mystics are placed side-by-side, amazing similarities appear. One cannot always tell whether a given mystical statement is Hindu, Jewish, Sufi, or Christian. This class examines these mystical traditions, East and West. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4160. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5300 - Myth and Symbol

Approaches the field of classical Greek mythology and religion from the perspective of Jungian archetypal theory. The deities of the ancient Greeks are presented as archetypal patterns with universal correlates elsewhere in world religions. A foundation in C. G. Jung's archetypal theory will be offered to ground the course material. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4300. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5360 - Freudian and Jungian Perspectives in Dream Analysis

Focuses on the phenomenon of dreams in a way that differs distinctly from the traditional approach to the subject in the field of psychology. "Spiritual" approaches to dreams are examined, as well as some major theorists on dreams, especially the work of Sigmund Freud and C. G. Jung. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4360. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5400 - Differing Concepts of God

God, Gods, and Goddesses have been imagined in many different modes, forms, aspects, and guises throughout human history. This course investigates Paleolithic models of God, the Great Goddess of the Neolithic era, the Gods of mythological traditions, Biblical God, the abstract God of the philosophers, the God of the pantheists, the deists, and the God of the mystics.

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4400, PHIL 4650 and 5655. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5420 - Goddess Traditions

Explores the many forms which Goddesses have assumed through history, including the Neolithic Great Mother and her heiresses in the ancient Mediterranean cultures, such as: Isis, Ishtar, Demeter, Hecate, Aphrodite, Artemis, Athena and others, and their parallels in India. Goddess traditions have encompassed a full spectrum from virgins to Great Mothers to dark underworld Goddesses of death and destruction. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4420 and WGST 4420/5420. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5440 - Concepts of the Soul

Asks the questions: What is the nature of the human being? What makes us "human?" Do humans have a "soul?" What is its nature? Is it different from the "spirit?" What is its ultimate fate? Examines the various theories put forward by philosophers of both Eastern and Western traditions. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4440 and PHIL 4470, 5470. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5460 - Death and Concepts of Afterlife

Examines how the major religious traditions approach the issue of death. Where the Egyptians were fascinated by death, their Mesopotamian and Hebrew neighbors saw no kind of experience continuing after death. Concepts of the Final Judgment Day and the end of the world follow in Zoroastrianism, Christianity, and Islam, while Indian religions developed a sophisticated theory of reincarnation and the "art of dying." Finally, we will turn to Chinese belief in ancestral spirits. Restriction: Restricted to Graduate level students. Cross-listed with RLST 4460. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5462 - Islam in Modern History

This course studies Islamic thought and practice over the last two centuries in terms of major historical processes that have operated at local, national, and global scales. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with RLST 4462, HIST 4462, HIST 5462. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5480 - Perspectives on Good and Evil

Examines "problem of evil" as formulated in the philosophical tradition. Presents classical formulation of the problem, traditional solutions & classical critiques of each answer. Considers perspectives of various religious orientations, which deal differently with the question of

suffering. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4480/5480, RLST 4480. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5500 - Religion and Politics

Exploration of: (1) theoretical perspectives on the relationship between religion and politics; (2) causes of and justifications for the historical development of the Western separation of "church and state;" (3) contemporary responses to and analyses of this separation; and (4) several current debates about public policy in America that reveal tensions between these two spheres. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PSCI 4057, 5057 and RLST 4500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5710 - Women and Religion

A sociological exploration of the contemporary roles of women in religion. Course examines American and world religious groups with an eye to women's involvement. Considers how women have changed these traditions as they take on leadership roles and discusses the tensions that arise within these traditions as a result of their expanded participation.

Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5710, SSCI 4710/5710, WGST 4710/5710, RLST 4710. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5730 - Whores and Saints: Medieval Women

Studies how women are presented in texts, as well as works by women. Investigates the roles open to women and societal attitudes toward women, who were considered seductresses, saints, scholars and warriors in the middle ages. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with ENGL 4510/5510, RLST 4730 and WGST 4510/5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RLST 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Research & Eval Methods

RSEM 4001 - Special Topics

Specific topics vary from semester to semester. Cross listed with RSEM 5001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 4100 - Research and Statistics in Families and Human Development

This course will prepare students to read, critique, and conceptualize research on families and human development. Statistical concepts will be taught along with examination of statistical studies. The second half emphasizes qualitative studies employing ethnographic and case study methodologies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 4120 - Introduction to Research Methods

This is a survey course that examines the purposes of research, the methods of quantitative, qualitative, and mixed research, and the processes involved in research studies. The primary aims of this course are to improve your skills as an informed consumer of research and to provide you with the skills to conduct your own research. Cross-listed with RSEM 5120. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5001 - Special Topics

Specific topics vary from semester to semester. Cross listed with RSEM 4001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5050 - Classroom Assessment

This course strengthens educator classroom assessment practice. It provides students with a foundational understanding of quality measurement practices to support evaluation of assessment instruments and tasks, determination of appropriate scoring approaches, and interpretation of state and district assessment results. It also deepens students' formative assessment practice supported by practical strategies and tools. Finally, it facilitates student integration of formative and summative uses of assessment with instruction and planning. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 5080 - Research In Schools

Provides teachers with the competencies necessary for examining their professional experiences using formal and informal methods of inquiry. Teachers become more reflective practitioners who investigate questions that arise from their work in schools. The course also prepares teachers to critique published research in a thoughtful manner. The intended audience for the course is beginning and experienced P-12 teachers. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 5100 - Basic Statistics

A first-level course on the use and interpretation of descriptive and inferential statistics. Topics covered include: frequency distributions, measures of central tendency and measures of variability; shapes of distributions; standard scores; scattergrams, correlation and regression; and t-tests. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 5110 - Introduction to Measurement

A first-level course that examines the nature and purpose of psychological measurement. Particular attention is paid to the concepts of reliability, validity, norms, interpretation of scores, response sets, fairness in testing, and norm-referenced vs. criterion-referenced interpretation of scores. A variety of instruments that are used to measure human attributes and behaviors are studied. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 5120 - Introduction to Research Methods

This is a survey course that examines the purposes of research, the methods of quantitative, qualitative, and mixed research, and the processes involved in research studies. The primary aims of this course are to improve your skills as an informed consumer of research and to provide you with the skills to conduct your own research. Cross-listed with RSEM 4120. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5600 - Issues in Assessment Development

This is the first course of a three-course series for a Classroom Assessment Certificate. The course focuses on developing the conceptual knowledge and technical skills required to help K-12 practitioners to develop valid, reliable, and fair assessment of student learning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5610 - Formative and Summative Assessment in the Classroom

This is the second course of a three-course series for a Classroom Assessment Certificate. The course focuses on developing conceptual knowledge and technical skills required to develop and implement formative and summative assessments to support student learning. Prereq: RSEM 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5620 - Analyzing, Using, and Reporting Assessment Results

This is the third course of a three-course series for a Classroom Assessment Certificate. The course focuses on developing conceptual knowledge and technical skills required to develop and implement formative and summative assessments to support student learning. Prereq: RSEM 5610. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 5800 - Workshop: Topics in Research and Evaluation Methodology

Topics and credit hours vary from term to term. Often workshops address a current topic in research, evaluation, or measurement by considering its scholarly foundations and its application to schools and other educational settings. Repeatable. Max Hours: 12 Credits.

Semester Hours: 1 to 4

RSEM 5840 - Independent Study: RSEM

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

RSEM 5910 - Practicum in Research and Evaluation Methodology

Supervised work in projects that provide experience in data analysis, research, measurement, or evaluation. Requires a minimum of 75, 150, 225, or 300 clock hours under supervision (for 1, 2, 3, or 4 credit hours, respectively). Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 4

RSEM 6200 - Single Case Research Design for Education

This course provides an overview of Single Case research Design (SCRD) within educational settings. The course will describe single case designs (SCD), specify the types of questions that SCD's are designed to answer, discuss the internal and external validity of SCD's, outline SCD standards, and describe implementation of different SCR D's. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 6500 - Teacher as Researcher

Taken concurrently with Contextual Curriculum II, this course provides opportunities to engage in inquiry while analyzing professional experiences within their classroom context, sharing data/results from an action research project and critiquing and synthesizing published educational research. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 6950 - Master's Thesis

A master's thesis is part of the degree track options. Credit hours, topic, and workload are determined by the student's advisor. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 4

RSEM 7000 - Doctoral Seminar in Research Methods

Designed for students beginning doctoral work, explores conceptual and practical bases for doing and evaluating educational research. The chain of reasoning linking the conceptualization of a research problem, the posing of questions in a social process of inquiry, and the collection and interpretation of evidence is examined through the use of examples. Restriction: Restricted

to EDHDPHD, LDRE-EDd, EDLI-PhD and SPSY-PsyD majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7001 - Applied Research Methods I

Introduces students to principles of quality research design, and provides a conceptual and hands-on procedural introduction to quantitative and qualitative methods common in education-related research. Takes an explicit focus on understanding and mitigating potential biases in research methods and design. Restriction: Restricted to LDRE-EDD students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7002 - Applied Research Methods II

Prepares students with conceptual knowledge and procedural skills of designing quality, applied research from critical and pragmatic perspectives. Focus on quantitative analysis methods, including survey and assessment item development. Students continue deeper review of extant literature for intended dissertation topic. Restriction: Restricted to LDRE-EDD students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7003 - Applied Research Methods III

Content will focus on qualitative data collection and analysis methods, and mixed methods design including program evaluation and improvement research. Students will work with faculty on development of dissertation in practice design. Restriction: Restricted to LDRE-EDD students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7010 - Educational Assessment And Measurement

This advanced course incorporates foundational knowledge and application of assessment and measurement tools in school settings. Foundational concepts are utilized to better understand student achievement and growth indicators, and inferences about school and educator effectiveness; survey measures are also addressed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7050 - Methods of Survey Research

Covers the purposes and methods of survey research. Topics included are: goals and uses of survey research, data collection methods, questionnaire and interview protocol design, reliability and validity of data collection methods, sampling, ways to reduce error in data collection and sampling, data analysis techniques commonly used in survey research studies, interpreting and reporting results, and ethical issues. Students design and conduct a survey as part of the course requirements. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 7080 - Methods of Qualitative Inquiry

Prepares graduate students to conduct field research employing qualitative methods and perspectives. Students become familiar with evolving theoretical and methodological perspectives in qualitative research drawn from anthropology, clinical psychology, sociology and education. Students apply techniques of qualitative data collections and analysis in a pilot investigation. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 7100 - Advanced Methods of Qualitative Inquiry

An advanced seminar directed at individuals who have completed an introductory course in methods of qualitative research. Topics included are qualitative data collection, data analysis, and writing about data. Students collect and analyze data. Prereq: RSEM 7080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7110 - Intermediate Statistics

Continuation of RSEM 5100, covering more advanced methods of analyzing data, with an emphasis on the use and interpretation of descriptive and inferential techniques. Topics covered are one-way and two-way analysis of variance; power; multiple comparisons; factorial designs and factorial ANOVA; partial correlation, multiple correlation and regression; analysis of covariance; and selected use of packaged statistical programs (SPSS). Prereq: RSEM 5100. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 7120 - Advanced Methods in Quantitative Inquiry and Measurement

Covers advanced topics in quantitative design and analysis, including advanced measurement topics. Topics include: specific types of design used in experimental, quasi-experimental, correlational, and survey research; multivariate ANOVA, ANCOVA and MRC; factor and trend analyses; classical test theory; and IRT approaches. Students analyze their own data using techniques presented in the course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

RSEM 7130 - Advanced Measurement using Item Response Theory

This course will consider theory and methods for the educational and psychological measurement of latent variables using item response theory. Students will understand and be able to apply concepts from item response theory, specifically the Rasch model, to understand, evaluate, and construct measures. Recommended students have Introduction to Statistics and a survey design course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7140 - Management & Secondary Analysis of Large Datasets

Large education, community, and health datasets are underutilized research resources, providing large samples and longitudinal data otherwise too costly and time-consuming to collect. Students will work in their discipline area to learn to access, manage, and appropriately

analyze extant datasets. Prereq: RSEM 7110 Intermediate stats or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7150 - Mixed Methods Research

This seminar is directed at individuals who have completed both qualitative and quantitative research courses and are interested in combining these in the mixed-method approach. Focus will be on developing the skills and knowledge needed to formulate mixed-methodological research questions in which quantitative and qualitative data collection, analysis and interpretational techniques are utilized simultaneously or sequentially. Prereq: RSEM 6100 and RSEM 7110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7200 - Ethnography

This course is designed for persons interested in studying the phenomenon of learning in family and community contexts. The course blends foundational readings in the learning sciences and the ethnography of education with "participant-observation" fieldwork. The fundamentals of ethics regarding studies involving human persons, building relationships with study participants, becoming an "observant participant," writing field notes, and co-authoring meaning with study participants will be covered. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7210 - Program Evaluation in Schools

This advanced course incorporates foundational knowledge and application of the topic of program evaluation as it applies to inquiry and decision making in schools and other educational settings. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7500 - Special Topics: Research and Evaluation Methods

Specific topics vary from semester to semester. Restriction: Restricted to graduate level students. Repeatable. Max hours: 12 Credits. **Semester Hours:** 1 to 6

RSEM 7700 - Multi-Level Data Analysis

Focus is on the analysis of nested data (e.g., students within classrooms and schools, public transportation users within cities) using HLM. Applications include multilevel multiple regression, growth models, and experimental designs. Familiarity with multiple regression and factorial ANOVA is required. Prereq: RSEM 7110 Intermediate Statistics or equivalent. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7800 - Intro to Structural Equation

This course assumes no prior experience with Structural Equation Modeling, and serves as both theoretical and practical introduction. We will relate SEM to participants' previous knowledge of multiple linear regression, then expand to examine correlated and causally related latent constructs. Prereq: RSEM 7110: Intermediate Statistics or equivalent, or instructor consent. Restriction: Restricted to Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RSEM 7840 - Independent Study: RSEM

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

Risk Management

RISK 1000 - RISK Intro to Risk Management and Insurance Careers

This course introduces students to the many and varied career opportunities in the risk management and insurance industry via visiting industry professionals and on site industry visits. The course meets 1 hour each week. No co-credit with RISK 1001. Max hours: 1 Credit. **Semester Hours:** 1 to 1

RISK 1001 - Careers in Risk Management

This course introduces high school students to the many and varied opportunities in the risk management and insurance industry via visiting professionals and on site industry visits. The course meets 1 hour each week. It is pass/fail. This course is equivalent to RISK 1000 Introduction to Risk Management and Insurance Careers in content. Note: Must be a high school student or recent high school graduate to enroll. CU Denver students cannot enroll. No co-credit with RISK 1000. Max hours: 1 Credit. **Semester Hours:** 1 to 1

RISK 3809 - Introduction to Risk Management

This course introduces students to the fundamentals of risk and risk management for businesses and individuals. Corporate risk management techniques covered range from insurance to enterprise risk management. Personal risks discussed range from unemployment to retirement. Coreq: FNCE 3000. Insurance carrier operations are also considered. Restriction: junior/senior standing required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 3949 - Experiential Learning in RMI Industry

This course connects students to risk management service providers through the Risk Management and Insurance (RMI) Program. The students will intern with a specific provider. The RMI program and faculty will supervise and monitor tasks and assignments, and coordinate with the providers to maximize the learning experience. Restriction: junior/senior standing required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4129 - Practical Enterprise Risk Management

Enterprise RM involves identifying the risks and opportunities faced by a firm, assessing them, developing and implementing a plan to address them, and then monitoring progress. Students will learn the basics of ERM while working with risk management professionals to develop and present such a plan to an ongoing business. Coreq: FNCE 3500. Cross-listed with RISK 6129. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4209 - Cyber Risk Management

Computer networks and the data that travels upon them are under constant and increasing attack. This course will focus on a discussion of how state and non-state actors utilize this form of asymmetrical warfare to infiltrate government and corporate networks, risk management responds and risk strategies apply. Cross-listed with RISK 4209. Restriction: junior/senior standing or instructor permission. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4309 - Strategic Risk Management

Strategic risk management (SRM) seeks to manage the risks inherent in a company's strategy, the risks to its plans to add value to its owners and society by raising its return on equity, allowing the company to compete successfully across a wider array of business environments, acting when its competitors cannot, and reducing its 'risk of ruin.' Because the future is unknown, SRM is charged with identifying and managing unknown uncertainties. The challenge of doing this makes for a fascinating course. Cross-listed with RISK 6309. Prereq: RISK 3809 and RISK 4809. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4409 - Employee Benefits and Workforce Risk Management

The course surveys an array of popular employee benefit programs to attract, protect, and retain valued employees. It also focusses on risk management programs that invest in human capital and address the downside risks of employing a workforce. Restriction: Junior or Senior standing. Cross-listed with RISK 6409 and MGMT 4460/6760. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4509 - Global Risk Management

This course is designed to study how risk is transferred globally. The course will include travel to London, which is the home to many of the world's largest insurers and reinsurers. While in London, we will visit and have presentations from insurance brokers, companies, Lloyds of London, and reinsurers. Prereq: One RISK course. Restriction: Junior or Senior standing. Cross-listed with RISK 6509. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4609 - Claims Management

This course will provide an overview of the claims process in the Property and Casualty Insurance world. Students will learn about basic claims handling for personal and commercial claims as well as how to determine coverage and legal issues. Prereq: RISK 3809 with a grade of at least C (GPA 2.0). Restriction: Junior/Senior standing required. Max hours: 3 Credits.

Semester Hours: 3 to 3

RISK 4709 - Life & Health Insurance

This course introduces students to life and health insurance concepts and policy types with an emphasis on insurance planning for individuals and businesses. The insurance industry and trends within it are also explored. Prereq: RISK 3809 and FNCE 3000 with a grade of at least C (GPA 2.0). Restriction: Junior/Senior standing required. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

RISK 4809 - Property & Casualty Insurance

Students learn the fundamentals and uses of personal and commercial property and casualty insurance, including cost and pricing issues. Insurance company financial management and current trends in the insurance industry are also explored. Restriction: Junior/Senior Standing, or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 4909 - Corporate Risk Management

This course provides an overview of the corporate risk management process. It considers the ways companies identify their risk exposures, the tools used to measure and mitigate those exposures including the latest developments in alternative risk transfer, and ultimately, how risk management adds value to the firm. Prerequisite: RISK 3809 with a grade of C or higher. Corequisite: FNCE 3500. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Cross-listed with FNCE 4909/6909 and RISK 6909. Max Hours: 3 Credits.

Semester Hours: 3 to 3

RISK 4950 - Special Topics: Cyber Risk Management & Cyber Warfare

This course will focus on the evolution of cybercrime, cyber warfare and cyber terrorism, how state and non-state actors utilize asymmetrical warfare to infiltrate government and corporate networks, to manage the risks associated with information technology and mitigate the effects of cybercrime and cyber warfare. Cross-listed with RISK 6800. Restriction: Restricted to students with Junior or Senior standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6129 - Practical Enterprise Risk Management

Enterprise RM involves identifying the risks and opportunities faced by a firm, assessing them, developing and implementing a plan to address them, and then monitoring progress. Students will learn the basics of ERM while working with risk management professionals to develop and

present such a plan to an ongoing business. Cross-listed with RISK 4129. Max hours: 3 Credits.
Semester Hours: 3 to 3

RISK 6209 - Cyber Risk Management

Computer networks and the data that travels upon them are under constant and increasing attack. This course will focus on a discussion of how state and non-state actors utilize this form of asymmetrical warfare to infiltrate government and corporate networks, risk management responds and risk strategies apply. Cross-listed with RISK 4209. Max hours: 3 Credits.

Semester Hours: 3 to 3

RISK 6309 - Strategic Risk Management

This course introduces strategic risk management, the process of managing the uncertain and unknown risks to a firm's plans to add value to its owners and society. Cross-listed with RISK 4309. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6409 - Employee Benefits and Workforce Risk Management

The course surveys an array of popular employee benefit programs to attract, protect, and retain valued employees. It also focusses on risk management programs that invest in human capital and address the downside risks of employing a workforce. Cross-listed with RISK 4409 and MGMT 4460/6760. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6509 - Global Risk Management

This course is designed to study how risk is transferred globally. The course will include travel to London, which is the home to many of the world's largest insurers and reinsurers. While in London, we will visit and have presentations from insurance brokers, companies, Lloyds of London, and reinsurers. Prereq: One RISK course. Cross-listed with RISK 4509. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6800 - Special Topics: Cyber Risk Management & Cyber Warfare

This course will focus on the evolution of cybercrime, cyber warfare and cyber terrorism, how state and non-state actors utilize asymmetrical warfare to infiltrate government and corporate networks, to manage the risks associated with information technology and mitigate the effects of cybercrime and cyber warfare. Cross-listed with RISK 4950. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6809 - Principles of Risk Management & Insurance

This course prepares students for advanced work in insurance and RM. The course first covers the nature of risk and risk fundamentals, insurer operations and insurance regulation. It then

considers the principal techniques of managing risk exposures and the basis of decision making in management of business and personal risks. Coreq: BUSN 6640 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6840 - Independent Study

Max hours: 3 Credits. **Semester Hours:** 3 to 3

RISK 6909 - Corporate Risk Management

This course provides an overview of the corporate risk management process. It considers the ways companies identify their risk exposures, the tools used to measure and mitigate those exposures including the latest developments in alternative risk transfer, and ultimately, how risk management adds value to the firm. Co-req: BUSN 6640. Max hours: 3 Credits. **Semester Hours:** 3 to 3

School Library Program

SCHL 4030 - Information Literacy

Teaching, assessment, and integration of information literacy skills. Reference collection development, policies and procedures, and use of and reference tools, including electronic resources. Emphasis is placed on standards-based collaborative planning and instruction with classroom teachers. Cross-listed with SCHL 5030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 4160 - Managing School Libraries

Case studies in the organization and administration of school library and instructional leadership of programs and projects. Topics include project management, personnel administration, budget development, management strategies, copyright and intellectual freedom. Cross-listed with SCHL5160. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 5030 - Information Literacy

Teaching, assessment, and integration of information literacy skills. Reference collection development, policies and procedures, and use of and reference tools, including electronic resources. Emphasis is placed on standards-based collaborative planning and instruction with classroom teachers. Cross-listed with SCHL 4030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 5040 - Information Storage and Utilization

Provides basic principles and practices of utilizing standard methods for organizing, accessing and storing information. Includes cataloging and classification in text-based and electronic systems. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SCHL 5100 - School Libraries in the Digital Age

An introduction to the School Library profession, including its history, standards, organizations, and current trends. Course focuses on foundational principles and roles of school librarianship, as well as methods for developing a culturally responsive resource collection, both print and electronic. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 5160 - Managing School Libraries

Case studies in the organization and administration of school library and instructional leadership of programs and projects. Topics include project management, personnel administration, budget development, management strategies, copyright and intellectual freedom. Cross-listed with SCHL 4160. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 5200 - Promoting Literature in Schools

Approaches the school library as a resource to promote literacy and development in children and young adults. Topics include genres of literature, methods for advising students towards appropriate reading and media resources, and the promotion of multiple literacies - information, new media, and transliteracy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCHL 5830 - School Library Workshop

Specific content and titles vary depending upon the particular school library skills addressed in the course. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 0.5 to 4

SCHL 5913 - School Library Field Experience

Field experiences in selected K-12 school libraries that meet a high professional standard. The course serves as a capstone experience for endorsement and master's degree plans and helps induct students into the School Library profession by bridging theory and practice. Max hours: 3 Credits. **Semester Hours:** 3 to 3

School Psychology

SPSY 2200 - Child and Adolescent Mental Health in Schools and Communities

Introduces students to child and adolescent mental health and treatment, with a focus on trends in children's mental health, evidence-based treatments for childhood mental health

challenges, and child mental health careers. Course includes an emphasis on school-based mental health practices. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 5010 - Introduction to Counseling in School Psychology

Provides an overview of the counseling theories relevant to the practice of school psychology and an understanding of the role of theory in practice. Includes consideration of legal/ethical issues and both the cultural and developmental context of the major theories. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 5600 - Behavior Analysis and Intervention

This course introduces knowledge and skills necessary for school psychologists to proactively address child problem behaviors. Content includes application of Positive Behavioral Support (PBS), functional behavior analysis and intervention, evaluation of behavior change. Relevant federal, state regulations are also addressed. Restriction: Restricted to SPSY majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 5800 - Workshop: Topics in School Psychology

Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 6

SPSY 5840 - Independent Study: SPSY

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

SPSY 5900 - School-Based Multicultural Interventions

The course will foster students' understanding and appreciation of diversity and its applications for school psychology practice, educational contexts, and mental health policy. Students will learn to evaluate and implement school-based mental health and educational interventions with a multicultural lens. Prereq: SPSY 6100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6100 - School Psychology: Professional and Legal Foundations

This course covers topics related to the practice of school psychology, both past and present, including legal/ethical obligations/issues, accreditation, certification/licensure, culturally competent practice, roles/responsibilities, and evaluation and accountability. Observation in schools and related settings is required. Prereq: Admission to School Psychology Program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6150 - Psychoeducational Assessment I

Focuses on assessment of cognitive ability, cognitive processes, and achievement in children and adolescents. Topics include selection, administration, and interpretation of ability and achievement tests; psychological report writing, and psychometric, historical, theoretical, and cultural issues in assessment. Test administration required. Restriction: SPSY PsyD: Restricted to SPSY PsyD majors within the School of Education and Human Development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6160 - Psychoeducational Assessment II

Focuses on the assessment of adaptive behavior, personality, and social-emotional functioning in children and adolescents. Topics include selection, administration, and interpretation of these types of measures; cultural considerations in psychological assessment, psychological report writing, and developing interventions. Test administration required. Prereq: SPSY 6150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6170 - Applied Developmental Science and Assessment

Examines theories and research in developmental psychology to provide a foundation for clinical services to children and families in applied settings. Includes coverage of developmental assessments and services for infants/toddlers. Prereq: SPSY 6150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6350 - School-Based Interventions: Children, Youth and Families

Provides theoretical and practice-oriented introduction to child therapy in schools. Weaves together skills and techniques essential to theory and implementation of psychotherapeutic techniques. Course activities compliment the systemic and group-based interventions examined in SPSY 6400. Prereq: RSEM 5110, COUN 5010, or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6400 - School-Based Interventions: Groups, Classrooms and Systems

Provides students with advanced study of research on and techniques of classroom and small group interventions. Includes instruction on the evaluation of intervention effectiveness. Systemic, school-wide interventions are addressed. Prereq: RSEM 5100, RSEM 5110, COUN 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6410 - Psychoeducational Assessment of Culturally and Linguistically Diverse Students

Prepares students to provide psychoeducational assessments to children who are culturally and/or linguistically diverse. Content includes differentiation of language disorders versus language acquisition, and developing recommendations for accommodations and interventions

to meet the unique psychoeducational needs of diverse children and youth. Prereq: SPSY 6150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6420 - Crisis Prevention, Planning and Intervention

Introduces students to crisis theory, prevention research, and intervention strategies. The course is designed for school mental health professionals interested in developing advanced crisis counseling and intervention skills sufficient for use in school settings. The course emphasizes the importance of practical hands-on opportunities for skills development. Prereq: COUN 5010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6450 - School-Based Consultation for Mental Health Professionals

A wide range of traditional or emerging consultation models emphasizing practical application of empirically-based approaches to advance the social or academic competence of students, classrooms, schools and districts. Hands-on experience supplement course content as students develop, refine, and practice their own eclectic consultation approach. Prereq: SPSY 6100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6500 - Affective Bases of Behavior and Psychopathology

This course provides students with advanced concentrated study of the affective bases of behavior, including affect, mood, and emotion. This course also includes coverage of psychopathology and the diagnosis of mental disorders. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6550 - Academic Interventions in School Psychology

Provides training in knowledge and skills for the use of educational intervention practices in school psychology, including the development, implementation, and evaluation of academic interventions in the areas of reading, math, and written language; curriculum based measurement and progress monitoring. Prereq: SPSY 6150. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6700 - Advanced Seminar in School Psychology

This course covers advanced topics related to the practice of school psychology including applying and interviewing for internship, certification/ licensure, capstone preparation and completion, and the development of a professional identity. Prereq: Prereq: SPSY 6911. Restriction: Restricted to School Psychology majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 6911 - School Psychology Practicum

Supervised practice in providing comprehensive psychological services to children in grades preschool to 12. Students are placed in public schools or affiliated school-related agencies and supervised by practicing, licensed school psychologists. Prereq: SPSY 5600, SPSY 6100, SPSY 6150, SPSY 6160 or consent of instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

SPSY 6915 - Practicum with Culturally and Linguistically Diverse Students

This school psychology practicum experience is focused on developing multicultural competencies with culturally and linguistically diverse students through either a cultural immersion experience in Mexico or a local practicum placement in a culturally and linguistically diverse setting. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPSY 6917 - Advanced Practicum in Psychological Assessment

Under faculty supervision provide psychological assessment services to clients in the UC Denver Student and Community Counseling Center. Prereq: SPSY 6150, SPSY 6160, and consent of the instructor. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPSY 6918 - Clinical Externship

Clinical experience under supervision of licensed mental health professionals. Students participate in assessment and/or intervention in a variety of settings. Note: All field placements must be approved by the SPSY Program Director in advance of registration. Prereq: SPSY 6911. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

SPSY 6930 - School Psychology Internship

Supervised experience in the practice of school psychology with children and adolescents in a school or clinic setting. Prereq: SPSY 5900, SPSY 6410, SPSY 6911, SPSY 6350, SPSY 6400, SPSY 6450, SPSY 6500, or instructor consent. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SPSY 7500 - Biological and Neuropsychological Bases of Behavior

Examines the biological basis of behavior emphasizing the relationship between the functions and structures of the brain including neuroanatomy, brain development, neurophysiology, neurochemistry, and psychopharmacology; and neuropsychological assessment principles. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 7980 - Clinical Supervision & Admin of Psych Services

Course prepares school psychologists to function in supervisory and administrative capacities in delivering mental health services. Content includes examination of clinical supervision theories,

models, techniques; focus on development of skills for administrative roles, and understanding organizations from a systems perspective. Prereq: SPSY 6918. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPSY 8980 - School Psychology Doctoral Capstone Project

The Capstone Project is a culminating component of the program. Production of a scholarly project that illustrates the student's understanding of relevant topics in school psychology, the scope of contemporary practice, and the various roles of the professional school psychologist. Prereq: SPSY 6911 and SPSY 6700. Restriction: Restricted to SPSY-PSYD majors within the School of Education and Human Development. Max hours: 2 Credits. **Semester Hours:** 2 to 2

Sci, Tech, Engineer & Math Ed

STME 4001 - Planning for Learning in Mathematics and Science

This course explores aspects of complex curriculum and instructional concepts through the lens of mathematics and science educators. A focus will include: Socio-cultural learning theory in Math and Science; standards-based instruction; instructional design; formative & summative assessment, and differentiation so that meaningful instruction becomes accessible to all students. Cross-listed with STME 5001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

STME 4051 - STEM Capstone: Secondary Education

This course provides Secondary STEM Education students with a capstone learning experience that integrates knowledge of STEM content, students, and school context into socially-just and culturally responsive practices. Cross-listed with STME 5051. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

STME 5001 - Planning for Learning in Mathematics and Science

This course explores aspects of complex curriculum and instructional concepts through the lens of mathematics and science educators. A focus will include: Socio-cultural learning theory in Math and Science; standards-based instruction; instructional design; formative & summative assessment, and differentiation so that meaningful instruction becomes accessible to all students. Cross-listed with STME 4001. Max hours: 3 Credits. **Semester Hours:** 3 to 3

STME 5051 - STEM Capstone: Secondary Education

This course provides Secondary STEM Education students with a capstone learning experience that integrates knowledge of STEM content, students, and school context into socially-just and culturally responsive practices. Cross-listed with STME 4051. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Science Education

SCED 2010 - Physical Science and Everyday Thinking

An introductory course in physical science course designed for non-science majors, emphasizing topics relevant to everyday life. The course focuses on major physical concepts and their implications for making sense of the world around us. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 4004 - Elementary Science Teaching

This course explores issues in elementary school science learning and teaching. Teacher candidates will develop knowledge of the nature of science and science content, engage in scientific inquiry, work to identify student conceptions, and plan and enact science instruction. Cross-listed with SCED 5004. Restriction: Professional Year Admission required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SCED 4050 - Introduction to Science Teaching and Learning

Focus on conceptual development, conceptual change, collaborative learning, students' conceptions of various topics in science, practical issues encountered in facilitating learning, managing the classroom, formative and summative assessment, and differentiating instruction in a collaborative environment. Seminar for Learning Assistants. Student must be serving as a Learning Assistant in the CU Denver LA program. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SCED 4400 - Theory and Pedagogy of Science Learning

Examines current issues, strategies, materials, and technology related to the teaching and learning of science at the middle and secondary school levels. Science curriculum, teachers' pedagogical content knowledge, and research in science education are investigated. Cross-listed with SCED 5400. Restriction: Professional Year Admission required. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SCED 4401 - Inquiry Science Pedagogy and Practices

An in-depth study of inquiry science pedagogy and practices and how inquiry science supports standards-based education to make science accessible to ALL learners. The course provides a review of research on pedagogy and practices that support student understanding, problem solving and creativity through the use of inquiry science. Prereq: Concurrent enrollment in an internship or permission of instructor is required. Cross-listed with SCED 5401. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5004 - Elementary Science Teaching

This course explores issues in elementary school science learning and teaching. Teacher candidates will develop knowledge of the nature of science and science content, engage in scientific inquiry, work to identify student conceptions, and plan and enact science instruction. Cross-listed with SCED 4004. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SCED 5050 - Introduction to Science Teaching and Learning

Focus on conceptual development, conceptual change, collaborative learning, students' conceptions of various topics in science, practical issues encountered in facilitating learning, managing the classroom, formative and summative assessment, and differentiating instruction in a collaborative environment. Seminar for Learning Assistants. Student must be serving as a Learning Assistant in the CU Denver LA program. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SCED 5340 - Equity & Culture in Science Education: Local/Global

This course examines literature in science education related to issues of culture and equity. Topics will be framed by an understanding of equity in diverse classrooms and how it informs research, curriculum and instruction. Cross-listed with ENVS 5340. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5350 - Issues and Trends in Science Education

Explores the current issues and trends in science education related to theory, pedagogy, practices, curriculum, and other contemporary topics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5360 - Physics Teaching and Learning

In this course, we will explore how people learn physics, and how physics is and can be taught. We will read literature in physics, physics education research, education, psychology, and cognitive science and apply it to your physics teaching. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5365 - Physics Teaching as Research

In this course, you will research your teaching of physics, with the explicit goals of improving your teaching practice and improving student learning of physics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5400 - Theory and Pedagogy of Science Learning

Examines current issues, strategies, materials, and technology related to the teaching and learning of science at the middle and secondary school levels. Science curriculum, teachers' pedagogical content knowledge, and research in science education are investigated. Cross-listed with SCED 4400. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SCED 5401 - Inquiry Science Pedagogy and Practices

An in-depth study of inquiry science pedagogy and practices and how inquiry science supports standards-based education to make science accessible to ALL learners. The course provides a review of research on pedagogy and practices that support student understanding, problem solving and creativity through the use of inquiry science. Prereq: Concurrent enrollment in an internship or permission of instructor is required. Cross-listed with SCED 4401. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5416 - Math-Science Connections: Outdoor

(Primarily for pre-secondary teachers.) Explores science concepts through outdoor activities appropriate for middle-grade students. Topics include how the nature of science and mathematics informs pedagogy, national and state standards, earth science and paleontology, orienteering and map usage, water analysis, astronomy and entomology. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5500 - The Nature of Science

This course is a critical exploration of science and scientific knowledge using an epistemological approach to ask (and possibly answer) questions about sociological issues in science and implications for science research, teaching and learning. Cross-listed with SCED 7500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5540 - Foundations of School Health Education

This course is an overview of the principles of behavior theory as they relate to health education in both theory and practice. The course will examine the characteristics of effective school-based health education programs. Issues of ethnicity, culture, and race as they relate to health will be examined throughout the course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5550 - Curriculum Materials in Health Education

This course will support the application of behavior theory as it applies to specific health content knowledge and skills. Special attention will be given to the skills, instructional strategies, and techniques needed to develop a culturally responsive classroom to promote success for all learners. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5560 - Health Education Teaching Practices

The course provides an overview of health education teaching and learning strategies for use in school settings. Action research will be introduced and utilized as a method to examine current teaching practices. Role-play, student assessment development, differentiation of instruction, and culturally responsive classroom practices will be examined. Max hours: 3 Credits.

Semester Hours: 3 to 3

SCED 5650 - Environmental Education

This course links the theory and practice of environmental education to inform curricular development and pedagogical knowledge. Cross-listed with ENVS 4650 and ENVS 5650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5660 - Energy Education

Explores current energy problems. Students examine such topics as fuels from plants, fuels from wastes, fossil fuels, nuclear energy, wind energy, geothermal energy, solar energy, and energy conservation. Includes demonstration of available educational resources for grades K-12. The purpose of the course is to make technical aspects of energy accessible to the lay person. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5670 - Experiential Learning In The Parks

This course guides students through their experiences in a summer field placement, using readings, discussions and other interactive tools that focus on place-based education. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5690 - Curriculum Development in Place-Based Education

Students in this course apply knowledge about place-based education in schools and communities for educational purposes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5780 - Storytelling

Explores the history, function, philosophy, and techniques of storytelling. This class also includes collecting, selecting, preparing, developing, and delivering stories. Research and resources are emphasized. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

SCED 5800 - Curriculum Workshop for Science Teachers

Opportunity to work on curricular projects and problems in the schools. Explore various formal and informal learning environments such as study groups and after-school activities. Prereq: 18 semester hours in education and teaching experience or permission of instructor. Repeatable. Max Hours: 36 Credits. **Semester Hours:** 0.5 to 4

SCED 5840 - Independent Study

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 4

SCED 5920 - Readings in Elementary Education

Max hours: 4 Credits. **Semester Hours:** 1 to 4

SCED 5930 - Internship in Secondary Education

Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 5950 - Master's Thesis

Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

SCED 6110 - Science and Math Curriculum Studies

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Prereq: Graduate student status. Cross-listed with SCED 7110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 6120 - International Perspectives on the Curriculum

Considers schooling patterns in the U.S., the U.K., Japan, Australia, and several European countries, examining different approaches to curriculum issues in relation to social, historical, and economic factors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 6840 - Independent Study

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

SCED 6950 - Master's Thesis

Max hours: 4 Credits. **Semester Hours:** 4 to 4

SCED 6990 - Special Topics

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SCED 7110 - Science Math Curriculum Study

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Restriction: Graduate student status. Cross-listed with SCED 6110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 7500 - The Nature of Science

This course is a critical exploration of science and scientific knowledge using an epistemological approach to ask (and possibly answer) questions about sociological issues in science and implications for science research, teaching and learning. Cross-listed with SCED 5500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SCED 7840 - Independent Study

Max hours: 3 Credits. **Semester Hours:** 1 to 3

Social Justice

SJUS 2000 - Foundations in Social Justice

Examines how well the United States, Colorado and Denver are doing in addressing issues of social justice, such as inequality and environmental degradation. Explores various modes of democratic participation -- electoral politics, community activism, and lifestyle changes -- in advancing social justice. Term offered: fall. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1 **Semester Hours:** 3 to 3

SJUS 2010 - Social Justice: Theories, Narratives, and Technologies

How can citizens of a democracy address social justice issues? This course examines theoretical perspectives relevant to social justice, the narratives which express and question social order, and the technologies which alternately shape and reflect local, regional, and global cultures. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SJUS 3939 - Internship

Internship/experiential learning involving work in the community that is centered upon social justice and which includes a reflective component and some type of public dissemination. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SJUS 4000 - Social Justice Capstone

Students design and carry out research projects that address important civic issues in collaboration with community partners and present their findings to the partners and academic community. This course also involves reflection on social justice means and goals. Note: Students may not receive credit for SJUS 4000 if they have already received credit for SJUS 4001 and may not receive credit for SJUS 4001 if they have already received credit for SJUS 4000. Prereq: Junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SJUS 4001 - Social Justice Senior Project

Students design and carry out research projects that address important civic issues in collaboration with community partners and present their findings to the partners and academic community. This course also involves reflection on social justice means and goals. This is an individually structured version of SJUS 4000 so students may not receive credit for SJUS 4001 if they have already received credit for SJUS 4000 and may not receive credit for SJUS 4000 if they have already received credit for SJUS 4001. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SJUS 4050 - Special Topics: Social Justice

Special Topics in Social Justice will be covered. Cross-listed with SJUS 5050. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

SJUS 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SJUS 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SJUS 5050 - Special Topics: Social Justice

Special Topics in Social Justice will be covered. Cross-listed with SJUS 4050. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 3 to 3

Social Sciences

SSCI 4050 - Special Topics in Law Studies

These topics courses are concerned with specialized aspects of the study of law within the social sciences from various theoretical and research perspectives. These courses are interdisciplinary and serve as a forum for discussion specific to students interested in law studies. Term offered: fall, spring. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 6

SSCI 4060 - Topics in Law Studies: Constitutional Thought

These topics courses are concerned with specialized aspects of the study of constitutional thought as related to law studies. These courses are interdisciplinary and serve as a forum for discussion specific to students interested in law studies. Term offered: fall, spring. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 6

SSCI 4070 - Topics in Law Studies: Social Context of Law

These topics courses are concerned with specialized aspects of the study of the social context of law. These courses are interdisciplinary and serve as a forum for discussion specific to students interested in law studies. Term offered: fall, spring. Repeatable. Max hours: 6 Credits. **Semester Hours:** 3 to 6

SSCI 4251 - Introduction to Legal Studies

A survey of the United States legal system, including lawmaking powers, jurisdiction, court procedures, professional ethics and major principles of business law, contracts, estates and probate, family law, property and torts. Cross-listed with HUMN 4251/HUMN 5251/SSCI 5251. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 4325 - First Amendment: Theory and Context

First Amendment jurisprudence including free speech/responsibility, sedition/seditious libel/dissent, prior restraints, time/place/manner restrictions, hate/intimidating speech, defamation, privacy/security tensions, intellectual property/public good, advertising, corporate speech, sexual expression, and public status of religion. Cross-listed with HUMN 4325, HUMN 5325, SSCI 5325, PSCI 4325 and PSCI 5325. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 4710 - Women and Religion

A sociological exploration of the contemporary roles of women in religion. Course examines American and world religious groups with an eye to women's involvement. Considers how women have changed these traditions as they take on leadership roles and discusses the tensions that arise within these traditions as a result of their expanded participation. Cross-listed with HUMN 5710, SSCI 5710, WGST 4710/5710, RLST 4710/5710. Max hours: 3 Credits.

Semester Hours: 3 to 3

SSCI 4840 - Independent Study

Directed study based on a specific subfield of social sciences. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

SSCI 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SSCI 5000 - 19th and 20th Century Continental Philosophy

A seminar on key problems and thinkers in the nineteenth & twentieth century continental philosophical traditions and their contemporary significance. Restriction: Restricted to Graduate and Graduate Non-Degree majors. PHIL 3002 or PHIL 3022 are strongly recommended preparation for optimal student success. Cross-listed with PHIL 4000/5000 and HUMN 5000. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5013 - Methods and Practices of Graduate Interdisciplinary Humanities

The second of three required Master of Humanities core courses, this course introduces beginning graduate students to methodologies and intellectual frameworks for gathering, organizing, and developing interdisciplinary research. Focus is on the application of theories and methods of research, interpretation and analysis in humanistic research through readings that explore philosophical and cultural discourses have altered theory and method. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Restriction: Restricted to Graduate and Graduate Non-Degree majors.

Cross-listed with HUMN/PHIL 5013. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5020 - Foundations and Theories of Interdisciplinary Social Science

The first of the Master of Social Science core courses, this course exposes beginning graduate student to critical , key analytic models, and their application in disciplines that comprise the social sciences (classical anthropology, sociology, sociology of religion, philosophy of history, political theory, classical psychology, etc.) for the purpose of graduate-level interdisciplinary social science research. Course note: Students must repeat this course if they earn a C+ or lower and must have permission from the instructor to repeat the course. Students will only earn 3 credits for this course, even if they must repeat it. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Cross-listed with HUMN 5020 and PHIL 5020. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5023 - Research Perspectives in Social Science

Introduces interdisciplinary social research through a critical examination of various methodological approaches. Each student formulates a research proposal which includes a research question, a review of the literature, and methods of study. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5025 - Foundations and Theories of Interdisciplinary Humanities

Exposes the beginning graduate student to exemplary works and methodologies of disciplines oriented to humanities and social sciences, such as philosophy, sociology, history, communication, fine arts, and literature. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5025. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5050 - Topics in Social Science

These topic seminars are concerned with specialized aspects of the social sciences from various theoretical and research perspectives. These courses are interdisciplinary and serve as a forum for discussion of individual projects and theses. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Term offered: fall, spring. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SSCI 5101 - Pragmatism: Classical American Philosophy

The most significant philosophical tradition born in the United States is pragmatism. Examines several of the most important classical works of this tradition, the influence of thinkers who have helped pragmatism, and the contemporary relevance of this tradition. Figures who may be

included in this course are: Emerson, Pierce, Royce, James, Dewey, Mead, Rorty. Restriction: Restricted to Graduate and Graduate Non-Degree majors. An introductory course in philosophy is strongly recommended for optimal success. Cross-listed with PHIL 4101, 5101, HUMN 5101. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5242 - Bioethics

Examines some of the major moral issues confronting the nation's health care system. The class will search for solutions to such problems as financing health care for those unable to do so on their own, determining the extent of a patient's right to both refuse and demand certain types of medical treatment, and allocating scarce medical resources such as life-saving vital organs. The springboard for examining these issues will be the doctor or patient relationship framed by the moral principles of respect for persons and beneficence. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4242, PHIL 5242, HUMN 5242. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5251 - Introduction to Legal Studies

A survey of the United States legal system, including lawmaking powers, jurisdiction, court procedures, professional ethics and major principles of business law, contracts, estates and probate, family law, property and torts. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 4251/HUMN 5251. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5325 - First Amendment: Theory and Context

First Amendment jurisprudence including free speech/responsibility, sedition/seditious libel/dissent, prior restraints, time/place/manner restrictions, hate/intimidating speech, defamation, privacy/security tensions, intellectual property/public good, advertising, corporate speech, sexual expression, and public status of religion. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 4325, HUMN 5325, SSCI 4325, PSCI 4325 and PSCI 5325. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5530 - Social Construction of the Self

Investigates theories that address the construction of self and how that construction is constrained by culture, politics, society and historical moment. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5540 - Law, Diversity and Community in United States History

Engaging extensive primary and secondary source material, course applies an interdisciplinary approach to diversity and conflict that often surrounds the quest for economic, moral and social inclusion in the United States. Restriction: Restricted to Graduate and Graduate Non-

Degree majors. Cross-listed with HUMN 5540. Term offered: fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SSCI 5600 - Philosophy of Religion

Nature of religion and methods of studying it. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5600, PHIL 4600, 5600, RLST 4060, and 5060. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5650 - Reflections on Modernity

Explores modernity as a historical epoch and a theoretical space, looking at the commentaries and reflections of influential 20th century thinkers including Adorno, Arendt, Levinas, Merleau-Ponty, Habermas and Foucault. Examines how the theoretical inclinations of modernity were influenced by politics, art, literature and culture. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5650 and PHIL 5650. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5720 - Sexuality, Gender and Their Visual Representation

Studies sexuality, gender and identity representation from classical antiquity through the present in the visual arts. Uses the literature of visibility, feminism, race and queer theory. Explores representations of femininity, masculinity and androgyny and their reinforcement and challenge to gender-identity norms. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5720 and WGST 5720. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5770 - Imperialism, Post-Colonial Theory, Visual Discourse

Western empires disseminate political, social, economic & cultural practices through complex interplay of cultural practices. Visual production is a complex site for meaning making within imperialism. Examines how visual discourses operated to create meaning for audiences, through focus on postcolonial critique. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HUMN 5770. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5833 - Existentialism

Examines one of the most influential movements in recent European thought, beginning with existentialism's 19th century roots, and continuing on to the existentialist philosophers of the 20th century. Figures covered may include Dostoyevsky, Kierkegaard, Nietzsche, Heidegger, Sartre and de Beauvoir. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4833/5833 and HUMN 5833. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5840 - Independent Study: SSCI

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SSCI 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SSCI 5920 - Philosophy of Media and Technology

A philosophical examination of interrelationships between contemporary media, technology, and their impacts upon character of contemporary life and values. Topics may include ethics, epistemology, democracy, advertising, media literacy and criticism. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4920, 5920, HUMN 5920. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5933 - Philosophy of Eros

What does it mean to understand philosophy as an erotic activity? This question will be examined, first by studying Plato's dialogues-such as Lysis, Symposium and Republic-and then by reading texts from Sigmund Freud, Michael Foucault and others. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with PHIL 4933, WGST 4933/5933 and HUMN 5933. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

SSCI 6010 - Methods and Theories of Feminism and Gender Studies

Provides graduate-level interdisciplinary study in historiography, methodologies and theories of women's, gender and sexuality studies and considers how culture is constructed around these categories. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed

with WGST 6010 and HUMN 6010. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SSCI 6950 - Master's Thesis

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 8 Credits. **Semester Hours:** 1 to 8

SSCI 6960 - Master's Project or Report

Research which may be based on field work. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Term offered: fall, spring, summer. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 6

Sociology

SOCY 1001 - Understanding the Social World

This survey course provides an introduction to the sociological study of society, including patterns of social relationships, social interaction, and culture. Typical course topics include socialization, the family, criminology, deviance, inequalities, sex and gender, race and ethnicity, health and medicine, self and identities, and globalization. Students gain an understanding of how organizations, institutions, and structures of society shape individual and group experiences. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3. **Semester Hours:** 3 to 3

SOCY 1050 - Analysis of Modern Society

Examines various sociological views of modern society, including those of Lundberg, Mills, Riesman, Goffman, Sorokin, Cohen and others. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Repeatable. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SOCY 1500 - From Killer Apps to Killer Bots: Technology and Social Change

A young college student updates her social media page to stay in touch with family and high school friends while making new friends on campus. An upstart automobile manufacturer builds a factory manned by robots to produce electronic vehicles designed to reduce the

environmental impact of automobiles. The military deploys battalions of unmanned drones to engage with adversaries without risking the lives of their soldiers. Technology mediates nearly all aspects of social life, from reproduction and parenting to crime control and health care. This course is designed to provide students an introduction to the different social dimensions of technological innovation as well as the theoretical and methodological tools sociologists use to study them. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 2001 - Inequalities in Social World

Introduces students to critical sociological perspectives on social inequality. Major sociological factors contributing to the production and reproduction of inequality in various social organizations and institutions are analyzed. Prereq: SOCY 1001 or permission of the instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 2440 - Deviance and Social Control

This class explores different forms of deviance and ways in which deviant categories are created, and examines sociological theories of deviance, social order, and social power. The course also addresses how different groups gain control over social definitions and the consequences these definitions have in the form of norms, laws, and informal social sanctions. The impact of these definitions for individuals also is considered, namely for how people construct and manage their identities. Topics covered include drug smuggling, gang membership, computer hacking, shoplifting, homelessness, eating disorders, transability, BDSM, self-injury, and sex work. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 2462 - Introduction to Social Psychology

Studies the development and functioning of persons, especially within a group context, and the dynamics of small groups. Emphasis on the import of symbols for human behavior, development of self-concepts, and processes of competition and cooperation in group dynamics. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS3 **Semester Hours:** 3 to 3

SOCY 3001 - Urban Sociology

Explores U.S. cities as built environments, cultural spaces, and sources of community. Topics include the history of urbanization; social and spatial organization of cities; race and residential segregation; suburbanization; and urban problems such as crime, environmental hazards, and gentrification. Prereq: Sophomore standing or higher. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3010 - Sociology of Human Sexuality

Increases the understanding of differences in views of sexuality, specifically the link between sex and reproduction and its role as the motivation for gender roles and sex acts. Explores the history of sexuality, cross-cultural studies and primate modeling. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with WGST 3010. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3020 - Race and Ethnicity in the U.S.

A sociological examination of race and ethnicity in contemporary U.S. society. Includes a focus on the nature and causes of prejudice and discrimination. Dominant-minority relations are examined, with an emphasis on current status of minority groups and issues. Prereq: sophomore standing or higher or permission of instructor. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3030 - Social Change

Process of change in Western societies and its effects on the individual, communities, and economic and political institutions. Prereq: sophomore standing or higher or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3040 - Drugs, Alcohol & Society

Explores our culture's relationship with drugs and alcohol from a sociological perspective, investigating all spheres of substance use: recreational, medicinal, instrumental, & religious. Examines our long turbulent history with these chemicals, and ways in which they have shaped our society. Prereq: sophomore standing or higher or permission of instructor. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3050 - Sociology of Education

Drawing from theories in the sociology of education, this course evaluates the relationship between race, ethnicity, gender, class, immigration status and educational experiences, aspirations, and outcomes. Topics include socialization, tracking, educational policy, college access, and educational equity. Prereq: sophomore standing or higher or permission of instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3080 - Sex and Gender

Causes and consequences of sex role differentiation at the individual, group and societal levels. Current issues related to changing norms and values concerning gender in modern society are examined. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with WGST 3080. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3115 - Quantitative Methods & Analysis

This course provides students with a basic understanding of survey methods and statistical analysis. In addition to learning the basics of inferential statistics and sampling methods, students will conduct their own survey research, analyze data, and produce reports. Prereq: SOCY 1001 with a C or higher. Term offered: fall, spring, summer. Max hours: 4 Credits.

Semester Hours: 4 to 4

SOCY 3119 - Qualitative Methods

This course focuses on the development of skills involved in designing qualitative research studies, collecting and analyzing qualitative data and evaluating qualitative research. Primary focus is on ethnography, in-depth interviewing, and content analysis. Students read, analyze, and conduct qualitative research. Prereq: SOCY 1001 with a C or higher. Term offered: fall, spring. Max hours: 4 Credits. **Semester Hours:** 4 to 4

SOCY 3140 - Sociological Theory

An overview of major sociological theories and concepts. The emergence of the discipline and the contemporary development of sociological theories are examined. Prereq: SOCY 1001. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3297 - Social History of Asian Americans

Introductory-level course surveys the social history of Asian American groups from the mid-19th century to the present. Examines immigration patterns, the development of communities, social and economic problems, and anti-Asian movements and activities. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with ETST 3297 and HIST 3297. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3300 - Social Problems

Explores how societies define and attempt to solve "social problems." Possible topics: income disparities, race/ethnic relations, gender inequality, and sexuality, in addition to the relationship between these issues and social institutions such as education, religion, health care, and criminal justice. Prereq: sophomore standing or higher or permission of instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3440 - Medical Sociology

This course covers key issues in population health and emphasizes how sociological perspectives both challenge and augment biomedical perspectives on health and health care. We also discuss the social causes and consequences of race/ethnic, sex, and socioeconomic disparities in health. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with PBHL 3440. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3460 - The Social Psychology of Intergroup Relations

Study of those aspects of human interaction which deal with individuals perceiving themselves, and/or being perceived by others, as members of a social category. Focuses on the dynamics of intergroup conflicts--how they arise, what course they may take, and how they might be resolved. Prereq: sophomore standing or higher or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3490 - Criminology

Theories, nature and causes of crime as a social phenomenon. Processes of making laws, breaking laws, and reaction toward the breaking of laws. Prereq: sophomore standing or higher or permission of instructor. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3500 - Topics in Sociology

Special topics in sociology to be selected by the instructor. Note: Can be taken more than once when topics vary. Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3510 - Topics in Sociology

Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3520 - Topics in Sociology

Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3530 - Topics in Sociology

Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3540 - Topics in Sociology

Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3550 - Topics in Sociology

Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3570 - Death & Dying: Social & Medical Perspectives

Focusing on death, dying and bereavement using medical and social perspectives, this course explores how illness, prolonged dying and sudden death impact care providers, families and communities. Discussion, film, readings and music address the connection of social and medical issues. Cross-listed with HEHM 3570. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3650 - Sociology of Music

Focuses on the meaning/use of music in society. Explores censorship, organization of the recording industry, sociocultural contexts in which music is produced/distributed/listened to and the relationship between music and technology along with musical applications and associations. Prereq: sophomore standing or higher or permission of instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3697 - Contemporary Asian American Experience

Examines the contemporary Asian American experience, including the adaptation of new immigrants or refugees, economic and educational problems, ethnic identity, intermarriage, anti-Asian discrimination and other civil rights issues, and recent political activism. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with ETST 3697. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3700 - Sociology of the Family

The family as a social institution. Historical development and contemporary cross-cultural analysis, with emphasis on contemporary American families. Prereq: sophomore standing or higher or permission of instructor. Cross-listed with WGST 3700. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3720 - Global Perspectives on Social Issues

Various cultural and social frameworks are used in a sociological examination and international comparison of select social issues, such as globalization, terrorism, inequality and discrimination. Analysis of selected issues across cultures explores how societal and cultural characteristics shape these issues. Prereq: sophomore standing or higher or permission of instructor. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 3750 - Animals and Society

An examination into the category of "animal" as a social construct and the relationship between humans and non-human animals, which produces consequences of difference and subsequent inequality. The course utilizes different sociological perspectives to examine the social patterns, processes, and institutions that establish our lived experiences with non-human animals.

Prereq: Sophomore standing or higher or by instructor permission. Max hours: 3 Credits

Semester Hours: 3 to 3

SOCY 3840 - Independent Study: SOCY

Prereq: sophomore standing or permission of the instructor. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

SOCY 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: sophomore standing or higher or permission of instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Department consent required. Repeatable. Max hours: 12 Credits. **Semester Hours:** 3 to 6

SOCY 4020 - Race, Culture and Immigration

In this course, we will consider the social and legal construction of race and immigration. We will also explore how immigrants have been racialized both historically and in the current moment. In addition, we will consider the role of culture in shaping the immigrant experience and immigrant outcomes. Restriction: Junior standing or higher or instructor permission. Cross-listed with SOCY 5020, ETST 4020 and ETST 5020. Term offered: spring. Max hours: 3 Credits.

Semester Hours: 3 to 3

SOCY 4050 - Health Disparities

This course focuses on social, economic, and political factors that shape the uneven distribution of health and illness in the United States. Social determinants of health are explored, including socioeconomic status, race and ethnicity, neighborhood environments, social relationships, and gender. Cross-listed with SOCY 5050. Term offered: spring. Max hours: 3 Credits. **Semester**

Hours: 3 to 3

SOCY 4110 - Sociology of Health Care

Examines U.S. health care institutions and issues such as rising costs, the effects of class, racial and gender inequality, professionalization and monopolization of roles, construction of illness and health, managed care, for-profit health care, and ethics of health care decisions. Prereq: junior standing or higher or permission of instructor. Cross-listed with SOCY 5110. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4220 - Population Change and Analysis

Concepts of population change, methods of analysis, and applications to contemporary social issues. Topics include age and sex distributions, fertility, mortality, and migration, and the social causes and consequences of these phenomena. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5220. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4270 - Social Meanings of Reproduction

Reproduction involves more than biological processes, assuming symbolic, political, and ideological meanings. This course examines contested meanings of reproduction, including how people experience reproduction, controversies over who should reproduce (and under what circumstances), and how public policy mediates these conflicts. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5270, WGST 4270 and WGST 5270. Term offered: fall. Max hours 3 Credits. **Semester Hours:** 3 to 3

SOCY 4280 - Urban Social Space

The city simultaneously attracts and repulses us. It has openness and beauty; it is also cramped, crowded, and ugly. The city provides us with freedoms undreamed of in other times and places, yet it restricts our movements and activities. This course examines how different professionals have viewed the city, with particular attention to the spaces in the city. Both social and physical spaces are discussed. Prereq: junior standing or higher or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4290 - Aging, Society and Social Policy

A sociological examination of central issues (e.g., work, retirement, family support, health) pertaining to the aging population. Heterogeneity in aging, as shaped by gender, race, ethnicity and social class is addressed, as well as policies pertaining to the adult population. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5290. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4340 - Juvenile Delinquency

Factors involved in delinquent behavior. Problems of adjustment for delinquents, and factors in treatment and post-treatment adjustment. Major theories covered include strain theory, social

learning theory, control theory, and labeling theory. Course also reviews methods for testing these theories. Prereq: junior standing or higher or permission of the instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4440 - Poverty and Social Inequality

Investigates the distribution of wealth, income, and economic power in the United States with a focus on social institutions and factors that shape inequality. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5440. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4460 - Hate Groups and Group Violence

Social sciences help us understand the phenomena of hate groups and group violence and contribute toward their elimination. Examples are examined using theoretical perspectives on different levels of analysis and within different areas of research. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5460. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4475 - Self and Identity

A course in social psychology focusing on individuals in social interaction. Focuses of self-conception, identity, presentation of self, and self and emotion management. Examines major theories and research in social psychology. Prereq: Junior standing or permission of the instructor. Cross-listed with SOCY 5475. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4510 - Advanced Study of Social Change

Historical change of societies from one epoch to another (e.g., from feudalism to capitalism) and from one stage to another (e.g., competitive capitalism to monopoly capitalism), with focus on attendant social processes such as development of the working class, the rise of the corporation, the expanding role of the state, the irrationality of growth, and economic crises and imperialism. Prereq: junior standing or higher or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4520 - Collective Behavior

Social, cultural, and psychological factors affecting behavior in unpredictable situations. An in-depth analysis of social change through such phenomena as riots, crowds, publics and social movements. Prereq: junior standing or higher or permission of the instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4610 - Sociology of Religion

This course introduces students to the nature and functions of religion in society, emphasizing western religions in the U.S. Students will develop and apply an understanding of classic and modern sociological theories of religion to current events and disciplinary developments. Cross-listed with SOCY 5610, RLST 4020, RLST 5020. Prereq: junior standing or higher or permission of instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4640 - Sociology of Childhood and Adolescence

An in-depth overview of the theories and research regarding the life course understanding of infancy, childhood and adolescence. Children's lives and cultures in relation to adults and their transition from childhood to adolescence are studied. Prereq: junior standing or higher or permission of instructor. Cross-listed with SOCY 5640. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4650 - Sociology of Adulthood and Aging

Examination of the adult life course-post-adolescence to death, focusing on key social transitions of adulthood (e.g., independence from parents, marriage, retirement), and historical, institutional, and social factors that create variation in their timing, meaning, and individuals' role experiences. Prereq: junior standing or higher or permission of instructor. Cross-listed with SOCY 5650. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4690 - Crime and Inequality Over the Life Course

Life-course perspective on inequality and crime. Studies transitions, trajectories and turning points as key features of the life course. Considers how inequalities and criminal behavior are shaped by timing of experiences, historical and geographic contexts, others' lives, and human agency. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SOCY 5690. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4700 - Sociology of Law

Consideration of the formulation, interpretation, and legitimacy of legal rules within the context of social organization. The examination of a major social institution in modern society. Prereq: junior standing or higher or permission of instructor. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4740 - Courts & Society

Courts are a centerpiece of modern legal systems that mediate social relationships and people's relationship to the state. This course explores the connection between courts and democratic society by considering the operation and evolution of courts in the U.S. Cross-listed with SOCY

5740. Restriction: Restricted to Junior standing or above. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4770 - Advanced Topics in Sociology

Advanced study of special topics in sociology to be selected by the instructor. Note: May be repeated for credit when topics vary. Prereq: junior standing or higher or permission of instructor. Cross-listed with SOCY 5770. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 4774 - Advanced Topics in Sociology

Advanced study of special topics in sociology to be selected by the instructor. Note: May be repeated for credit when topics vary. Prereq: Junior standing or permission of the instructor. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SOCY 4780 - Violence in Relationships

Course focuses on the study of violence among individuals involved in intimate relationships; factors in society such as norms, laws and institutions that are related to creating violence among intimates; and social policies, prevention, intervention and treatment programs. Prereq: junior standing or higher or permission of instructor. Cross-listed with SOCY 5780, WGST 4780 and WGST 5780. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4830 - Senior Capstone: Worklife Practices & Policies

Introduces students to tools and develops skills to facilitate internship and job search. Students gain understanding of work contexts, exploring employment laws and policies, dynamics of race and gender in job searching, and research on careers and job negotiation. Prereq: Must have earned a minimum of 75 credits. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 4840 - Independent Study: SOCY

Prereq: junior standing or higher or permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

SOCY 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Prereq: junior standing or higher. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SOCY 4910 - Research Practicum

Practical experiences for undergraduates in application of principles of research design and data processing to a social research problem selected by the instructor. Prereq: junior standing or higher or permission of instructor. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SOCY 4995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Department consent required. Repeatable. Max hours: 12 Credits. **Semester Hours:** 3 to 6

SOCY 5000 - Professional Seminar: Sociological Inquiry

Introduces sociology graduate students to sociology as a discipline and profession. Conveys practical skills and knowledge useful to the pursuit of a graduate degree. Introduces students to sociology graduate faculty members and their research interests. Restriction: Students must be accepted to the MA in Sociology or get instructor permission in order to enroll in this course. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5016 - Social Theory

An overview of major theories across the social behavioral sciences examining social order, integration, conflict, and change. The course emphasizes a cross disciplinary approach, highlighting works of historical and contemporary relevance. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5020 - Race, Culture and Immigration

In this course, we will consider the social and legal construction of race and immigration. We will also explore how immigrants have been racialized both historically and in the current moment. In addition, we will consider the role of culture in shaping the immigrant experience and immigrant outcomes. Restriction: Graduate standing or instructor permission. Cross-listed with SOCY 4020, ETST 4020 and ETST 5020. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5024 - Seminar: Research Methods I

Problems and procedures in research design, data collection and processing. Note: Required for M.A. graduate students in sociology. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5050 - Health Disparities

This course focuses on social, economic, and political factors that shape the uneven distribution of health and illness in the United States. Social determinants of health are explored, including socioeconomic status, race and ethnicity, neighborhood environments, social relationships, and gender. Prereq: graduate standing. Cross-listed with SOCY 4050. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5110 - Sociology of Health Care

Examines U.S. health care institutions and issues such as rising costs, the effects of class, racial and gender inequality, professionalization and monopolization of roles, construction of illness and health, managed care, for-profit health care, and ethics of health care decisions. Prereq: Graduate standing. Cross-listed with SOCY 4110. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5183 - Seminar: Quantitative Data Analysis

A research-oriented seminar stressing the utilization of social data already collected in the test or generation of sociological theory. Note: Required for M.A. graduate students in sociology. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5193 - Seminar: Qualitative Data Analysis

Develops skills for designing studies, collecting and analyzing data, and evaluating qualitative research. Concentrates on ethnography, in-depth interviewing, and content analysis. Students read examples of qualitative research and about the process of qualitative research, as well as conducting independent research. Note: Required for M.A. graduate students in sociology. Prereq: graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5220 - Population Change and Analysis

Concepts of population change, methods of analysis, and applications to contemporary social issues. Topics include age and sex distributions, fertility, mortality, and migration, and the social causes and consequences of these phenomena. Cross-listed with SOCY 4220. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5270 - Soci Meanings of Reproduction

Reproduction involves more than biological processes, assuming symbolic, political, and ideological meanings. This course examines contested meanings of reproduction, including how people experience reproduction, controversies over who should reproduce (and under what

circumstances), and how public policy mediates these conflicts. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SOCY 4270, WGST 4270 and WGST 5270. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5290 - Aging, Society and Social Policy

A sociological examination of central issues (e.g., work, retirement, family support, health) pertaining to the aging population. Heterogeneity in aging, as shaped by gender, race, ethnicity and social class is addressed, as well as policies pertaining to the adult population. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SOCY 4290. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5440 - Poverty and Social Inequality

Investigates the distribution of wealth, income, and economic power in the United States with a focus on social institutions and factors that shape inequality. Prereq: Graduate standing. Cross-listed with SOCY 4440. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5460 - Hate Groups and Group Violence

Social sciences help us understand the phenomena of hate groups and group violence and contribute toward their elimination. Examples are examined using theoretical perspectives on different levels of analysis and within different areas of research. Cross-listed with SOCY 4460. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5475 - Self and Identity

A course in social psychology focusing on individuals in social interaction. Focuses of self-conception, identity, presentation of self, and self and emotion management. Examines major theories and research in social psychology. Prereq: Graduate standing. Cross-listed with SOCY 4475. Term offered: summer. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5550 - Seminar: Sociology of the Family

An intensive review and analysis of the family as a social institution. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5610 - Sociology of Religion

This course introduces students to the nature and functions of religion in society, emphasizing western religions in the U.S. Students will develop and apply an understanding of classic and modern sociological theories of religion to current events and disciplinary developments. Cross-listed with SOCY 4610, RLST 4020, RLST 5020. Prereq: Graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5640 - Sociology of Childhood and Adolescence

An in-depth overview of the theories and research regarding the life course understanding of infancy, childhood and adolescence. Children's lives and cultures in relation to adults and their transition from childhood to adolescence are studied. Cross-listed with SOCY 4640. Prereq: Graduate standing. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5650 - Sociology of Adulthood and Aging

Examination of the adult life course-post-adolescence to death, focusing on key social transitions of adulthood (e.g., independence from parents, marriage, retirement), and historical, institutional, and social factors that create variation in their timing, meaning, and individuals' role experiences. Cross-listed with SOCY 4650. Prereq: Graduate standing. Term offered: spring. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5660 - Seminar: Social Psychology

Sociological approaches to the study of the self, role theory, persons in situations, identifications, socialization, and other characteristics of persons in society. Prereq: Graduate standing. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5690 - Crime and Inequality Over the Life Course

Life-course perspective on inequality and crime. Studies transitions, trajectories and turning points as key features of the life course. Considers how inequalities and criminal behavior are shaped by timing of experiences, historical and geographic contexts, others' lives, and human agency. Prereq: Graduate standing. Cross-listed with SOCY 4690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5740 - Courts & Society

Courts are a centerpiece of modern legal systems that mediate social relationships and people's relationship to the state. This course explores the connection between courts and democratic society by considering the operation and evolution of courts in the U.S. Cross-listed with SOCY 4740. Prereq: graduate standing. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5750 - Seminar: Criminology

An intensive review and analysis of the literature and research dealing with sociology of crime in modern society. Prereq: Graduate standing. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5770 - Advanced Topics in Sociology

Advanced study of special topics in sociology to be selected by the instructor. Note: May be repeated for credit when topics vary. Cross-listed with SOCY 4770. Prereq: Graduate standing. Repeatable. Max hours: 9 Credits. **Semester Hours:** 1 to 3

SOCY 5780 - Violence in Relationships

Course focuses on the study of violence among individuals involved in intimate relationships; factors in society such as norms, laws and institutions that are related to creating violence among intimates; and social policies, prevention, intervention and treatment programs. Prereq: Graduate standing. Cross-listed with SOCY 4780, WGST 4780 and WGST 5780. Term offered: fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

SOCY 5840 - Independent Study: SOCY

Prereq: Graduate standing. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SOCY 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: Graduate standing. Term offered: fall, spring, summer. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

SOCY 5955 - Master's Thesis

Prereq: Graduate standing. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

SOCY 5964 - Master's Report

Prereq: Graduate standing. Term offered: fall, spring, summer. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 3

SOCY 5995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Department consent required. Repeatable. Max hours: 12 Credits **Semester Hours:** 3 to 6

Spanish

SPAN 1000 - Introduction to Cultures of the Spanish Speaking World

Introduces students to the Spanish-speaking cultures of Spain, Latin America, and the United States through a historical overview and a focus on contemporary politics and culture. Note: Taught in English. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-AH1
Semester Hours: 3 to 3

SPAN 1010 - Beginning Spanish I

Introduces basic Spanish pronunciation and grammar, useful vocabulary and idioms. Readings and class discussions relating to the Hispanic world. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Term offered: fall, spring, summer. Max hours: 5 Credits. **Semester Hours:** 5 to 5

SPAN 1011 - Intensive Spanish

SPAN 1011/1021 combines both semesters of the first year, and meets the needs of highly motivated students of the language and culture. Note: Students who have studied Spanish previously should not enroll in SPAN 1011/1021 without first consulting a department advisor. Cross-listed with SPAN 1021. Max hours: 5 Credits. **Semester Hours:** 5 to 5

SPAN 1020 - Beginning Spanish II

(Continuation of SPAN 1010.) Further development of listening, speaking, reading and writing skills. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed SPAN 1010 or equivalent, or have taken one year of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 1010 is recommended for success in this course. This course is not intended for native speakers. Term offered: fall, spring, summer. Max hours: 5 Credits. **Semester Hours:** 5 to 5

SPAN 1021 - Intensive Spanish

SPAN 1011/1021 combines both semesters of the first year, and meets the needs of highly motivated students of the language and culture. Note: Students who have studied Spanish previously should not enroll in SPAN 1011/1021 without first consulting a department advisor. Cross-listed with SPAN 1011. Max hours: 5 Credits. **Semester Hours:** 5 to 5

SPAN 1070 - Spanish Medical Conversation for Beginners

SPAN 1070 is a beginner's Spanish class designed to help a variety of medical personnel and students, who don't have a previous knowledge of the Spanish language, to improve their communication with their Spanish speaking patients or clients. It involves learning and practicing basic and essential conversation such as greetings, asking information during medical visits or emergency care, giving recommendations, speaking about medical records and other health related issues. The class requires weekly practice of fundamental medical interviews in Spanish, while improving general fluency and cultural competence **Semester Hours:** 3 to 3

SPAN 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Term offered: fall. Repeatable. Max hours: 3 Credits. **Semester Hours:** 1 to 3

SPAN 1995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max hours: 15 Credits. **Semester Hours:** 1 to 15

SPAN 2110 - Second Year Spanish I

Continues the development of skills acquired in 1010 and 1020. Readings deal with Hispanic culture and current topics from Spain and Latin America. Development of informal oral and written expression. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed SPAN 1020 or equivalent, or have taken two years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 1020 is recommended for success in this course. This course is not intended for native speakers. Term offered: fall, spring, summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 2120 - Second Year Spanish II

Continues the development of skills acquired in SPAN 1010, 1020 and 2110, together with a review of grammar. Readings deal with Hispanic culture and literature. Development of informal oral and written expression. SPAN 2120 satisfies the fourth-semester language requirement at most graduate schools. Note: Students may not enroll in any lower division (1000/2000) language skills course in which their level of proficiency exceeds that of the course. Students placing into a course through any means other than following the regular sequence must consult with an appropriate faculty member of the Dept. of Modern Languages prior to enrollment. Note: This course assumes that students have passed SPAN 2110 or equivalent, or have taken three years of high school Spanish, or possess equivalent proficiency. A grade of C-

or higher in SPAN 2110 is recommended for success in this course. This course is not intended for native speakers. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 2130 - Current Topics in the Spanish-Speaking World

A fourth-semester course (parallel to 2120) designed for students majoring or minoring in international affairs, but open to anyone wishing to continue the study of Spanish beyond 2110. Along with development of language skills and grammar review, class work involves contemporary topics in cultural, political, economic and social affairs. Note: This course assumes that students have passed SPAN 2110 or equivalent, or have taken three years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2110 is recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Sophomore standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SPAN 2995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

SPAN 3010 - Spanish Composition I

Expansion and reinforcement of oral and written skills in Spanish at an advanced level, in a broad cultural context. Oral activities are individual and in groups. Topics are introduced through oral activities, and are then used for written assignments. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3020 - Spanish Composition II

(Continuation of SPAN 3010.) Development of oral and written skills in Spanish in preparation for taking other advanced courses. Topics of increasing complexity are selected from current publications in Spanish. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students

have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3025 - Writing for Latinos

Writing class for students who grew up speaking Spanish, especially those who grew up in the United States. Focuses on different types of formal writing, spelling, difficult grammar points and writing as a process. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3030 - Spanish Oral Proficiency

This course is designed to help students acquire an "Intermediate High" level of proficiency in speaking and understanding spoken Spanish. Content-based instruction in small groups. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. This course is not intended for heritage Spanish speakers. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3050 - Advanced Spanish Grammar

A close study of the structure of the language and practice in its written use. Note: Recommended for those intending to teach Spanish at the secondary level. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3060 - Hispanic Phonetics: Theory and Practice

Explores the phonetics of spoken Spanish throughout the world. Theoretical content: classification of all Spanish sounds and how they are affected and change according to their phonetic environment and region. Practical features: pronunciation and strategies teaching English speakers to pronounce Spanish. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3101 - Introduction to the Study of Literature

The basic terms and skills needed to analyze both the themes and form of literary works, together with an introduction to research skills. All literary examples come from Hispanic literature. Note: SPAN 3252 is a prerequisite (previous or concurrent) to all other literature

courses taught in Spanish. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. This course is a prerequisite/corequisite for all other literature courses taught in Spanish. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3199 - Topics in Spanish Literature

Varying topics in Hispanic literature appropriate the 3000 level, not otherwise covered by regular courses. Note: Taught in Spanish for major and minor credit. May be taken more than once, provided that the topic is different each time. Prereq or Coreq: SPAN 3101. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPAN 3212 - Spanish American Culture and Civilization

Surveys the social, political, economic, religious, literary, and artistic life of Spanish America from the conquest to the present. Note: Taught in Spanish for major and minor credit. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3213 - Contemporary Latin American Culture and Institutions

Introduction to contemporary Latin American culture and institutions, with emphasis on the social, economic and political institutions of Spanish-speaking countries. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3221 - Culture and Civilization of Spain I

From prehistoric times through Phoenician, Greek, Roman, and Visigothic eras to the Moorish invasion in 711; the Arab period; the Reconquest; the Catholic Kings; the Imperial Period; and the Inquisition. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3222 - Culture and Civilization of Spain II

(Continuation of 3221.) Studies the social, intellectual, and artistic development of Spain from the time of the Bourbons (18th century) through the civil war of 1936, and the Franco regime to

the restoration of democracy under Juan Carlos I and the present day. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3223 - Contemporary Spanish Culture and Institutions

A study of contemporary Iberian culture, including an emphasis on modern business institutions and practices. This course can be applied to any Spanish major track but is specifically required for the International Language and Culture for the Professions track. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 3225 - Special Topics In Hispanic Culture

Variable topics in advanced studies in Spanish and Latin American culture. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPAN 3230 - Ibero-American Cultures through Film

A study of the Ibero-American cultures through their most representative films. Films will be windows to access the complexities and the contradictions lived in Ibero-American countries regarding a set of contemporary issues, such as violence, linguistic diversity, religious beliefs, sexuality, politics, history, social class, and globalization. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3240 - Food Metaphors: Ibero-American Cuisine and Culture

Intermediate/advanced Spanish students study interactions between Ibero-American cuisine and cultures. While improving Spanish skills, students learn how to cook Hispanic meals, study scholarly materials on food and cultures, watch films featuring meals as protagonists and read literary works of fiction and poetry. Taught in Spanish. Note: This course assumes that students have passed SPAN 2120 or 2130 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 or 2130 is

recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 3270 - Bilingual Communities: Spanish as a Language of Contact

Explores bilingualism by tracing the series of linguistic and ethnic contacts that converted Castilian from a Latin dialect to the language of the Spanish empire, the primary language of Latin America, and a fast-growing language in the United States. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3400 - Survey of Spanish Literature I

The most important works in the literature of Spain from the early Hispano-Arabic lyric poems through the golden age of the 17th century. Prereq or coreq: SPAN 3101. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 3410 - Survey of Spanish Literature II

The most important works in the literature of Spain from the 18th century to the present.

Prereq or coreq: SPAN 3101. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3510 - Survey of Spanish American Literature II

The most important works in the literature of Spanish America from the late 19th century to the present. Prereq or coreq: SPAN 3252. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3550 - Spanish American Short Story

The Spanish American short story from its beginnings in the romantic period of the 19th century to the present. Prereq or Coreq: SPAN 3101. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3700 - Spanish for International Business I

Development of proficiency in oral and written Spanish as used in business and industry throughout the Hispanic world, together with an increased awareness of social, economic, and political conditions affecting business transactions, particularly in long-term operations. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 3710 - Spanish for International Business II

(Continuation of SPAN 3700.) Further development of oral and written language proficiency, together with further examination of pertinent social, economic, and political conditions of the Hispanic world. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. SPAN 3700 desirable. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3730 - Special Topics in Spanish for the Professions

Variable topics in Spanish for the Professions not otherwise covered in regular course offerings. Note: May be taken more than once, provided that the topic is different each time. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: spring, fall. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 3 to 3

SPAN 3740 - Spanish for the Healthcare Professions I

This course seeks to enhance the communication between healthcare professionals and their Spanish speaking patients or clients. It entails practice of the medical interview while improving linguistic and intercultural competence. Note: SPAN 2120 or proficiency in Spanish equivalent to a fourth semester of college-level coursework is strongly recommended for optimal student success. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3750 - Spanish for the Healthcare Professions II

SPAN 3750 is a continuation of SPAN 3740. Students will continue to enhance the communication between healthcare professionals and their Spanish speaking patients or clients. It entails practice of the medical interview while improving linguistic and intercultural competence. Note: SPAN 2120 or proficiency in Spanish equivalent to a fourth semester of collegelevel coursework is strongly recommended for optimal student success. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3782 - Introduction to Translation I

The first course in a two-semester sequence that introduces the methodology and practice of written translation. Thorough analysis of source texts precedes translation into target language. Students must demonstrate third-year competence in Spanish and advanced writing skills in English. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent

proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3792 - Introduction to Translation II

Second course in a two-semester sequence (see SPAN 3782). Note: This course assumes that students have passed SPAN 2120 or equivalent, or have taken four years of high school Spanish, or possess equivalent proficiency. A grade of C- or higher in SPAN 2120 is recommended for success in this course. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 3840 - Independent Study: SPAN

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

SPAN 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Note: students must work with the Experiential Learning Center advising to complete a course contract and gain approval. Prereq: Junior standing. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

SPAN 3995 - Global Study Topics

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Term offered: summer. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 15

SPAN 4010 - History of the Spanish Language

Studies the history of the Spanish language, both internal and external, from the language's Latin roots to the present. Historical phonetics are emphasized, though all features of the language are discussed. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5010. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4020 - Spanish Sociolinguistics

Studies the Spanish language in its social context. In addition to specific regional linguistic features, social factors such as geography, social class, politics, race, gender, economics, education and history are discussed as determiners of the linguistic landscape. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5020. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4030 - The Learning and Teaching of Heritage Speakers

Studies Spanish heritage speakers, including characteristics of how they learn and how best to teach them. Includes definitions of heritage speakers, strengths and weaknesses in learning Spanish, and attitudes of and towards heritage speakers in the classroom. Prereq: SPAN 3060 with a C? or higher. Cross-listed with SPAN 5030. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4040 - Spanish Classroom Methods and Practice

Focuses on the second language learning and teaching of Spanish in a classroom context. Looks at topics including second language vocabulary, pronunciation, grammar, and types of feedback. Practical component of activity design and learning/teaching strategies. Prereq: SPAN 3060 with a C? or higher. Cross-listed with SPAN 5040. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4060 - Dialects of the Spanish-Speaking World

Studies the geography of the Spanish language in those countries where it is spoken as a primary language. Includes a comparison of dialect features and a study of factors that contribute to the diversity of the Spanish language. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5060. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4070 - Spanish Applied Linguistics & Second Language Acquisition

This course is a survey of various areas of the field of linguistics in general (e.g. morphology, syntax, semantics, pragmatics, etc.) as well as specific aspects of the structure (and acquisition) of the Spanish language. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5070. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4076 - Spanish in Colorado

A study of the Spanish language in its social context in Colorado and New Mexico. We will study historical factors as well as current social factors that contribute to the use of the Spanish language in this region. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5076. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4080 - Spanish in the United States

A study of the Spanish language in its social context as a language of the United States. In addition to studying bilingualism and language traits, factors such as race, gender, class, education, nationality, age, generation and language attitudes are considered. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5080. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4099 - Special Topics in Linguistics

Varying topics in Hispanic language and literature not otherwise covered by regular courses. Note: May be taken more than once provided that the topics are different each time. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq or Coreq: SPAN 3060. Cross-listed with SPAN 5099. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPAN 4110 - Contemporary Spanish Literature

Major works published since the Spanish Civil War, which ended in 1939. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5110. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4130 - Medieval Spanish Literature

Examines Spanish literature from the jarchas and the Cid through the Celestina in the context of the reconquest. Considers the construction of the Christian knight as a hero and the corresponding representations of women, Jews and Muslims. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5130. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4150 - Masterpieces of Spanish Literature

The most enduring works in the literature of Spain across the centuries. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5150. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4170 - Golden Age Drama

Spanish drama of the 16th and 17th centuries, the period of greatest dramatic productivity in the nation's history. Readings include selections from Lope de Vega, Tirso de Molina, Calderon de La Barca, and others. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5170. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4180 - Modernism

Examines the first real flowering of Spanish American literature, from about 1880 to 1910. The dominant genres of the period were the short story, the essay and lyric poetry. Readings come from Dario, Jose Enrique Rodo, Manuel Gutierrez Najera, Manuel Diaz Rodriquez and others. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5180. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4190 - Nineteenth-Century Spanish Novel

The Spanish novel in one of its most productive periods, beginning with romanticism and carrying through the realist and naturalist movements. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5190. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4300 - Generation of 1898

Spanish literature from around the turn of the century through the first third of the 20th century, reflecting the deep intellectual and cultural foment occasioned in part by Spain's loss of the Spanish-American War of 1898. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4320 - Interculturalism and Transnationalism in Modern Spain

Students will examine experiences of Spaniards living in different parts of the world and the circumstances of either foreigners or migrants living in Spain, through their visual and literary texts, film, photographs, documentaries and other products of current popular culture, such as contemporary television. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5320. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4330 - Modern Culture of Spain through Film and Narrative

Culture of modern Spain studied through Spanish film. The death of military dictator Francisco Franco opened the process for the recuperation of a usurped democratic, representational system that has become the basis of a cultural and economic resurgence. Taught in Spanish. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5330. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4340 - Race, Class, and Gender in Spanish Golden Age Literature

Explores works of various genres in relation to their social and political contexts in 16th and 17th century Spain, emphasizing the cultural attitudes toward race, class, and gender that inform them. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5340 and WGST 4540/5540. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4350 - Don Quijote

The complete Don Quijote in Spanish, focusing on its historical, social, and philosophic context, and its role in the emergence of the modern novel. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5350. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4360 - Women and the Spanish Civil War

Focuses on the role of Spanish women during the Second Republic, the Civil War, the dark & starving postwar, & the inescapable exile that was a consequence of the conflict. Discusses several texts & films that portray this silenced odyssey, as well as historical, ideological & cultural documents of critical value & significance. Cross-listed with SPAN 5360. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4380 - Romanticism in Spain

The romantic movement in 19th century Spain through plays, poems, essays. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5380. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4399 - Special Topics: Spanish Peninsular Literature

Varying topics in Spanish Peninsular Literature not otherwise covered by regular courses. Note: May be taken more than once, provided that the topic is different each time. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Prereq or Coreq: SPAN 3101. Term offered: spring, fall. Repeatable. Max Hours: 6 hours. **Semester Hours:** 3 to 3

SPAN 4401 - Survey of Spanish-American Literature I: Pre-1898

The most important works in the literature of Spanish America from the Colonial Period to the Late 19th Century. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5401. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4411 - Contemporary Spanish-American Novel

The novel in Spanish America since the Second World War, the period in which the greatest number and quality of works has been produced. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5411. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4450 - Masterpieces of Spanish-American Literature

Focuses on a limited number of outstanding works in Spanish-American literature across the centuries. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5450. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4501 - Borges: An Introduction to His Labyrinths

The works of Jorge Luis Borges (short stories, essays, poetry, translations, essays anthologies, lectures) will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5501. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4512 - Contemporary Argentine Short Stories

The short stories by extraordinary Argentine writers, such as Jorge Luis Borges, Silvina Ocampo, Julio Cortazar, Griselda Gambaro, Adolfo Bioy Casares, and Manuel Muica Laineza, among others, will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5512. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4521 - Mexican Literature I: pre-Columbian and Colonial

Survey of Mexican literature and culture from pre-Columbian times to the colonial era. Prereq or Coreq: SPAN 3101. Note: This course may count for the International Studies major or minor. See your INTS advisor for more information. Cross-listed with SPAN 5521. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4522 - Mexican Literature II: 19th to 21st Centuries

Survey of Mexican literature and culture from the early modern to contemporary literature. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5522. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4525 - Orientalisms In The Hispanic Tradition

Advanced studies of orientalism in the Hispanic tradition: the Hispano-Arabic cultural heritage in Early Medieval Spain and in contemporary Hispanic cultures, as well as the influence of other eastern religions and cultures, such as Judaism or Buddhism. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5525. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4541 - Unexpected Lives: Ibero-American Queer Cinema

Provocative films, by courageous Ibero-American filmmakers, on controversial topics (homosexuality, Lesbianism, bisexuality, transgender individuals, feminism, etc.) will be studied to teach students to think globally as well as critically about LGBTQ individuals in the context of Ibero-American cultures. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5541. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4550 - Garcia Marquez: Words of Magic

The works of Gabriel Garcia Marquez (stories, short novels, novels, newspaper articles, interviews, lectures) will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5550. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4590 - Ibero-American Thought

The course examines philosophical works by essayists, literary critics, and cultural thinkers from Spanish-American countries and the Iberian Peninsula. Besides reading philosophical works in their original form, students will read scholarly commentaries to deepen their understanding of those works. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5590. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4599 - Special Topics: Latin American Literature

Varying topics in Latin American literature not otherwise covered by regular courses. Note: May be taken more than once, provided that the topic is different each time. Prereq or Coreq: SPAN 3101. Term offered: spring, fall. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

SPAN 4600 - Seminar in Spanish Creative Writing: Poetry and Short Fiction

A capstone writing course. Semester writing project will be collected poems and short stories. Prereq: junior standing or higher. Cross-listed with SPAN 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for language majors in the teacher certification program, School of Education, CU Denver. Note: This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 5690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 5691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 4690 or SPAN 4690 or FREN 4690 or GRMN 4690 or CHIN 4690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 4840 - Independent Study: SPAN

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

SPAN 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SPAN 4970 - Special Topics in Literature

Varying topics in Hispanic literature not otherwise covered by regular courses. Note: May be taken more than once, provided that the topic is different each time. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 5970. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPAN 5000 - Introduction to Graduate Studies in Spanish

Introduces critical methodologies and critical perspectives of practices of signification such as literature and film, among others, in the context of culture and history. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5010 - History of the Spanish Language

Studies the history of the Spanish language, both internal and external, from the language's Latin roots to the present. Historical phonetics are emphasized, though all features of the language are discussed. Prereq: Graduate standing. Cross-listed with SPAN 4010. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5020 - Spanish Sociolinguistics

Studies the Spanish language in its social context. In addition to specific regional linguistic features, social factors such as geography, social class, politics, race, gender, economics, education and history are discussed as determiners of the linguistic landscape. Prereq: Graduate standing. Cross-listed with SPAN 4020. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5030 - The Learning and Teaching of Heritage Speakers

Studies Spanish heritage speakers, including characteristics of how they learn and how best to teach them. Includes definitions of heritage speakers, strengths and weaknesses in learning Spanish, and attitudes of and towards heritage speakers in the classroom. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SPAN 4030. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5040 - Spanish Classroom Methods and Practice

Focuses on the second language learning and teaching of Spanish in a classroom context. Looks at topics including second language vocabulary, pronunciation, grammar, and types of feedback. Practical component of activity design and learning/teaching strategies. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SPAN 4040. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5060 - Dialects of the Spanish-Speaking World

Studies the geography of the Spanish language in those countries where it is spoken as a primary language. Includes a comparison of dialect features and a study of factors that contribute to the diversity of the Spanish language. Prereq: Graduate standing. Cross-listed with SPAN 4060. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5070 - Spanish Applied Linguistics & Second Language Acquisition

This course is a survey of various areas of the field of linguistics in general (e.g. morphology, syntax, semantics, pragmatics, etc.) as well as specific aspects of the structure (and acquisition) of the Spanish language. Prereq: Graduate standing. Cross-listed with SPAN 4070. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5076 - Spanish in Colorado

A study of the Spanish language in its social context in Colorado and New Mexico. We will study historical factors as well as current social factors that contribute to the use of the Spanish language in this region. Prereq: Graduate standing. Cross-listed with SPAN 4076. Term offered: summer. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5080 - Spanish in the United States

A study of the Spanish language in its social context as a language of the United States. In addition to studying bilingualism and language traits, factors such as race, gender, class, education, nationality, age, generation and language attitudes are considered. Prereq: Graduate standing. Cross-listed with SPAN 4080. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5099 - Special Topics in Linguistics

Varying topics in Hispanic language and literature not otherwise covered by regular courses. Note: May be taken more than once provided that the topics are different each time. Prereq: graduate standing. Cross-listed with SPAN 4099. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

SPAN 5110 - Contemporary Spanish Literature

Major works published since the Spanish Civil War, which ended in 1939. Prereq: Graduate standing. Cross-listed with SPAN 4110. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 5130 - Medieval Spanish Literature

Examines Spanish literature from the jarchas and the Cid through the Celestina in the context of the reconquest. Considers the construction of the Christian knight as a hero and the corresponding representations of women, Jews and Muslims. Prereq: Graduate standing. Cross-listed with SPAN 4130. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5150 - Masterpieces of Spanish Literature

The most enduring works in the literature of Spain across the centuries. Prereq: Graduate standing. Cross-listed with SPAN 4150. Term offered: spring, fall. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPAN 5170 - Golden Age Drama

Spanish drama of the 16th and 17th centuries, the period of greatest dramatic productivity in the nation's history. Readings include selections from Lope de Vega, Tirso de Molina, Calderon de La Barca, and others. Prereq: graduate standing. Cross-listed with SPAN 4170. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5320 - Interculturalism and Transnationalism in Modern Spain

Students will examine experiences of Spaniards living in different parts of the world and the circumstances of either foreigners or migrants living in Spain, through their visual and literary texts, film, photographs, documentaries and other products of current popular culture, such as contemporary television. Prereq: Graduate standing. Cross-listed with SPAN 4320. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5330 - Modern Culture of Spain through Film and Narrative

Culture of modern Spain studied through Spanish film. The death of military dictator Francisco Franco opened the process for the recuperation of a usurped democratic, representational system that has become the basis of a cultural and economic resurgence. Taught in Spanish. Prereq: graduate standing. Cross-listed with SPAN 4330. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5340 - Race, Class, and Gender in Spanish Golden Age Literature

Explores works of various genres in relation to their social and political contexts in 16th and 17th century Spain, emphasizing the cultural attitudes toward race, class, and gender that inform them. Prereq: graduate standing. Cross-listed with SPAN 4340 and WGST 4540/5540. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5350 - Don Quijote

The complete Don Quijote in Spanish, focusing on its historical, social, and philosophic context, and its role in the emergence of the modern novel. Prereq: graduate standing. Cross-listed with SPAN 4350. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5360 - Women and the Spanish Civil War

Focuses on the role of Spanish women during the Second Republic, the Civil War, the dark & starving postwar, & the inescapable exile that was a consequence of the conflict. Discusses several texts & films that portray this silenced odyssey, as well as historical, ideological & cultural documents of critical value & significance. Cross-listed with SPAN 4360. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5399 - Special Topics: Spanish Peninsular Literature

Varying topics in Spanish peninsular literature not otherwise covered by regular courses. Note: May be taken more than once, provided that the topic is different each time. Prereq: graduate standing. Term offered: spring, fall. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

SPAN 5411 - Contemporary Spanish-American Novel

The novel in Spanish America since the Second World War, the period in which the greatest number and quality of works has been produced. Prereq: graduate standing. Cross-listed with SPAN 4411. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5450 - Masterpieces of Spanish-American Literature

Focuses on a limited number of outstanding works in Spanish-American literature across the centuries. Prereq: graduate standing. Cross-listed with SPAN 4450. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5501 - Borges: An Introduction to His Labyrinths

The works of Jorge Luis Borges (short stories, essays, poetry, translations, essays anthologies, lectures) will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq: graduate standing. Cross-listed with SPAN 4501. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5512 - Contemporary Argentine Short Stories

The short stories by extraordinary Argentine writers, such as Jorge Luis Borges, Silvina Ocampo, Julio Cortazar, Griselda Gambaro, Adolfo Bioy Casares, and Manuel Muica Laineza, among others, will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq: graduate standing. Cross-listed with SPAN 4512. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5521 - Mexican Literature I: pre-Columbian and Colonial

Survey of Mexican literature and culture from pre-Columbian times to the colonial era. Prereq: graduate standing. Cross-listed with SPAN 4521. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5522 - Mexican Literature II: 19th to 21st Centuries

Survey of Mexican literature and culture from the early modern to contemporary literature. Prereq: graduate standing. Cross-listed with SPAN 4522. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5525 - Orientalisms In The Hispanic Traditions

Advanced studies of orientalism in the Hispanic tradition: the Hispano-Arabic cultural heritage in Early Medieval Spain and in contemporary Hispanic cultures, as well as the influence of other eastern religions and cultures, such as Judaism or Buddhism. Prereq: graduate standing. Cross-listed with SPAN 4525. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5541 - Unexpected Lives: Ibero-American Queer Cinema

Provocative films, by courageous Ibero-American filmmakers, on controversial topics (homosexuality, Lesbianism, bisexuality, transgender individuals, feminism, etc.) will be studied to teach students to think globally as well as critically about LGBTQ individuals in the context of Ibero-American cultures. Prereq: graduate standing. Cross-listed with SPAN 4541. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5550 - Garcia Marquez: Words of Magic

The works of Gabriel Garcia Marquez (stories, short novels, novels, newspaper articles, interviews, lectures) will be studied with the goals of teaching students to think globally as well as critically about literature and other cultures. Prereq: graduate standing. Cross-listed with SPAN 4550. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5590 - Ibero-American Thought

The course examines philosophical works by essayists, literary critics, and cultural thinkers from Spanish-American countries and the Iberian Peninsula. Besides reading philosophical works in their original form, students will read scholarly commentaries to deepen their understanding of those works. Prereq: graduate standing. Cross-listed with SPAN 4590. Term offered: spring, fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5599 - Special Topics: Latin American Literature

Varying topics in Latin American literature not otherwise covered by regular courses. Note: May be taken more than once, provided that the topic is different each time. Prereq: graduate standing. Term offered: spring, fall. Repeatable. Max Hours: 6 hours. **Semester Hours:** 3 to 3

SPAN 5690 - Methods of Teaching Modern Languages

Studies the methods and practices of teaching modern languages. Note: requirement for those wishing to be teaching assistants in the Department of Modern Languages, and for language majors in the teacher certification program, School of Education, CU Denver. This course is taught in English and does not fulfill the foreign language proficiency requirement for the College of Liberal Arts and Sciences. Cross-listed with MLNG 4690, MLNG 5690, SPAN 4690, FREN 4690, FREN 5690, GRMN 4690, GRMN 5690, CHIN 4690, CHIN 5690. Term offered: fall. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5691 - Methods of Teaching Modern Languages II

A continuation of the study of modern language teaching methods. This second course has an emphasis on experiential learning through individual teaching demonstrations, class observations, as well as team teaching with experienced instructors. Cross-listed with MLNG 4691, MLNG 5691, SPAN 4691, FREN 4691, FREN 5691, GRMN 4691, GRMN 5691, CHIN 4691, CHIN 5691. Prereq: MLNG 5690 or SPAN 5690 or FREN 5690 or GRMN 5690 or CHIN 5690. Term offered: spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPAN 5840 - Independent Study: SPAN

Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SPAN 5939 - Internship

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 6

SPAN 5950 - Master's Thesis

This course is for students writing a master's thesis. It includes individual mentoring with one or more faculty members, individualized and library-based research. May also include field research. Students must consult with a faculty member before enrolling. Repeatable. Max hours: 6 Credits. **Semester Hours:** 1 to 6

SPAN 5970 - Special Topics in Literature

Varying topics in Hispanic literature not otherwise covered by regular courses. Prereq: Graduate standing. Cross-listed with SPAN 4970. Term offered: spring, fall. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

Special Education

SPED 1030 - Understanding (dis)Ability in Contemporary Classrooms

This course provides an overview of special education by examining the history of special education, construction of dis/ability, characteristics of individuals with disabilities, aspects of disproportionality, and introduction to evidence-based instructional practices. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4010 - Intentional Interventions for Exceptional Learners

This course provides instructional strategies and interventions for students with a wide variety of disabilities. Implications for targeted and intensive interventions and assessment are considered. Cross-listed with SPED 5010. Restriction: Professional Year Admission required. Max hours: 3 Credits **Semester Hours:** 3 to 3

SPED 4030 - Understanding (dis)Ability in Contemporary Classrooms

This course provides an overview of special education by examining the history of special education, construction of dis/ability, characteristics of individuals with disabilities, aspects of disproportionality, and introduction to evidence-based instructional practices. Prereq or Coreq: EDHD3930 or ECED4933 or ECED4934. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4140 - Assessment: Inquiry, Instruction, & Intervention

Using a variety of assessment tools, students will focus on the educational assessment methods and procedures used in decision making and program planning for students with exceptional learning needs, with attention to pervasive issues pertaining to students from culturally and linguistically diverse backgrounds. Cross-listed with SPED 5140. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4151 - Slashing Stigmas: Promoting Positive Behaviors

This course works to transform perspectives and practices related to supporting student behavior in classrooms. Students will learn important considerations related to culture, race, gender and socioeconomic status, as they intersect with behavior and social emotional development. Cross-listed with SPED 5151. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4300 - Family, Professional, and Community Collaboration

Focuses on the development of competencies in consultation and collaboration. The overall purpose is to encourage the development of understanding and skills that enhance a teacher's ability to work and communicate effectively with school personnel, including paraprofessionals and parents. The goal of collaboration is to support and determine together the instructional scenarios that best meet the needs of students. Specific competencies include problem solving, conflict resolution, data collection or observation skills, conferencing, facilitating meetings, and interacting with others while respecting diverse discourses and multicultural backgrounds. Cross-listed with SPED 5300. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4400 - Universal Design for Learning (UDL)

This course introduces Universal Design for Learning (UDL), an important educational philosophy and set of principles & techniques that focuses on strategies and tools to help ALL students by accommodating their differences in inclusive classroom settings. Cross-listed with SPED 5000. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4500 - Transition and Secondary Methods in Special Education

This course provides school leaders and practitioner with an understanding of the special education transition process as specified by federal and state guidelines, as well as effective teaching and learning strategies for secondary youth with disabilities. Cross-listed with SPED 5500. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours, and Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4600 - Special Education Law: Ethics and Compliance

Designed for school leaders and professionals to understand special education law and compare and contrast service delivery options . Cross-listed with SPED 5600. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4710 - Significant Health Support Needs Academy

Intends to prepare paraeducators with knowledge and skills needed for working with children with significant health support needs. Consisting of seven modules of varying length, this 15 clock hour academy focuses on training both the health aid and the significant health support needs professional. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4720 - Significant Supports for Challenging Behavior Academy

This academy provides the paraeducator with the knowledge and skills needed for working with children who have significant behavior needs. The academy focuses on working with students who have challenging behaviors. The aim is to provide paraeducators with the basic understanding of behavior support and to provide them with the necessary skills to implement written behavior support plans. It is recommended that paraeducators complete the Behavior Management Academy prior to taking this course. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4730 - Significant Communication Support Needs Academy

This academy provides the paraeducator with the knowledge and skills needed for working with children who have significant behavior needs. The academy focuses on working with students who have challenging behaviors. Its aim is to provide paraeducators with a basic understanding of behavior support and to provide them with the necessary skills to implement written behavior support plans. It is recommended that paraeducators complete the Behavior Management Academy prior to taking this course. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4740 - Intersections of Literacy, Culture, & Exceptionality

This course provides a foundational understanding of the complex intersections between literacy, culture, language, learning, and students with (dis)abilities. A primary goal is to address the particular needs of culturally and linguistically diverse learners with exceptionalities, while also exploring the distinctions between language development and learning disabilities. Cross-listed with SPED 5740. Restriction: Restricted to students in Education and Human Development with between 57 and 180 cumulative credit hours. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4750 - Orientation to Special Education

This 15 clock hour academy is designed to provide a basic introduction to special education and the needs of students who have disabilities. It includes introductory material regarding legal and historical foundations of special education, human growth and development, the nature of disabilities, and an introduction to the basic human needs that must be addressed. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4780 - Literacy Intervention for Exceptional Learners

Provides the practitioner with an understanding of research-validated approaches, strategies, assessment tools and issues related to effective literacy instruction for students performing significantly below grade level. Cross-listed with SPED 5780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 4800 - Orientation to Early Intervention Services

This academy provides Developmental Intervention Assistant (DI Assistant) an introduction to early intervention services under IDEA. Material regarding legal and historical foundations, human growth and development, and the nature of disabilities and their impact on infants and toddlers are introduced. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4805 - Fundamentals of the IFSP Process

This academy provides Developmental Intervention Assistants an overview of the Individualized Family Service Plan (IFSP). It clarifies their role in the implementation of IFSP and also knowledge about the evaluation and assessment components of the IFSP process. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4810 - Early Intervention Teamwork

This academy is designed for Developmental Intervention Assistants (DI Assistants) to work effectively in Early Intervention teams. Introductory materials regarding teamwork, delineation of DI Assistants 'and supervisors' roles and responsibilities as well as family centered practices are addressed. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4815 - Working with Families

This academy provides the Developmental Intervention Assistant with information and skills to create and support Family Centered Practices. Focus on the concept of family and the impact of disability on the family is woven throughout the course. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4820 - Instructional Strategies for Early Intervention

This academy assists the Developmental Intervention Assistant in examining the types of instructional strategies used in the Early Intervention programs. Focus is on building relationships, promoting engagement, and instructional support specifically in collecting data for the supervisor and IFSP team. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4825 - Promoting Social Emotional Development

This academy focuses on the importance of infant/toddlers' social emotional development and support. The CSEFEL Pyramid Model, adapted for this course, is a conceptual framework of

evidence-based practices addressing the promotion of social emotional development in early intervention programs. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4830 - Health Support Needs in Early Intervention

This academy provides the DI Assistant with information and skills to support the health services related to the early intervention programs. Safety awareness and precautions are stressed as related to caring for infants/toddlers in their home and natural environments. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4835 - Language and Early Literacy Development

This academy is designed for Developmental Intervention Assistant (DI Assistant) to work effectively with families as they support the early language and literacy development of their infants and toddlers with communication challenges. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4840 - Communication Support Needs Early Intervention

This academy provides the Developmental Intervention Assistant with information and skills to learn characteristic language patterns for infants and toddlers. Focus on critical importance of child interactions as well as key intervention communication strategies for infants and toddlers. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4845 - Individualized Intervention Infants/Toddlers

This academy, adapted from CSEFEL, introduces Developmental Intervention Assistants (DI Assistants) to basic knowledge of infants/toddlers with challenging behaviors. It provides necessary skills to implement written behavior support plans based on the IFSP under the supervision of Early Intervention professionals. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4850 - Transition to Age 3

This academy assists the Developmental Intervention Assistant in learning the elements of transition from Part C to Part B including the difference between an IFSP and IEP. Focus on the cultural and transition issues for the toddler and the family. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4855 - Interpersonal Skills for DI Assistants

This academy provides the Developmental Intervention Assistant effective interpersonal skills necessary to work with Early Intervention teams. It addresses issues of diversity based on culture, experience, gender, etc. and examines the DI Assistants' roles in each aspect of the topics. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4860 - Personal Growth Development for DI Assistants

This academy provides the Developmental Intervention Assistant with information and skills to identify and expand personal growth and improvement skills working in Early Intervention programs. The course covers stress-management strategies and uses creativity and flexibility in dealing with problematic situations. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4865 - Instructional & Assistive Technology in EI

This academy assists the Developmental Intervention Assistants in examining various types of instructional and assistive technology used in early intervention programs. Focus is on technology used in the home and other natural environments to assist the infant/toddler and the family. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4870 - Autism Spectrum Disorder in Early Intervention

This academy provides Developmental Intervention Assistants with information to assist the Early Intervention Professionals to implement instructions for infants/toddlers identified with autism. It offers participants knowledge of structured tasks environmental adaptations, and appropriate social skills for the infant/toddler and family. Max hours: 1 Credit. **Semester Hours:** 1 to 1

SPED 4910 - Special Education Generalist Internship and Site Seminar I

Special education teacher candidates engage in systematic observation of, participation in, design of and reflection on inclusive curricular, instruction and management practices. Graduated learning activities for each internship and time requirements are specified in the School Internship handbook and the Special Education Guidelines. In partner school, the site coordinator and site professor are responsible for coaching, supervision and site seminars. In internship outside partner school settings, cooperating teachers, district coordinators and/or university professors work with teacher candidates in the classroom and in seminars. Prereq: Completion of special education core or permission of instructor and advisor. Admission into the IPTE Program. Cross-listed with SPED 5910. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 1 to 8

SPED 4915 - Practicum For Developmental Intervention Assistant

The Developmental Intervention Assistant will engage in systematic observation of, and participation in the delivery of early intervention services. Practicum Instructor will observe, coach and assess as per the performance criteria required for completing the DI Assistant portfolio. Prereq: SPED 4800, 4805, 4810, 4815, 4820, 4825, 4830, 4835, 4840, 4845, 4850, 4855, 4860, 4865, & 4870. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 2 to 2

SPED 4919 - CO-TOP Practicum

The paraeducator engage in systematic observation of, and participation in instruction of management practices. The learning activities for each practicum are specified in the CO-TOP Practicum handbook and information sheet. Cooperating teachers, district coordinators and/or university-based supervision observe paraeducators in the classroom. Prereq: Completion of CO-TOP academies or permission of the CO-TOP Coordinator. Max hours: 2 Credits. **Semester Hours:** 1 to 2

SPED 4931 - Internship & Learning Community I

SPED 4931 is the first internship in a series of three completed during the professional year of the SPED program providing the necessary learning opportunities for candidates to gradually develop their practice to be licensed as a special education teacher. Restriction: Professional Year Admission required. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SPED 4932 - Internship & Learning Community II

SPED 4932 is the second internship in a series of three completed during the professional year of the SPED program providing the necessary learning opportunities for candidates to gradually develop their practice to be licensed as a special education teacher. Restriction: Professional Year Admission required. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SPED 4933 - Internship & Learning Community III

SPED 4933 is the final internship in a series of three completed during the professional year of the SPED program providing the necessary learning opportunities for candidates to gradually develop their practice to be licensed as a special education teacher. Restriction: Professional Year Admission required. Max hours: 6 Credits. **Semester Hours:** 6 to 6

SPED 5000 - Universal Design for Learning (UDL)

This course introduces Universal Design for Learning (UDL), an important educational philosophy and set of principles & techniques that focuses on strategies and tools to help ALL students by accommodating their differences in inclusive classroom settings. Cross-listed with SPED 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5010 - Intentional Interventions for Exceptional Learners

This course provides instructional strategies and interventions for students with a wide variety of disabilities. Implications for targeted and intensive interventions and assessment are considered. Cross-listed with SPED 4010. Max hours: 3 Credits **Semester Hours:** 3 to 3

SPED 5030 - Understanding (dis)Ability in Contemporary Classrooms

This course provides an overview of special education by examining the history of special education, construction of dis/ability, characteristics of individuals with disabilities, aspects of disproportionality, and introduction to evidence-based instructional practices. Cross-listed with SPED 4030. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5050 - Assessment & Advocacy for Multilingual Learners

Students learn to gather and use assessment results within a strengths-based framework to advocate for appropriate programming, placement, instruction, and ongoing progress monitoring of multilingual students. Special attention is paid to linguistic and cultural bias in the field of assessment. Cross-listed with CLDE 5050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5120 - Negotiating The Special Education Teaching Process

This course explores both theoretical and practical aspects of educating students with special needs. Students will examine the nature of disability, the history and legal basis for special education programming in American schools, as well as contemporary law governing the education of persons with disabilities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5140 - Assessment: Inquiry, Instruction, & Intervention

Using a variety of assessment tools, students will focus on the educational assessment methods and procedures used in decision making and program planning for students with exceptional learning needs, with attention to pervasive issues pertaining to students from culturally and linguistically diverse backgrounds. Cross-listed with SPED 4140. Max hours: 3 Credits.

Semester Hours: 3 to 3

SPED 5151 - Slashing Stigmas: Promoting Positive Behaviors

This course works to transform perspectives and practices related to supporting student behavior in classrooms. Students will learn important considerations related to culture, race, gender and socioeconomic status, as they intersect with behavior and social emotional development. Cross-listed with SPED 4151. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5210 - Foundations for Understanding Behavior

This course is designed to provide a foundational understanding of behaviors commonly witnessed in the classroom. It will provide strategies for assessment and guidance on legal processes which guide the development of individualized education and behavior plans. Specialize instructional methods and current events impacting the social emotional educations of students will also be discussed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5300 - Family, Professional, and Community Collaboration

Focuses on the development of competencies in consultation and collaboration. The overall purpose is to encourage the development of understanding and skills that enhance a teacher's ability to work and communicate effectively with school personnel, including paraprofessionals and parents. The goal of collaboration is to support and determine together the instructional scenarios that best meet the needs of students. Specific competencies include problem solving, conflict resolution, data collection or observation skills, conferencing, facilitating meetings, and interacting with others while respecting diverse discourses and multicultural backgrounds. Cross-listed with SPED 4300. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5401 - Advanced Seminar in Special Education

Designed to allow an opportunity for special educators to compare and contrast the service delivery, funding mechanisms, professional ethics, and underlying assumptions of special and regular education. Trends in the field of special education are examined through review of current research. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

SPED 5440 - Ethics and Implementation ABA

This course is designed to teach you ethical and professional conduct considerations in applied behavior analysis. We will review behavior change systems and implementation issues in the conduct of applied behavior analysis. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5450 - Introduction to ABA and Terminology

This course will introduce the history and basics of ABA with a focus on its related terminology. In addition, ABA benefits will be discussed, and emphasis placed on ethical considerations required for practicing ABA as a board Certified Behavior Analyst. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5460 - ABA Practical Applications

This course will provide a framework for the natural science of behavior. It will provide students with a systematic approach to understanding and precisely describing the behavior of individuals, and its relationship to environmental determinants. Prereq: SPED 5450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5470 - ABA Data

This course will introduce how to collect and interpret different types of data, and the importance of making data-driven decisions for behavior change procedures based on functional relationships. Prereq: SPED 5450, 5460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5480 - ABA Advanced Data and Behavioral Plans and Applications

Student will learn to use standard celeration charts and make data-driven decisions to write appropriate behavioral plans. They will also learn to use ABA strategies to enhance communication, to support individuals with ASD, and to benefit from systems supports. Prereq: SPED 5450, 5460, 5470. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5490 - Autism In Early Intervention

This course will provide students with the knowledge necessary to implement recommended, evidence-based practices with young children with autism. The course will provide information on the etiology of autism, diagnostic procedures, evidence-based practices, and how to support families who have a young child diagnosed on the spectrum. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5500 - Transition and Secondary Methods in Special Education

This course provides school leaders and practitioner with an understanding of the special education transition process as specified by federal and state guidelines, as well as effective teaching and learning strategies for secondary youth with disabilities. Cross-listed with SPED 4500. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5530 - Language & Literacy Acquisition Div Lrn

This course investigates the relationship between language and literacy acquisition. In the context of first and second language acquisition across the lifespan, the course focuses on bilingual and second language development, and on the acquisition of literacy by young children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5600 - Special Education Law: Ethics and Compliance

Designed for school leaders and professionals to understand special education law and compare and contrast service delivery options . Cross-listed with SPED 4600. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

SPED 5740 - Intersections of Literacy, Culture, & Exceptionality

This course provides a foundational understanding of the complex intersections between literacy, culture, language, learning, and students with (dis)abilities. A primary goal is to address the particular needs of culturally and linguistically diverse learners with exceptionalities, while also exploring the distinctions between language development and learning disabilities. Cross-listed with SPED 4740. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5780 - Literacy Intervention for Exceptional Learners

Provides the practitioner with an understanding of research-validated approaches, strategies, assessment tools and issues related to effective literacy instruction for students performing significantly below grade level. Practitioners can expect to be able to conduct thorough literacy assessments as well as be able to develop, implement, and evaluate individual reading and writing programs for individual students with the most challenging literacy needs. Cross-listed with SPED 4780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SPED 5835 - Special Topics

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

SPED 5840 - Independent Study: SPED

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

SPED 5918 - ABA Practicum

Supervised field experience with a Board Certified Behavior Analyst for time spent directly working with individuals who require behavioral programming. Students must complete 1000 hours to meet BCBA requirements and 670 hours for BCaBA requirements. 100 hours is equivalent to 1 credit. Max hours: 10 Credits. **Semester Hours:** 0.5 to 4

SPED 5919 - ABA Intensive Practicum

Supervised field experience with a Board Certified Behavior Analyst for time spent directly working with individuals who require behavioral support. Students must complete 750 hours to meet BCBA requirements and 500 hours for BCaBA requirements. 75 hours is equivalent to 1 credit. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 0.5 to 5

SPED 5930 - Special Education Generalist Internship and Site Seminar I

Special education teacher candidates engage in systematic observation of, participation in, design of and reflection on inclusive curricular, instruction and management practices. Graduated learning activities for each internship and time requirements are specified in the School Internship handbook and the Special Education Guidelines. In partner school, the site coordinator and site professor are responsible for coaching, supervision and site seminars. In internship outside partner school settings, cooperating teachers, district coordinators and/or university professors work with teacher candidates in the classroom and in seminars. Max hours: 2 Credits. **Semester Hours:** 2 to 2

SPED 5931 - Special Education Generalist Internship and Site Seminar II

Special education teacher candidates engage in systematic observation of, participation in, design of and reflection on inclusive curricular, instruction and management practices.

Graduated learning activities for each internship and time requirements are specified in the School Internship handbook and the Special Education Guidelines. In partner school, the site coordinator and site professor are responsible for coaching, supervision and site seminars. In internship outside partner school settings, cooperating teachers, district coordinators and/or university professors work with teacher candidates in the classroom and in seminars.

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 2 to 2

SPED 5932 - Special Education Generalist Internship and Site Seminar III

Special education teacher candidates engage in systematic observation of, participation in, design of and reflection on inclusive curricular, instruction and management practices. Graduated learning activities for each internship and time requirements are specified in the School Internship handbook and the Special Education Guidelines. In partner school, the site coordinator and site professor are responsible for coaching, supervision and site seminars. In internship outside partner school settings, cooperating teachers, district coordinators and/or university professors work with teacher candidates in the classroom and in seminars.

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 2 to 2

SPED 5933 - Special Education Generalist Internship and Site Seminar IV

Special education teacher candidates engage in systematic observation of, participation in, design of and reflection on inclusive curricular, instruction and management practices. Graduated learning activities for each internship and time requirements are specified in the School Internship handbook and the Special Education Guidelines. In partner school, the site coordinator and site professor are responsible for coaching, supervision and site seminars. In internship outside partner school settings, cooperating teachers, district coordinators and/or university professors work with teachers, and candidates in the classroom and in seminars.

Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 8

Sustainability

SUST 3010 - Sustainability: Past, Present, and Future

This course draws on theoretical perspectives to critically analyze contemporary environmental issues across ecological, sociocultural, historical, political and economic contexts. Term offered: fall, spring. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SUST 3011 - Toward a Sustainable Future

This is the second of a two-course sequence that examines the interrelations among the historical, political, cultural, ecological, and economic aspects of contemporary environmental issues. SUST II provides students with theoretical perspectives on sustainability through a series of current, problem-oriented case studies. Note: this course assumes that students have

completed 1 Natural Science Core course and 1 Social Science Core course. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SUST 3416 - Aquaponic Farming

"Aquaponic Farming" is an intensive hands-on course that trains students to grow organic food using a combination of lecture and activities in an operating, commercial-scale aquaponic system. Aquaponics is a growing technique in which fish and plants are grown together. Note: this course assumes that students have completed one course in Biological or Physical Sciences. Max hours: 3 Credits. **Semester Hours:** 3 to 3

SUST 3840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: permission of instructor required. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

SUST 3939 - Internship

This course will provide internships with agencies, businesses and programs involved in initiatives aimed at promoting a sustainable future. Internships could include work with concerns involved in addressing specific environmental issues or with projects aimed at raising awareness of issues related to sustainability. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

SUST 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: permission of instructor required. Term offered: fall, spring, summer. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

SUST 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for

approval. Term offered: fall, spring, summer. Repeatable. Max Hours: 6 Credits. **Semester Hours: 1 to 6**

SUST 4960 - Capstone in Sustainability

As the culmination of the Sustainability Minor, this course examines current research practices in sustainability and sustainability-related fields. Students work in teams to complete a sustainability/sustainability-related research paper and poster and present it to the campus community. Note: Topics variable depending on region under study, student interest, and faculty specialty. Prereq: SUST 3011. Term offered: fall. Max hours: 3 Credits. **Semester Hours: 3 to 3**

SUST 4995 - Global Travel Study

This course is reserved for CU Denver faculty-led study abroad experiences. The course topic will vary based on the location and course content. Students register through the Office of Global Education. Repeatable. Max Hours: 9 Credits. **Semester Hours: 1 to 9**

Taxation

MTAX 6405 - Taxation of Property Transactions

This course focuses on the fundamental concepts regarding the taxation of transactions involving property, including concepts such as basis of property, realization and recognition of gain or loss, effects of taxing gains and losses from capital assets, depreciable status, amortization of intangible property, depreciation methods, property casualties and losses, limitations on passive losses, and non-recognition transactions. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours: 3 to 3**

MTAX 6415 - Employment Taxes and Related Topics

This course explores existing employment tax risks and employment tax planning opportunities through appropriate compensation and entity structuring techniques, analyzes proper worker classification, and highlights preventive techniques to avoid personal liability. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 1 Credit. **Semester Hours: 1 to 1**

MTAX 6420 - Estate and Gift Taxes

This course is an introduction to principles and practices associated with the taxation of estates, gifts, and other gratuitous transfers under Subtitle B of the Internal Revenue Code. Using relevant examples, this course also focuses on the practical aspects of completing IRS Form 706, United States Estate (and Generation-Skipping Transfer) Tax Return, and IRS Form 709, United

States Gift (and Generation-Skipping Transfer) Tax Return. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6425 - Taxation of S Corporations and Their Shareholders

This course focuses on fundamental tax issues relating to S corporations and their shareholders arising from the formation, operation, and liquidation of S corporations. Course work includes an examination of pertinent federal income tax returns of a S corporation. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6430 - International Taxation

International taxation focuses on the U.S. taxation of cross-border transactions. A review of the Internal Revenue Code's basic international tax rules is covered, including residency rules, sourcing of income and expenses, taxation of in-bound transactions (FDAP and "effectively connected income" rules), overview of U.S. model tax treaty provisions, anti-deferral regimes, and foreign tax credits. Students are often required to study the tax regimes of another country to compare and contrast foreign tax laws to U.S. laws. A brief review of interest-charge domestic international sales corporations is often covered. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6431 - Inbound International Taxation

An inbound transaction deals with a foreign person (e.g., a foreign individual, partnership, or corporation) doing business in the U.S. This course begins by discussing that a foreign person is taxed on two types of U.S. income: (1) FDAP (generally, investment income) and (2) effectively connected income (business income). FDAP includes a foreign person investing in marketable securities, as well as key planning issues when a foreign person invests in U.S. real estate. The effectively connected income discussion includes the branch profits tax. Planning opportunities such as avoiding U.S. income tax when a foreign person exports goods into the U.S.; choice of U.S. business entity; and structuring U.S. business entities between different foreign tax systems (world-wide taxation by the foreign country or territorial taxation by the foreign country) are also presented. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6432 - Outbound International Taxation

Outbound international taxation addresses U.S. tax issues when a U.S. person (e.g., U.S. individual, partnership, or corporation) is investing or doing business abroad. For U.S. individuals working abroad, this course covers the foreign income exclusion and the housing exclusion. The foreign tax credit protects both the U.S. individual or business from double taxation, but only if correctly structured when dealing with closely held U.S. businesses. From a business perspective, the deferral aspects of a foreign corporation are covered, as well as the anti-deferral regimes of (1) a controlled foreign corporation with subpart F income and (2) the passive foreign income company (PFIC). Planning issues such as creating foreign source income, corporate reorganizations under IRC § 367 are also discussed. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6435 - Income Tax Accounting and Methods

Topics in this course include the adoption of and change in accounting periods; income recognition and deduction allowance under the cash and accrual methods of accounting; the time value of money and original interest discount rules; prepaid and contested income and expenses; income and deduction reversals; accounting method changes; installment sales; long-term contracts; inventory accounting, including LIFO, FIFO and manufacturers' inventories; and net operating losses. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6440 - Tax Practice and Procedures

This course provides a study of the organization, policies, and procedures of federal and state taxing authorities. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6445 - Entrepreneurs' Tax and Finance

This course focuses on entrepreneurs and start-ups. Topics include choice of entity considerations regarding the proper business entity for conducting the new venture, tax efficient ways of raising capital, incentivizing employees, planning for retirement, and taking a successful company public. This course provides students with the tools and background to make intelligent, thoughtful decisions regarding tax and finance issues impacting the formation, operation, funding, and expansion of entrepreneurial ventures. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6455 - Tax Aspects Relating to Exempt Organizations

This course focuses on the statutory exemptions for "charities" and other entities organized under IRC section 501(c). It also addresses the political campaign activities, funds, and lobbying activities of political organizations and entities organized under IRC section 501(c); the "prohibited transactions" rules; private foundations; the "unrelated business income" tax; the dissolution of, and distribution of assets held by, exempt organizations; and the charitable contribution. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6460 - Advance Topics in Taxation

This course focuses on a variety of advanced tax topics for businesses and individuals. This course is offered on an infrequent basis. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6465 - State and Local Taxation

This course focuses on various state and local taxation issues, such as the constitutionality of certain state and local tax regimes; nexus or jurisdictional tax due process; allocation and apportionment formulae under various state and local tax regimes; business versus nonbusiness income; the multi-state tax compact; the "unitary" concept; residency definitions; nonresident income sources; sales of tangible personal property and their taxation, including the impact of sales and use taxes on selected transactions, such as interstate purchases and sales, drop shipments, purchases from and sales to state and federal governments, occasional or "casual" sales, leasing transactions, and construction and manufacturing transactions; retail and wholesale sales; valuation techniques for real and personal property for purposes of certain state and local property taxes; and administrative procedures applied by various state and local tax jurisdictions. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6470 - Professional Judgment and Ethical Decision Making in Accounting and Tax

The content of this course includes the following: the ethical responsibilities of accountants, both personal and professional; ethical dilemmas facing accountants; ethical theory; the various accounting codes of conduct and ethical guidance for accountants; and the application of ethical theory, codes of conduct, and professional standards. In addition, this course includes discussions on ethical considerations, mandates, and penalties germane to a tax accounting practice, with an emphasis on Treasury Department Circular No. 230; on tax penalties under IRC Code sections 6662, 6664, 6694, 6695, and 6696 as those penalties relate to taxpayers and tax return preparers; on the standards governing the issuance of tax opinions to clients, and on

AICPA statements on standards for tax services. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6473 - Auditing for Taxes and Tax Fraud

This course provides an introduction to and guidance for creation of an effective audit program for tax-based systems, with a focus on auditing tax fraud. The tax audit is designed specifically to detect potential misreporting of income and deductions and potential tax fraud. This course focuses on various methodologies that allow auditors to develop standards, objectives and procedures to examine systematically tax returns and tax strategies for misreported tax items and tax fraud. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6475 - Accounting for Income Taxes

This course addresses financial accounting reporting standards for income taxes. Principal topics include an understanding financial statement disclosures, identification of permanent and temporary differences, and calculation of current and deferred tax provisions. Additional topics include uncertain tax positions and valuation allowances. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6482 - Advanced Partnership Taxation

Advanced federal income tax course focusing on the taxation of partnerships and their partners. Topics: "substantial economic effect", allocation of debt to partners' bases, "hot assets", profits interests, related-party transactions, distribution "waterfalls", profit and loss allocation "waterfalls", and taxation of retiring partners. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or NBD within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6485 - Advanced Partnership Taxation

This course is an advanced federal income tax course focusing on the taxation of partnerships and their partners. Topics often include discussions on allocations of partnership income and loss under the "substantial economic effect" and the partner's interest in the partnership rules, targeted capital accounts, allocation of debt to partners' bases, "hot assets", profits interests, related-party transactions, distribution "waterfalls", profit and loss allocation "waterfalls", and taxation of retiring partners. Students cannot receive credit for both MTAX 6485 and MTAX 6482. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6490 - Income Tax of Trusts, Estates, and Beneficiaries

There are five major income tax areas that are fundamental to a CPA or legal tax practice: (1) individual; (2) partnership; (3) C corporations; (4) S corporations; and (5) "fiduciary" taxation. This course focuses on the last of the core types of income taxation - fundamentally, the taxation of trusts, estates and their beneficiaries under Subchapter J of the Internal Revenue Code. There are three major areas covered by Subchapter J. First, the grantor trust rules deal with revocable trusts and, to many practitioner's surprise, many irrevocable trusts. Second, estates and irrevocable trusts that are not grantor trusts are governed by the distributable net income rules. Third, when someone inherits an asset that was not taxed to the decedent, such as a retirement plan, the income in respect of a decedent rules apply to the heir. This course examines each of these three major areas of income taxation under Subchapter J and focuses on the practical aspects of completing IRS Form 1041, U.S. Income Tax Return for Estates and Trusts, using real life examples. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6495 - Travel Study: Washington, D.C. Tax Experience

By petition only. This course is a travel program. Students will travel to Washington, D.C. to meet with representatives from the various governmental entities that influence federal taxation. In particular, students will meet with representatives (i) from the various Congressional committees and legislative advisory committees involved in drafting tax legislation, (ii) from the Internal Revenue Service and Treasury Department, and (iii) from the United States Tax Court and other courts that consider federal tax cases. Prereq: At least 6 credit hours of MTAX courses and a cumulative MTAX GPA of no less than 3.00. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 2 Credits. **Semester Hours:** 2 to 2

MTAX 6499 - Consolidated Group Returns

This course focuses on the preparation of consolidated group corporate tax returns filed pursuant to Internal Revenue Code section 1501 and the Treasury Regulations promulgated thereunder. Corporate affiliated groups are also discussed. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 3 to 3

MTAX 6500 - Advanced Corporate Taxation

A study of the statutory and judicial tax rules and problems relating primarily to corporate reorganizations and commonly controlled corporations, with a special emphasis on the tax rules associated with restructuring of corporate entities in the context of corporate merger and acquisition transactions. Prereq: Grade of C (2.0) or higher in ACCT 6140 or ACCT 4410 or at

least 6 credit hours of MTAX courses. Restriction: Restricted to graduate majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits.

Semester Hours: 3 to 3

MTAX 6800 - Special Topics in Taxation

Courses offered irregularly for the purpose of presenting new subject matter in Taxation. Consult the current 'Schedule Planner' for semester offerings. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

MTAX 6840 - Tax Independent Study

Permission of instructor required. Allowed only under special and unusual circumstances. Regularly scheduled courses cannot be taken as independent study. Prereq: At least 9 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 1 to 3

MTAX 6939 - Tax Internship/Cooperative Education

Supervised experiences involving the application of tax return preparation and tax planning concepts and skills in an employment situation. Prereq: At least 6 credit hours of MTAX courses. Restriction: Restricted to graduate business majors and NDGR majors with a sub-plan of NBA or CPA within the Business School. Max hours: 3 Credits. **Semester Hours:** 1 to 3

Theatre

THTR 2450 - Introduction to Performing Arts and Events Management

Offers students the ability to learn about stage managing events in the performing arts, in a non-pressure environment where leadership and organizational skills may develop and the student can gain a general understanding of the profession. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 2510 - Introduction to Oral Interpretation

Students will have required readings in a variety of text styles. They will choose perform scenes from those texts introducing them to the basic performance skills required for Stage and Screen acting. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 2531 - Acting for Non-Theatre Majors

Introductory acting course which focuses on the skills comprising the actor's art and their direct application to all disciplines of study outside of the theatre major. Students investigate interpersonal skills such as collaboration, communicating, risk-taking, listening, and creative problem solving. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 2560 - Topics in Theatre

Specialized topics in theater. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

THTR 2600 - Studio I: Dynamics of Content Creation

Investigates the process of creating performance texts for live, recorded and mixed presentation as well as the methods of selecting, transforming and pacing material for performance. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 2710 - Theatrical Design, Aesthetics, Production I

Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 2820 - Departmental Production

Participation in departmental production. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

THTR 2821 - Multi-Arts Performance

Participation in an integrated arts performance piece. Credit hours are determined by a faculty advisor and are dependent on the level of responsibility in the production. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 2 to 3

THTR 2822 - Affiliated Theatre Production

Participation in a production at an affiliated theatre in the Denver metro area. Credit hours are determined by a faculty advisor and are dependent on the level of responsibility in the production. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 2

THTR 2823 - Theatre Buffs Production

Participation in a Theatre Buffs production. Credit hours are determined by a faculty advisor and are dependent on the level of responsibility in the production. Repeatable. Max Hours: 2 Credits. **Semester Hours:** 1 to 2

THTR 2824 - Theatre Practice: Management

Practicum component of the theatre emphasis requirement through participation in stage management, box office management, or public relations for an approved production. Credit hours are determined by a faculty advisor and are dependent on level of responsibility in the production. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 2 to 4

THTR 2840 - Independent Study: THTR

Prereq: Written permission of the supervising instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

THTR 3010 - Stage and Production Management

This is a course that addresses aspects of planning and managing various theatrical events and live performances. Emphasizes maximum results, given the complexity of live performance and the resource pool. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3530 - Acting: Character and Text

Fully prepared scene studies leading to advance work in characterization and text. Methods of discovering and utilizing the range of creative potential play scripts from the current production program are emphasized. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3531 - Theatre of Social Responsibility

Students study interactive theater based on selected social, political, or community concerns (peer pressure, gender identification and substance abuse). Students will create a performance piece on the selected topic. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3560 - Topics in Theatre

Specialized topic in theater. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

THTR 3561 - Topics in Theatre: Honors in Humanities Cluster

Specific topics courses designed as cluster courses for the Honors in Humanities program. Titles rotate on a regular basis. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

THTR 3580 - Theatre for Children

Offered irregularly. Study of processes involved in creating substantial theatre for children, including an examination of various sources for dramatizing children's stories, fairy tales, poems, and existing scripts. Includes a full production of a children's play to be performed by members of the class before audiences of children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3720 - Lighting Design

A practical introduction to the history, theory, practice and equipment for lighting performing arts productions. Course emphasizes textual analysis for lighting design, basic electricity, lighting equipment and control, safety practices and lighting graphics. Requirements include related experiences with departmental productions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3760 - Sound Design for the Theater

Sound design with practical application towards usage in the theatrical discipline. Includes studio techniques, live playback, script analysis, and recording techniques. Students will learn the various applications through work on class projects and performances. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 3840 - Independent Study: THTR

Prereq: Written permission of supervising instructor. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

THTR 3995 - Travel Study Topics

Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4530 - Acting: Character and Media

Provides skill development and workshop experience for the actor in media work-film, television, and video. Students will analyze and present scene work in both live and media performances utilizing feedback from class and instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4560 - Topics in Theater

Various special interest topics in the study of production, theory, and analysis with an emphasis on theater. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

THTR 4570 - Creative Drama

Offered irregularly. Study of creativity, its role and application in dramatics, and the manner in which creative dramatics assists in the growth and development of children and youth. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4580 - Theatre for Children

Offered irregularly. Study of the processes involved in creating designed and substantial theatre for children, including an examination of various sources for dramatizing children's stories, fairy tales, poems and existing scripts. Includes a full production of a children's play to be performed by members of the class before audiences of children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4611 - American Theatre History

Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4730 - Advanced Scenic Design

Students will continue studies in graphic techniques, design styles and the integration of production design areas. Students will complete projects in scenic design for various production forms. Outcomes will include fully realized design projects with renderings, models and drafting. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4760 - Topics in Design

A special topics investigating production design in traditional and non-traditional endeavors. Students will explore various design skills through projects and participation in departmental productions. Attendance and review of productions will be scheduled. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

THTR 4770 - Advanced Production Design Studio

Students will design a portfolio piece, professional quality project to be used in their BFA jury. This course provides a "Paper project" in contrast to Senior Capstone Project class which could be a group project with a number of variables. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 4820 - Theatre Practice

Advanced practicum in production work for an approved production. Credit hours are determined by faculty advisor and are dependent on the level of responsibility in the production. Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 4

THTR 4840 - Independent Study: THTR

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

THTR 5530 - Acting: Character and Media

Provides skill development and workshop experience for the actor in media work - film, television, and video. Students will analyze and present scene work in both live and media

performances utilizing feedback from class and instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 5550 - Playwriting: The Short Form

Writing workshop in one-act plays, with special emphasis on the demands of production: space, acting, staging conventions and techniques. Students will write and revise several one act play scripts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 5560 - Topics in Theatre

Various special interest topics in the study of production, theory, and analysis with an emphasis on theater. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

THTR 5570 - Creative Drama

Offered irregularly. Study of creativity, its role and application in dramatics, and the manner in which creative dramatics assist in the growth and development of children and youth. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 5580 - Theatre for Children

Offered irregularly. Study of the processes involved in creating substantial theatre for children, including an examination of various sources for dramatizing children's stories, fairy tales, poems, and existing scripts. Includes a full production of a children's play to be performed by members of the class before audiences of children. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 5611 - American Theatre History

Offered irregularly. Investigates American theatres, methods of presentation, audiences, actors, acting, and economics from 1700 to the present, emphasizing contemporary practices and values as away of understanding and appreciating the place of theatre in this country as it has evolved and developed. Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 5840 - Independent Study: THTR

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

THTR 5939 - Internship

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

THTR 5995 - Travel Study

Max hours: 3 Credits. **Semester Hours:** 3 to 3

THTR 6840 - Independent Study: THTR

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

THTR 6950 - Master's Thesis

Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

Theatre & Film General Courses

TFVP 3730 - Scenery Design

Introduces the principles and practices of production design for the theatre and film. Emphasizes textual analysis, the aesthetic and practical elements of design, design development and graphics. Requirements include related experiences working departmental productions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

TFVP 3740 - Costume Design

Introduces the principles and practices of costume design for theater and film productions. Students will focus on basic figure drawing, practical elements of design, design development and different costume rendering techniques through projects and productions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Univ Honors and Leadership

UNHL 1100 - The Life of the Mind

The UNHL program was developed with the goal of creating academics with leadership skills to communicate their ideas and strong leaders with the ability to think critically, analyze issues from alternate perspectives and develop and communicate plausible solutions that take into consideration all points of view; the ideal end result of the program would be intelligent, ethical leaders and scholars in multiple fields of endeavor. The three areas around which the course will revolve are: a) Oil, b) Robots, c) Penicillin. Each of these topics allows multiple facets of a university education in the old sense to be explored from philosophy, history and art to chemistry, physics and engineering. There will be multiple means of exploration for each of these topics, from lectures and in-class discussions to field trips and engagement activities; there will be writing assignments in every phase that will focus on writing skills and writing for different audiences. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 2755 - UHL Seminar

Repeatable. Max Hours: 4 Credits. **Semester Hours:** 1 to 1

UNHL 2840 - Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

UNHL 2850 - Faculty-Mentored Research

UNHL student research conducted under the supervision of UC Denver faculty. Prereq: Permission of sponsoring faculty mentor and UNHL Director. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

UNHL 2939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Cumulative GPA of 3.0 or above and permission of UNHL Director/Associate Director. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

UNHL 3010 - Leadership Behavior: Historical and Contemporary Perspectives

This course will provide students with an opportunity to integrate historical and contemporary issues in the study of leadership behavior. The course is based on leadership research and writing that reveals the leader as facilitator, collaborator, servant, and follower. The course will provide students with an opportunity to reflect, discuss, and write on topics and questions related to leadership and followership behavior. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3100 - Ethics & Leadership: An Introduction

This one-semester ethics and leadership course will introduce students to the wide variety of some of the best leadership theories and their application to current ethical issues. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3110 - Leadership, Communication, and Conflict

Leaders spend a significant amount of time managing conflict. This course is designed to explore the practical and theoretical basis of conflict and communication, and seeks to examine critical leadership processes that lead to the increased likelihood of organizational survival through successful conflict management. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3150 - Negotiation, Bargaining, and Leadership

This course integrates leadership theory and practice within a principled negotiation philosophy. Students will develop lifelong negotiation skills that reflect a principled negotiation framework for conflict management and strategic bargaining. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3160 - Mindfulness and the Evolution of Consciousness

The desire to understand consciousness has captivated the human imagination and raises important questions about human experience, awareness, nature, and life. This course is an exploration of the communication and evolution of consciousness in both historical and contemporary times. Consciousness scholarship covers broad areas of intellectual development, in particular, the relationship between our sense of human awareness and: biology, science, religion, art, nature, cosmology, culture, philosophy, metaphysics, and communication. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3250 - Leadership and Sustainability

This course examines issues of sustainability and the leadership challenges associated with the creation of sustainable social structures. Topics covered include a wide range of sustainability concerns such as: global population and food scarcity, alternative fuels and energy systems, biological and human health, leadership and sustainability program development, and symbolic and media representations of sustainability. Prereq: UNHL 1100 and second- or third-year status in the UNHL program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3310 - Innovation, Cutting-Edge Knowledge, and Self-Guided Learning

The purpose of this course is to familiarize students with cutting-edge knowledge in major scientific and technological fields, against the background of cultural and artistic creativity, and to establish habits of lifelong, self-guided learning. To enhance this process, relevant faculty will be invited to speak about innovation in their field, both in class and during the planned panel discussion. Prereq: UNHL 1100 and second- or third-year status in the UNHL program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3501 - Love and Death in the Greek Classics

This course introduces students to classical Greek literature, focusing on love and death in Homeric epic, lyric poetry, tragic drama, the history and social science of Thucydides, the comedies of Aristophanes, and Plato's philosophical dialogues. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3503 - Ethics, Academic Integrity, and Social Responsibility

This course combines research and class discussions in such a way that theories, viewpoints, and practical proposals regarding ethics and its application to intellectual responsibility are understood in their own right as well as in relation to other human activities. One daunting task will be facing up to the challenge of how to use the increasingly powerful information tools provided by universities. In the last third of the semester, students will be asked to work in teams on projects dealing with current ethics controversies. Prereq: UNHL 1100; not open to students who have taken UNHL 3100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3530 - Making the Modern Environment

Delve into how human societies have shaped the natural world. Interdisciplinary course asks how a distinctly modern environment was produced and discusses the origins of the contemporary environmental crisis. Analyzes historical contexts and scientific developments that have refashioned landscapes, altered human and ecological systems, and deeply affected ways of knowing and understanding environmental change. Restriction: Restricted to students in the University Honors and Leaders Program. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3620 - Migration, Modernity, and Literacy

An examination of the causes, consequences, difficulties, and enduring problems of migration in contemporary global society. Political, legal, and educational problems of modernity and mass migration are analyzed. Course work includes social scientific research into historical and contemporary migration flows. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3625 - Food Justice: Urban Agriculture, Place, and Culture

Addresses systemic inequities in access to fresh and healthy food as illustrated by neighborhoods termed "Food deserts." Questions examined include how sustainable/ethical relationships can be established between growing food and creating community, developing consciousness of place, and affirming cultural food/agricultural traditions. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3630 - Migration and Development

The impact on societies across the globe of a record 214 million-plus migrants living outside of their countries of birth. An interdisciplinary overview of the historical roots, causes, and consequences in receiving and sending nations of contemporary international migration flows. Topics include brain gain and brain drain, gender differences, immigrant diasporas, remittances, acculturation, circular migration illegal immigrant flows, and transnational human trafficking. Focus on experiences in North America, Europe, the Middle East, and Southeast Asia. Students will have the opportunity to compare and contrast immigrant communities in the Denver region. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3816 - Ethical Problems with Emerging Technologies

This course identifies a number of the emerging technologies across various industries and disciplines, and seeks to understand the technologies and its practical applications in the real world, as well as any additional potential utilizations. It then explores the potential ethical challenges for both the developer and the industry, as well as for the nation in which it is developed, the U.S. and the world. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3820 - The Economics of Life

Study of the economic approach to human behavior and its application to the analysis of markets and areas including politics, law, family life, and other social issues. Students will develop an understanding of how the economic approach differs from other approaches to analyzing these phenomena and for the possibilities and limitations of the economic approach. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3825 - Irish Music, Peace, Politics, and Popular Culture

This course explores traditional and contemporary music in Ireland, examines Irish politics and the peace process in the Republic and Northern Ireland, and considers ways in which various forms of Irish popular culture have represented Irishness and Irish identity. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3827 - American Music, American Culture: Folk, Roots, and the Blues

Explores 20th-century American history, integrating a multiplicity of cultural perspectives, regional identities, and musical events and personalities. We will explore the relatively recent history of race relations in this country, as well as cultural policies and changemakers throughout the development of the modern music industry. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3830 - Jazz in American Culture

This class will explore the influence of jazz music (and related forms like ragtime and the blues) on American culture more generally. Specific topics to be explored include the Post-Reconstruction Race Politics, the Delta and the Great Migration, New Orleans, and the Harlem renaissance. Important figures of African-American literature, and Jazz & the Blues music will also be presented. Students will examine a multitude of literary and musical experiences through novels, short works, biographies, and listening. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 3832 - Theater Practices, Politics, and Social Justice

This class will emphasize performance techniques from master theatre practitioners, as they illuminate the relevance of theatre both as a form of artistic expression and a vehicle for social change. Students will read major dramatic works, attend plays and create original performances exploring issues of political and social concern. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours: 3 to 3**

UNHL 3837 - Representing Community in Literature, Drama, and Film

This writing intensive course examines several artistic genres that illustrate and interrogate notions of community. Communities may include family, utopias, military, or towns, and students will be required to identify and investigate a community of their choosing. Community in the classroom is crucial to the class, and students will assign homework to each other in addition to presenting their work in class. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours: 3 to 3**

UNHL 3840 - Creativity and Social Change

This course draws on historical cases and contemporary movements to examine the ways human creativity - broadly situated across artistic, scientific, and social activities - can foster social change. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours: 3 to 3**

UNHL 3870 - History and Culture of Spanish-Speaking World

Study of the history, culture, politics, and social environment of Spain and/or the Spanish-speaking world. Topics determined by instructor. Prereq: UNHL 1100; UNHL 2870, SPAN 2120, or demonstration of second-year Spanish language proficiency through placement exam. Max hours: 3 Credits. **Semester Hours: 3 to 3**

UNHL 3910 - Ideology and Revolution

Was ideology invented in the 19th Century? Conservatism, Liberalism, Nationalism and Socialism were all invented in the short span of 1789 - 1870. In this course we read works of Edmund Burke, Karl Marx, J.S. Mill, and others who reacted to the French and Industrial Revolutions, hoping to repair the social fabric. Prereq: UNHL 1100. Max hours: 3 Credits. **Semester Hours: 3 to 3**

UNHL 3939 - Internship

Experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Cumulative GPA of 3.0 or above and permission of UNHL Director/Associate Director. Repeatable. Max hours: 3 Credits. **Semester Hours: 1 to 3**

UNHL 3995 - Global Study

UNHL Academic Honors track and Leadership Studies track. Travel study, with location and topics to be selected by the instructor. Prereq: UNHL 1100, 2755, and permission of the UNHL Director. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 4

UNHL 4420 - Health Behaviors, Markets, and Policy

This course is focused on policies that affect the provision of health care, the consumption of health care, and health behaviors. Students will be exposed to research from a variety of disciplines on health care markets, the role of government, and the causes and consequences of risky health behaviors. Restriction: Restricted to students in the University Honors and Leaders Program (UNHL). Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 4820 - Scientific Thinking

Intensive analysis of primary literature from across the sciences. Students will expand their understanding and appreciation of the scientific method and develop the ability to critically analyze and evaluate experimental design in both scientific and social contexts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UNHL 4840 - Independent Study

Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

UNHL 4850 - Faculty-Mentored Research

UNHL student research conducted under the supervision of UC Denver faculty. Prereq: Permission of sponsoring faculty mentor and UNHL Director. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

UNHL 4991 - Senior Research Seminar I

Capstone experience for UNHL program. Students will work in teams on research projects of a multidisciplinary nature. Prereq: Fourth-year standing in the UNHL program or permission of the UNHL Director. Max hours: 2 Credits. **Semester Hours:** 2 to 2

UNHL 4992 - Senior Research Seminar II

Continuation of UNHL 4991. Students will work in teams on research projects of a multidisciplinary nature. Prereq: Fourth-year standing in the UNHL program or permission of the UNHL Director. Max hours: 2 Credits. **Semester Hours:** 2 to 2

Urban & Regional Planning

URPL 3000 - Planning the Built Environment

Learn the multidisciplinary field of urban planning, focusing on how to plan and design sustainably at multiple scales: site, neighborhood, city, region. We use lecture, discussion, and applied learning techniques, including fieldwork, mapping, case studies, guest practitioners, and in-class workshops. Restriction: Restricted to undergrads with sophomore standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 4000 - Sustainable Urban Planning

Covers the multidisciplinary practice of urban planning, focusing on concepts, policies, and tools to plan sustainably at multiple scales; site, neighborhood, city, and region, using lecture, discussion, and applied learning through field work, case studies, guest practitioners, and in-class workshops. Prereq: ENGL 1020 Restriction: Restricted to students with junior standing or higher. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5000 - Planning History and Theory

This course offers a comprehensive review of the major historical and theoretical developments in planning; the human aspects of planning as a social, political, and community-oriented process; public engagement; social justice; planning leadership and advocacy; and the future of planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5010 - Planning Methods

This course focuses on the most commonly applied quantitative and qualitative methods used in planning; data organization and management principles; and various ways to collect, analyze, and communicate data as a fundamental component of the planning process. Cross-listed with GEOG 4000. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5020 - Planning Law and Institutions

This course covers the legal basis for planning; the evolution of planning law through a comprehensive review of landmark court decisions; and the types and hierarchies of governments, their powers and relationships, and how planning operates within those governmental contexts. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5030 - The Planning Profession

This course offers a comprehensive survey of the breadth and depth of the planning profession; different types of planners and the organizations that employ them; business aspects of planning; planning solicitation process; planning ethics; and professional/career development in planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5040 - Urban Sustainability

Examines the interface of the natural and social realms in cities. Topics include the environmental history of cities; the causes, environmental impacts and mitigation of sprawl; urban green infrastructure; and best practices in planning environmentally sustainable cities and suburbs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5050 - Urban Development

Explores the procedures, policies and politics of planning and real estate development. Topics include the relationship between planning goals and regulations; real estate development and finance; land division, entitlement, and regulation; site planning and development review; and public infrastructure. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 5060 - Planning Workshop

An introduction to the studio environment, this course provides students with experience and knowledge/skills development in physical planning and design, the planning process, plan making, and collaborative planning, plus introductory instruction in GIS and SketchUp. Max hours: 6 Credits. **Semester Hours:** 6 to 6

URPL 6000 - Planning Project Studio

This studio course requires student teams to complete a substantial planning project using a comprehensive set of knowledge/skills for real-world clients. Five focus area options offered annually: Healthy Communities, Urban Revitalization, Regional Sustainability, International Experience, and Summer in Colorado. Prereq: URPL 5060 or 6630. Max hours: 6 Credits. **Semester Hours:** 6 to 6

URPL 6200 - Land Development Regulations

This course provides a comprehensive exploration of the various components of land development regulation, including preliminary plats; general/final development plans; zoning; PUDs; variances; site plan/development review; land use regulators; regulatory processes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6205 - Plan Making

This course offers a broad overview of the various types of plans and the specific processes involved in their creation, including comprehensive plans; rural/small town plans; corridor plans; small area plans; campus/ institutional plans; special plans. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6210 - Planning Engagement

This course focuses on roles and methods of public engagement in planning. Topics include planning advocacy; public meetings; public engagement techniques; diverse publics; controversial planning topics; mediation. Restriction: Restricted to Graduate Urban and Regional Planning students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6215 - Analyzing the Built Environment

This course explores various means and techniques used to analyze and characterize the built environment, including land division and development measures; urban morphology; and analyzing the spatial attributes of cities and regions at varying scales and perspectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6220 - Advanced Research Techniques

This course offers an in-depth look at a variety of research principles and techniques, including advanced qualitative and quantitative data collection; survey design; sampling; probability distributions; hypothesis testing; inferential statistics; other topics associated with scholarly research. Prereq: URPL 5040 or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6225 - Urban Policy Analytics

Students learn quantitative analysis techniques that help answer key questions for planning, such as whether implemented policies had their intended effects. Topics covered include research design, working with databases, spreadsheet analytics, and bivariate/multivariate statistical analysis. Prereq: URPL 5010 - Planning Methods or instructor's permission. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6249 - Project Management

Introduces the knowledge and skills of Project Management (PM) in a business environment. Emphasis will be on the entire project life cycle, the project management process groups and the knowledge areas as presented in the Project Management Body of Knowledge (PMBOK), from the Project Management Institute (PMI). Managerial aspects, quantitative tools, and traditional techniques of Project Management will be covered. A variety of projects will be examined. Note: Cannot receive credit for both DSCI 6820 and BUSN 6820. Cross-listed with BANA 6650. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6250 - GIS for Urban Planning

This course is an accelerated introduction to GIS that focuses on spatial analytics for Urban Planning. The course includes advanced GIS applications and tools; GIS integration with other applications and technologies; and innovations in geo-spatial data collection, analysis, and presentation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6255 - Emerging Planning Technologies

This course explores the rapid pace of innovation in planning-related technologies and offers a comprehensive review of the latest web-based and mobile applications, and new technologies used in virtual participation/engagement, data collection/visualization, social media/crowdsourcing, and geo-spatial data collection and analysis. Max hours: 3 Credits.

Semester Hours: 3 to 3

URPL 6260 - Advanced Geo-Spatial Methods

Students will be introduced to the hardware, software, theory, and skills required to use Geographical Information Systems (GIS). In this course, students will learn how to use GIS software to manage, analyze, map, and present spatial data to support the planning and design processes. Prereq: An introductory GIS class is required before taking this class. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6265 - Visualization for Planning

This course covers visual design theory and advanced instruction in Adobe Illustrator, Photoshop, and InDesign to create compelling info-graphics, renderings, and reports, as well as advanced instruction in SketchUp to create 3D visualizations at multiple urban scales.

Restriction: Restricted to graduate level MURP students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6300 - Community and Environmental Health Planning

A place-based approach to understanding the social, economic, environmental, and political factors that influence individual and community health with a focus on reducing health disparities. Covers policies, practices, data, and methods for healthy communities planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6305 - Healthy Community Assessments

This course focuses on defining, organizing, and conducting Health Impact Assessments, health measures, policies, best practices, and other types of studies and analyses related to the link between the built environment, public health, and healthy communities. Max hours: 3 Credits.

Semester Hours: 3 to 3

URPL 6310 - Community Food System Planning

Healthy communities require sustainable local and regional food systems. This course examines how communities can collaboratively develop and implement programs, processes and practices that help ensure food security and equitable access to healthy food options for all populations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6349 - Global Health Studies II

Global Health Studies II: Comparative Health Systems. The course has three parts: (1) examines the social and cultural construction of sickness, systems of etiology cross culturally, the therapeutic encounter, varying roles of healer and patient, and the cultural basis of all healing systems; (2) considers health systems in the context of global health reform, and the history, organization, and roles of institutions of global health governance; and (3) considers the interrelationship of health, foreign policy and global security. Cross-listed with PBHL 4020. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6350 - Form and Formation of Cities

This course investigates the origins and types of human settlements; the history of cities and urbanization; urban morphology and the evolution of the built environment; urban form principles and theory; and types of urbanism. Cross-listed with ARCH 6270, URBN 6633, and LDAR 5530. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6355 - Urban Redevelopment Strategies

This course focuses on the best practices and strategies used to help revitalize urban areas. Topics include urban infill development; TODs; adaptive reuse; historic preservation; design review; parking; public spaces; brownfield/grayfield redevelopment; culture/tourism; special districts; incentives/funding; and revitalization policies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6360 - Urban Infrastructure

This course provides a comprehensive exploration of transit planning, including transit planning fundamentals; transit routes and systems; transit modes and technologies; ridership modeling; scheduling; operations; funding; policies and regulation; relationship to land use; and facilities/design requirements. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6365 - Parks and Public Spaces

This course offers a focused look at the role of parks and public spaces in the development and activation of cities; their designs, qualities, and components; management /operations; funding; policies; equal access; role as community and economic development tool. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6370 - Sprawl and Growth Management

This course addresses causes of sprawl (large lot zoning, highway subsidies, suburban amenities, taxes and municipal services), social and environmental consequences of sprawl,

anti-sprawl growth management policies, open space preservation methods, and retrofitting suburbs. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6397 - Design Policy/Regulation

Argues that a role of urban designers is to shape built environment through combination of physical intervention and policy development. Students review urban economic and real estate trends and assess zoning/land use regulations to understand impacts on built environment quality. Cross-listed with URBN 6642. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6398 - Design Process

Advances current practice by exploring innovative methods of design analysis, production, representation, and communication. Community participation and civic engagement are integral components of seminar. Cross-listed with URBN 6641 and LDAR 6741. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6399 - Sustainable Urban Infrastructure

Focuses on developing uniform vocabulary on sustainable infrastructure across science & technology, architecture & planning, public policy, and health & behavioral sciences. Students learn concepts, principles/pathways and evaluation techniques for promoting the diffusion of sustainable urban infrastructures. Cross-listed with CVEN 5460. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6400 - Community Development

This course introduces community development, examining planners' and other stakeholders' roles in the field; key theories and practices; community dynamics; community-based organizations; asset-based development; social equity; and the influence of local physical and economic factors on community development. Cross-listed with ARCH 6256. Restriction: Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6405 - Urban Housing

This course examines housing trends and patterns; supply and demand factors; housing policies; housing challenges (e.g., inequitable distribution, special needs, segregation/discrimination, and homelessness); sociological, demographic, and economic considerations; and the roles of planners and the public and private sectors. Cross-listed with LDAR 6755 and ARCH 6205. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6410 - Social Justice in Planning

This course investigates various social justice issues encountered in planning, including conflict resolution; advocacy; environmental justice; social equity; culture and diversity; disadvantaged populations; public engagement techniques; affordability; equal access; and policy impacts. Cross-listed with LDAR 6637 and ARCH 6258. Restriction: Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6449 - Urban Social Problems

Examines local government from the perspective of sociology and group dynamics. Course could include some or all of the following subjects: neighborhoods and community groups, class and race relations, community crime, social service issues, immigration, the underclass in American society, and related urban social problems. Cross-listed with PUAD 5628 and 7628. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6450 - Urban Economic Analysis

This course introduces students to the fundamentals of urban, land, and transportation economics, covering topics such as land markets, environmental regulation, infrastructure and service finance, impact fees, land value capture, pricing incentives, decision analysis, and cost-benefit analysis. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6455 - Real Estate Development and Finance

The course offers a detailed analysis of the real estate development process, its relationship to the planning/design profession, and financial aspects of real estate development including measures of value, capitalization rates, capital budgeting, debt and equity markets and taxation. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6460 - Green Real Estate Development

This course offers an exploration into the principles, designs, policies, and best practices relating to sustainable real estate development. Topics include infill development; transit-oriented development; LEED-ND; green buildings; universal design; mixed-income projects; and net-zero developments, among others. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6499 - Preservation Theory and Practice

Philosophical questions in preservation practice; balancing significance in the environment with natural decay and demands for change. Policy issues as well as preservation and adaptation design. Cross-listed with HIPR 6010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6500 - Environmental Planning/Management

This course addresses issues related to planning under major environmental laws, ecosystem service-based management, urban green infrastructure, urban watershed and river management, urban forest and parks planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6505 - Enviro. Policy & Regulation

This course focuses on the important field of environmental policy and regulation, including topics such as the National Environmental Policy Act (NEPA); environmental justice; environmental law; land use conflicts; contamination/remediation; environmental regulators; and regulatory policies and enforcement. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6510 - Energy/Natural Res. Planning

This course provides an overview of the issues associated with energy and natural resource planning. Topics include: energy policy; alternative energy development; water resources; extraction/mining; natural resource protection and regulation; resource management, policies, politics, and technologies. Cross-listed with GEOG 4260. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6515 - Sustainable Planning & Design

This course takes a comprehensive look at the principles of sustainable planning and design. Topics include: sustainability defined; measuring sustainability; sustainable planning/practices; sustainable design; LEED and other sustainability programs and organizations; environmental quality; sustainability advocacy. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6547 - Urban Ecology

This lecture/seminar will cover ecological principles as applied to urban systems (lecture portion) and students will do an intensive study, presentation, and discussion on the topic of their choosing (seminar portion). Cross-listed with LDAR 6655. Restriction: Restricted to graduate students in the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6548 - Defining & Measuring Sustainability

Unique cross-disciplinary course that teaches students community engagement strategies to define sustainability goals. Life cycle assessment and material flow analysis tools used to measure environmental sustainability benchmarks. Fieldwork applies both tools to cities in Colorado. Cross-listed with CVEN 5461. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6549 - Environmental Impact Assessment

The objective of this course is to provide the foundation for understanding the environmental impact assessment process, its legal context, and the criteria and methods for procedural and substantive compliance. Prereq: URPL 5530 or permission of instructor. Cross-listed with GEOG 4220, 5220. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6550 - Transportation Planning/Policy

This course examines policy issues in urban transportation planning: how transportation system design and political/institutional contexts shape transportation decision-making; major modes of urban transportation; and the social, environmental, economic, energy, and health impacts of transportation systems. Cross-listed with GEOG 4670. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6555 - Transportation, Land Use, and the Environment

Students will learn how current transportation modes shape regions and how future transportation technologies might impact us. Topics include policy making and governance; land use interactions with transportation investments; climate change and resilience; energy use; environmental justice; and equity considerations. Restriction: Graduate level students. Cross-listed with GEOG 4630. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6560 - Transit, Pedestrian, and Bicycle Planning

Course provides a comprehensive exploration of planning for transit and non-motorized modes (bicycling and walking). Topics include demand estimation, travel behavior, design and suitability analysis, land use interactions, public policy, and evolving technologies. Restriction: Graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6565 - Pedestrian & Bicycle Planning

This course provides a detailed focus on the unique planning issues and factors involved with bicycle and pedestrian modes of transportation, including pedestrian/bicycle planning fundamentals; routes and systems; facilities and design requirements; funding; maintenance and operations; policies; and best practices. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6598 - Traffic Impact Assessment

Covers (1) procedures to satisfy state and local requirements for transportation impact studies, (2) methods to perform trip generation, distribution, and traffic assignment for impact analyses, and (3) analysis of transportation impacts on residential communities, mode choice, regional business (downtown or suburban), peak and off-peak travel times, noise, safety, parking and pedestrians. A course project requires students to develop an application of analysis software to a case study area. Cross-listed with CVEN 6512. Restriction: Graduate standing or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6599 - Sustainable Transportation Systems

This course examines notable topics in sustainable transportation: demystifies conventional transportation engineering methods; and explores empirical examples of why such methods are often misguided. The intent is to enlighten engineering students and help support planning/policy students interested in transportation sustainability. Cross-listed with CVEN 5633. Restriction: graduate standing or permission of instructor. Max hours: 3 Credits.

Semester Hours: 3 to 3

URPL 6600 - Regional Growth and Equity

Explores the institutions, policies, laws and funding that support planning for housing, transportation, infrastructure, air quality, and job creation at the metropolitan scale. Students will learn analytic techniques to study the labor market, economic growth and performance, commuting patterns, etc. Restriction: Restricted to graduate level students. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6605 - Regional Economic Systems

This course offers a comprehensive investigation into regional economic systems; metropolitan economies; regional economic development; regional market assessment; job generation; taxes/spending; and fiscal/economic policies and impacts at the metropolitan, regional, and statewide scale. Cross-listed with GEOG 4400. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6610 - Planning Sustainable Suburbs

This course takes a detailed look at the unique characteristics, issues, and challenges associated with planning and retrofitting automobile-oriented suburban communities and the opportunities for development of new communities using sustainable planning and design principles. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6615 - Small Town, Rural, and Resort Planning

This course investigates the unique characteristics, issues, and challenges associated with planning in small and/or rural communities, including agricultural issues and farmland conservation; growth management; rural economic development; and small downtown revitalization strategies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6620 - Tourism and Resort Planning

This course investigates the unique aspects associated with planning and developing sustainable tourism infrastructure. Topics include: eco-tourism; historic tourism; cultural tourism; urban tourism; sports and recreation planning; regional tourism planning; and sustainable resort planning and development. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6625 - Sustainable Planning for Tourism and Small Towns

This course is about sustainably planning for tourism-dependent communities, particularly small towns. It focuses on the impacts of tourism on fragile cultural and ecological environments and addresses how to assess impacts, mitigation approaches and tools, and communication with the public. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6645 - Disaster/ClimateChangePlanning

Introduces students to concepts and debates that shape disaster and climate change studies. Features case studies of disaster and climatic issues affecting Colorado and the Rocky Mountain region. Looks specifically at how planning can reduce risk and increase local resilience.

Semester Hours: 3 to 3

URPL 6650 - International Development Planning: Theory and Practice

This course examines key development issues and planning approaches in cities of the Global South. Topics include: development theory; legacies of colonial urbanisms; actors and institutions in development; urban informality; water and sanitation; housing and land tenure; and climate change, among other topics. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6655 - Comparative International Planning

This course investigates the global dimensions of planning, including a survey of global planning issues; a comparative analysis of planning philosophies, policies, techniques and approaches used throughout the world; and international planning coordination and organizations. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6675 - International Field Research: Methods and Analysis

This course will teach students the fundamentals of data collection, analysis, and dissemination in an international - and mostly developing world - context. Restriction: Restricted to graduate students within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6800 - Special Topics: Urban and Regional Planning

Various topical concerns are offered in urban and regional planning, theory, concepts, methods, case studies and practice. Repeatable. Max hours: 9 Credits. **Semester Hours:** 3 to 3

URPL 6805 - Planning Internship

Designed to provide professional practice experience in urban and regional planning. The emphasis is on actual work experience in settings with client groups as the students assist them

in determining solutions to their problems. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

URPL 6810 - Independent Study: URPL

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to urban and regional planning. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 3

URPL 6850 - ACE Mentoring

Graduate students work with professional architects, designers, and engineers mentoring students in selected local high schools to learn problem solving, graphics and model making to produce a design project. Student mentors develop lesson plans, outcomes and keep a weekly journal. Cross-listed with ARCH 6470 and LDAR 6470. Restriction: Restricted to majors within the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6900 - Planning Capstone

Planning Capstone A requires students to identify an independent study/small group project of their choosing and develop a detailed plan to complete the project. Prereq: URPL 6000 or instructor consent. Max hours: 6 Credits. **Semester Hours:** 6 to 6

URPL 6920 - Planning Thesis A

Spanning two semesters, Planning Thesis requires students to plan and complete a research thesis of their choice. Part A provides instruction for proper thesis research, analysis, and writing while students develop a detailed work plan and begin their research. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6925 - Planning Thesis B

Spanning two semesters, Planning Thesis requires students to plan and complete a research thesis of their choice. Part B includes the completion of the research and the thesis document, and presentation of the project to the student's thesis committee. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URPL 6940 - Teaching Assistantship

Work as teaching assistant, mentored by the class instructor. Assist with curriculum delivery and development and grading of assignments while learning about pedagogical methods. This is intended for students who may be considering a career in teaching. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Urban Design

URBN 6610 - Design Studio I

Working at the urban/metropolitan scale, this studio introduces design through urban structure and morphology, presenting the city as a complex ecological organism comprised of interrelated systems. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 6 to 6

URBN 6611 - Design Studio II

Advances understanding and application of urban design tools, methods and practice. Studio emphasizes designer's proactive role in shaping design using regulations and policy. Students consider real estate development, economics, aesthetic criteria, historic preservation, and methods of effective community participation. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 6 to 6

URBN 6612 - Advanced Travel Design Studio

Students travel to international or US urban location(s) to engage advanced design questions. Studio operates within network of professionals involved in contemporary projects. Focus on complexities of issues-based practice. Students develop complete project and consider context, politics, economics and regulations. Max hours: 6 Credits. **Semester Hours:** 6 to 6

URBN 6633 - Form and Formation of Cities

This course investigates the origins and types of human settlements; the history of cities and urbanization; urban morphology and the evolution of the built environment; urban form principles and theory; and types of urbanism. Cross-listed with URPL 6350, ARCH 6270, and LDAR 5530. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6640 - History of the City

Introduces students to the history of global cities through selected typologies. Explores similarities and differences among cities considered against the larger cultural, political and socio-economic envelope of which they are part. Provides awareness of origins, growth and evolution of urban form. Cross-listed with ARCH 6240. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6641 - Design Process

Advances current practice by exploring innovative methods of design analysis, production, representation, and communication. Community participation and civic engagement are integral components of seminar. Cross-listed with URPL 6398 and LDAR 6741. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6642 - Design Policy

Argues that a role of urban designers is to shape built environment through combination of physical intervention and policy development. Students review urban economic and real estate trends and assess zoning/land use regulations to understand impacts on built environment quality. Cross-listed with URPL 6397. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6643 - Visualization for Planning

This course covers visual design theory and advanced instruction in Adobe Illustrator, Photoshop, and InDesign to create compelling info-graphics, renderings, and reports, as well as advanced instruction in SketchUp to create 3D visualizations at multiple urban scales. Restrictions: Restricted to ARUR-MUD majors in the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6644 - Sustainable Urbanism

This seminar explores the connections between ecology and urbanism. It will examine the multiple, interrelated ecological and social systems operating in the city. Students will explore innovative design processes and techniques that serve to create a higher quality of life and place with a particular emphasis on the effectiveness of sustainable design approaches at varying scales. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6645 - Global Design Practice

This seminar will educate students about critical issues related to practicing design in a global context. Course will examine diverse issues of design and planning practice from contracts, communication and culture to remote research, design opportunities and ethics. Prereq: URBN 6612. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6651 - Design Practice

Introduces students to the business of urban design through contact with prominent and innovative urban design professionals. Examines issues of design implementation; project management; communication, negotiation and facilitation; leadership; and finance. Restrictions: Restricted to ARUR-MUD majors in the College of Architecture and Planning. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6652 - Design Seminar

Investigates topical issues in urban design, typically within the framework of a theme running through an entire course of study. Focus is on critical evaluation of theory, process and methods. Cross-listed with LDAR 6652. Max hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6686 - Special Topics: Urban Design

Various topical concerns are offered in urban design history, theory, elements, concepts, methods, implementation strategies, and other related areas. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

URBN 6840 - Independent Study: URBN

Studies initiated by students or faculty and sponsored by a faculty member to investigate a special topic or problem related to urban design. Repeatable. Max Hours: 3 Credits. **Semester Hours:** 1 to 3

URBN 6930 - Urban Design Internship

Designed to provide professional practice experience in urban design. Emphasis on actual work experience in settings with client groups as students assist them in determining solutions. Program directors approval required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

Urban Teacher Education

UEDU 1930 - Introduction to Socially Just Education

This course examines sociological issues concerning urban schools, communities and provides an overview of school culture, diversity and social realities in American schools. Students will critically examine education issues that affect their lives, their community and classrooms throughout the country. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4040 - Planning for Learning

This course explores multiple aspects of student learning: Including 1) standards-based instruction 2) cultural responsive instructional design, 3) assessment and data, and 4) differentiation in curriculum and instruction so that meaningful instruction becomes accessible to all students. Restriction: Professional Year Admission required. Cross-listed with 5040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4050 - Elementary Capstone: Planning, Instruction & Assessment

The purpose of this course is to re-visit multiple aspects of instructional and curriculum design, implementation, and evaluation. The goal is to promote access to knowledge for all learners, including those who are diverse linguistically and culturally and those identified with special needs. Cross listed with UEDU 5050. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4052 - English/LA & Social Studies Capstone: Secondary Ed

Through teaching units of instruction in school placements, secondary English/LA and Social Studies teacher candidates learn both unit and lesson design, assessment of student learning, and differentiation of curriculum and instruction to promote access to knowledge for all learners. Cross-listed with UEDU 5052. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4110 - Tchg Literacy in Eng Ed

Designed to meet both Colorado Literacy Council & Colorado Performance-Based Standards for prospective secondary English/LA teachers concerning Knowledge of Literacy, the course provides knowledge and practice using specific literacy methods to enhance students' literacy development in English/LA/reading classrooms. Cross-listed with UEDU 5110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4464 - Methods of Teaching Social Studies

One of two courses on linguistically and culturally relevant social studies teaching. Course content includes geography, economics, civics. Cross-listed with UEDU 5464. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4465 - Methods of Teaching History

One of two courses on linguistically and culturally relevant history teaching. Cross-listed with UEDU 5465. Restriction: Professional Year Admission required. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 4840 - Independent Study

Independent Study in Urban Community Teacher Education, Topic of study varies according to project. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 3 to 3

UEDU 4845 - Special Topics:

Course topics will vary depending on faculty and student interests. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 5

UEDU 4931 - Internship & Lrng Comm I

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are

specified in the program handbook. Cross-listed with UEDU 5931. Restriction: Professional Year Admission required. Max hours: 2 Credits. **Semester Hours:** 2 to 2

UEDU 4932 - Internship & Lrng Comm II

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are specified in the program handbook. Restriction: Professional Year Admission required. Cross-listed with UEDU 5932. Max hours: 2 Credits. **Semester Hours:** 2 to 2

UEDU 4933 - Internship & Lrng Comm III

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are specified in the program handbook. Restriction: Professional Year Admission required. Cross-listed with UEDU 5933. Max hours: 6 Credits. **Semester Hours:** 6 to 6

UEDU 4934 - Extended Internship & Learning Community

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, they participate in the activities of a professional learning community. Cross-listed with UEDU 5934. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 4 to 8

UEDU 5015 - TFA Professional Learning Communities

The Teach for America Professional Learning Communities are designed to be a resource and forum for content groups to collaborate on best practices in assessment, instruction, and data gathering. As truly purposeful communities, they exhibit five characteristics: a shared mission and vision, high levels of collective efficacy, strategic use of all available assets, outcomes that matter to all, and adherence to agreed-upon processes. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5040 - Planning for Learning

This course explores multiple aspects of student learning: Including 1) standards-based instruction 2) cultural responsive instructional design, 3) assessment and data, and 4)

differentiation in curriculum and instruction so that meaningful instruction becomes accessible to all students. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Cross-listed with 4040. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5050 - Elementary Capstone: Planning, Instruction & Assessment

The purpose of this course is to re-visit multiple aspects of instructional and curriculum design, implementation, and evaluation. The goal is to promote access to knowledge for all learners, including those who are diverse linguistically and culturally and those identified with special needs. Cross listed with UEDU 4050. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5052 - English/LA & Social Studies Capstone: Secondary Ed

Through teaching units of instruction in school placements, secondary English/LA and Social Studies teacher candidates learn both unit and lesson design, assessment of student learning, and differentiation of curriculum and instruction to promote access to knowledge for all learners. Cross-listed with UEDU 4052. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5060 - Motivation and Engagement in Curriculum and Learning

This course focuses on the Six Cs of motivation and engagement; the framework designed to reach these students who are not complaint learners. This course allows teachers to think deeply about their role in motivating and engaging students and allows participants to apply the research to their individual classrooms. The classes incorporate the M.E. (motivation and engagement) Framework into each lesson. Teachers will gain a deep understanding of motivation and engagement through modeling, research, and a "transfer" of knowledge. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5070 - Curriculum Theories in Urban Education

Topics in this course include: curriculum theory; the debate on the purpose of curriculum; multicultural education; critical race theory; social class and school improvement; the intended and unintended consequences of school accountability, reform and closures; teacher retention; and teacher burnout. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5075 - Transforming Pedagogy for the 21st Century

This course is designed to support teachers in establishing a classroom culture centered on fostering students' 21st Century Success skills: collaboration, communication, creativity, and critical thinking. Teachers will explore ways of implementing and supporting 21st-century skills in planning and instruction. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5110 - Tchg Literacy in Eng Ed

Designed to meet both Colorado Literacy Council & Colorado Performance-Based Standards for prospective secondary English/LA teachers concerning Knowledge of Literacy, the course provides knowledge and practice using specific literacy methods to enhance students' literacy development in English/LA/reading classrooms. Cross-listed with UEDU 4110. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5240 - Culture of Education Policy

This course examines major issues in education policy analysis. Students will be required to critically analyze an educational policy issue uncovering the context, determining how the policy was implemented and what the outcomes were, intended as well as unintended. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5340 - Leading Social Emotional Learning in P-12 Schools

In this course, scholars will learn the various definitions, purposes and value of socialemotional learning (SEL) in order to lead social-emotional learning in P-12 schools. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5464 - Methods Teachg Social Studies

One of two courses on linguistically and culturally relevant social studies teaching. Course content includes geography, economics, civics. Cross-listed with UEDU 4464. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5465 - Methods of Teaching History

One of two courses on linguistically and culturally relevant history teaching. Cross-listed with UEDU 4465. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5470 - Democracy and Social Studies Education

This course explores the current and historical relationship between democracy and social studies education and challenges teachers to think critically about challenging students to not only participate in democracy but transform it. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5660 - History of Schooling in the United States

This course introduces education professionals to the history of contemporary public school. The contents of this course emphasize the ways in which people from marginalized national and cultural groups have experienced education through eras of compulsory schooling, school

segregation, and the contemporary context of school reform. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5705 - Global Experiential Learning

Develop global competency skills. Research problems or opportunities of global significance using 21st century skills. Engage in learning communities to reflect, analyze and communicate international educational experiences. Design global education teaching and learning or compare education perspectives. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5710 - Global Education Capstone Project

Propose a culminating project that allows integration of previous coursework and travel experience to translate into practice. Collaborate to develop a product that will be of use in a work setting, school, or classroom. Present and defend the capstone project. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5840 - Independent Study

Independent Study in Urban Community Teacher Education, Topic of study varies according to project. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 6

UEDU 5845 - Special Topics:

Course topics will vary depending on faculty and student interests. Repeatable. Max Hours: 15 Credits. **Semester Hours:** 1 to 5

UEDU 5850 - Capstone for Integrated MA

The capstone is a culminating project that provides a way for students to demonstrate the knowledge and skills they acquired during the MA program skills by planning, completing, and presenting a culminating project linked to the United States educational system. Max hours: 3 Credits. **Semester Hours:** 3 to 3

UEDU 5931 - Internship & Lrng Comm I

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are specified in the program handbook. Cross-listed with UEDU 4931. Max hours: 2 Credits. **Semester Hours:** 2 to 2

UEDU 5932 - Internship & Lrng Comm II

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are specified in the program handbook. Prereq: UEDU 5931. Cross-listed with UEDU 4932. Max hours: 2 Credits. **Semester Hours:** 2 to 2

UEDU 5933 - Internship & Lrng Comm III

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, teacher candidates participate in the activities of a school community (the school, its classrooms and the community in which the school exists). Graduated learning activities for each internship and time requirements are specified in the program handbook. Prereq: UEDU 5931 and UEDU 5932. Cross-listed with UEDU 4933. Max hours: 8 Credits. **Semester Hours:** 8 to 8

UEDU 5934 - Extended Internship & Learning Community

Teacher candidates engage in systematic observation of, participation in, design of, and reflection on curricular, instructional, and management practices across the full range of educational programs within a school. Additionally, they participate in the activities of a professional learning community. Cross-listed with UEDU 4934. Repeatable. Max Hours: 8 Credits. **Semester Hours:** 3 to 8

Women's Studies

WGST 1050 - Introduction to Women's and Gender Studies

This course provides an introduction to key concepts, themes and approaches to the interdisciplinary field of women's and gender studies. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 1111 - First Year Seminar

Restriction: Restricted to Freshman level students. Max hours: 3 Credits. **Semester Hours:** 1 to 3

WGST 2900 - Smart Girl Leadership Training and Practicum

Provides leadership and mentoring training, and a practicum in which UCD students mentor teenagers in their community or school settings. Following completion of the training, students work as near-peer mentors and coaches with groups of teenage girls in the Denver community and apply the skills learned in their training. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

WGST 3010 - Sociology of Human Sexuality

Increases the understanding of differences in views of sexuality, specifically the link between sex and reproduction and its role as the motivation for gender roles and sex acts. Explores the history of sexuality, cross-cultural studies and primate modeling. Cross-listed with SOCY 3010. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3020 - Gender, Sexuality and Race in American Popular Culture

This course explores the impact of popular culture on the lived experience of diverse women and men in America. Students will examine how cultural media (including film, television, print ads, music & digital games) can both reproduce and challenge existing structural inequalities. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3080 - Sex and Gender

Causes and consequences of sex role differentiation at the individual, group and societal levels. Current issues related to changing norms and values concerning gender in modern society are examined. Cross-listed with SOCY 3080. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3343 - Women & Gender in US History

This course will explore women and gender as drivers of US history. From politics to popular culture, jobs to sexual empowerment, civil rights to economic restructuring, we will use gender as a lens to re-envision familiar stories about American history. Cross-listed with WGST 5343, HIST 3343, and HIST 5343. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3450 - Contemporary Women Writers

Examines how women write about a specific theme, such as home, work, family, the "other," as well as how women's writing may differ from men's. Theme and genre vary. Prereq: sophomore standing or higher. Cross-listed with ENGL 3450. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3700 - Sociology of the Family

The family as a social institution. Historical development and contemporary cross-cultural analysis, with emphasis on contemporary American families. Cross-listed with SOCY 3700. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 3840 - Independent Study: WGST

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits.

Semester Hours: 1 to 3

WGST 3939 - Internship

Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

WGST 4010 - Special Topics in Women's and Gender Studies

Examines current topics in the field of Women's studies and Gender studies. Topics vary from term to term. May be repeated as long as the topic is distinct and different from courses student has already received credit for. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

WGST 4150 - Gender Politics in the Middle East: Beyond Orientalism & Islamism

This course is about Middle Eastern women's subjectivity and various forms of agency. It explores the nexus of domestic, regional and international forces that shapes the lives of Middle Eastern women, in particular in the Algerian, Egyptian, Iranian, Israeli and Palestinian contexts. Far from being silent observers of the contests among these forces, as is often assumed, Middle Eastern women have been active actors in the public arena since the 19th century colonial encounter and the importation of the modern state to the region using an array of means to make their voices heard. Theirs were often more militant than those of their countrymen. The course is divided into two parts. The first part provides an overview of the theoretical notions discussed such as Orientalism, agency, colonialism and post-colonialism. Related to this theoretical section is a historical overview that is necessary to the understanding of the contemporary conditions of Middle Eastern women and the continuities and changes between past and present. The second part covers pressing topics in the lives of Middle Eastern women in the post-independence era such as the rise of Political Islam, the global trend of democratization, war and occupation. The emphasis in this section is on women as active participants in the debates surrounding these issues, rather than as objects of them. The readings assigned include both texts written by scholars from the region and by others from without. They provide analyses of the contexts within which Middle Eastern women's struggles

take place. In addition, students will be exposed to materials produced by Middle Eastern women activists that express their own opinions and views in order to avoid misrepresentation and to reflect the diversity among them. Cross-listed with PSCI 4150. Max hours: 3 Credits.

Semester Hours: 3 to 3

WGST 4215 - Women's Rights, Human Rights: Global Perspectives

Explores the global feminist movement's campaign to "engender" human rights. Examination of women's human-rights issues and the critique of this campaign as representing cultural imperialism. Prereq: 6 hours of political science or permission of instructor. Cross-listed with PSCI 4215. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4225 - Urban America: Colonial Times to the Present

Rise of the American city from colonial times to present. Major emphasis on the process of urbanization since 1840: town promotion, the industrial city, immigration, boss politics and reform, urban technology, transportation systems, minorities, city planning, and the future of urban America. Cross-listed with HIST 4225, HIST 5225, WGST 5225, GEOG 4625. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4230 - Women in the West

Focuses on ways in which women, from the mid-19th century through the mid-20th century, of different races, classes, and ethnic background, have interacted and been active participants in the development of the western states. Cross-listed with HIST 4230, HIST 5230 and WGST 5230. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4248 - Gender, Globalization and Development

Analyzes the effects of globalization on the gendered processes of international development and strategies to empower women to achieve gender justice across race, class and national divisions. Cross-listed with PSCI 4248/5245 and WGST 5248. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4270 - Social Meanings of Reproduction

Reproduction involves more than biological processes, assuming symbolic, political, and ideological meanings. This course examines contested meanings of reproduction, including how people experience reproduction, controversies over who should reproduce (and under what circumstances), and how public policy mediates these conflicts. Cross-listed with SOCY 4270, SOCY 5270 and WGST 5270. Prereq: junior standing or higher or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4303 - Sex and Gender in Modern Britain

Examines modern British history by focusing on sex and gender as central aspects in people's lives. Considers the ways gender shapes the realms of politics, economics, society and culture in Britain from the 18th century to the present. Cross-listed with HIST 4303/5303 and WGST 5303. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Cross-listed with ENGL 4306, 5306, HIST 4306, 5306, WGST 5306. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4307 - History of Sexuality

Explores the relationships between gender and norms, sexual practice, and ideas about sexuality in Europe and the United States. Examines how sex and sexuality have changed over time and how those changes relate to social, cultural, political and economic history. Cross-listed with HIST 4307/5307 and WGST 5307. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Cross-listed with ENGL 4308, ENGL 5308, PHIL 4308, PHIL 5308, WGST 5308. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4345 - Gender, Science, and Medicine: 1600 to the Present

Examines the ways science and medicine have both shaped and been shaped by ideas about gender. Pays particular attention to the relationship between scientific/medical ideas about the sexes and the social organization of gender. Cross-listed with HIST 4345/5345 and WGST 5345. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4420 - Goddess Traditions

Explores the many forms which goddesses have assumed through history, including the Neolithic Great Mother and her heiresses in the ancient Mediterranean cultures, such as: Isis, Ishtar, Demeter, Hecate, Aphrodite, Artemis, Athena and others, and their parallels in India. Goddess traditions have encompassed a full spectrum from virgins to Great Mothers to dark underworld goddesses of death and destruction. Cross-listed with RLST 4420/5420 and WGST 5420. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4500 - Feminist Philosophy

Seminar on key debates & figures in historical & contemporary feminist philosophy. Topics may include: rights, embodiment, gender, sexuality, race, reason, & violence. Figures may include: Wollstonecraft, Stanton, Beauvoir, Judith Butler, and bell hooks. Crosslisted with WGST 5500, PHIL 4500 & 5500. **Semester Hours:** 3 to 3

WGST 4510 - Whores and Saints: Medieval Women

Studies how women are presented in texts, as well as works by women. Investigates the roles open to women and societal attitudes toward women, who were considered seductresses, saints, scholars and warriors in the middle ages. Prereq: Nine hours of literature courses or instructor permission. Cross-listed with ENGL 4510/5510, RLST 4730/5730 and WGST 5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4511 - French Women Writers

Designed to explore writings by French and Francophone women from the Middle Ages to the present. Addresses the question of what it means to be a woman and want to write. The selections include a wide variety of genres: autobiographical writings, stories, poems, manifestos, letters, political and historical documents. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in French. Cross-listed with FREN 4510/5510 and WGST 5511. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4540 - Race, Class, and Gender in Spanish Golden Age Literature

Explores works of various genres in relation to their social and political contexts in 16th and 17th century Spain, emphasizing the cultural attitudes toward race, class, and gender that inform them. Prereq or Coreq: SPAN 3101. Cross-listed with SPAN 4340/5340 and WGST 5540. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4555 - International Women's Resistance

Examines local and international struggles of women to build peace and justice by resisting systems of inequality such as colonialism, racism, patriarchy, globalization, and religious intolerance. Cross-listed with PSCI 4555/5555, ETST 4555 and WGST 5555. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4564 - Gender and Politics

Analysis of the political experience of women and of strategies for change. Emphasis on the U.S. Cross-listed with PSCI 4564. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4610 - Communication, Media, and Sex

Develop the tools to think critically about representations of sexuality and to understand the social construction of sexuality, the role of sexual representations in mass media and society, and the complex relationships between sexual acts, identities, and desires. Cross-listed with COMM 4610. Restriction: Restricted to Junior, Senior, or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4660 - Queer Media Studies

Queer Media Studies is a discussion-based, writing-intensive seminar that examines the history and development of U.S. LGBTQI media by focusing on media texts and production, sociocultural context, and media reception. Cross-listed with COMM 4660, COMM 5660, WGST 5660. Restriction: Restricted to students with junior standing or higher or permission from the instructor. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4710 - Women and Religion

A sociological exploration of the contemporary roles of women in religion. Course examines American and world religious groups with an eye to women's involvement. Considers how women have changed these traditions as they take on leadership roles and discusses the tensions that arise within these traditions as a result of their expanded participation. Cross-listed with HUMN 5710, SSCI 4710/5710, WGST 5710, RLST 4710/5710. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4780 - Violence in Relationships

Course focuses on the study of violence among individuals involved in intimate relationships; factors in society such as norms, laws and institutions that are related to creating violence among intimates; and social policies, prevention, intervention and treatment programs. Cross-listed with SOCY 4780, SOCY 5780 and WGST 5780. Prereq: junior standing or higher or permission of instructor. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4827 - Women and the Law

Examines the role of the courts in the development of public policy toward women; how the legal system affects the economic power, family roles, safety and political participation of women. Cross-listed with PSCI 4827 and ETST 4827. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 4840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Prereq: permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

WGST 4880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

WGST 4933 - Philosophy of Eros

What does it mean to understand philosophy as an erotic activity? This question will be examined, first by studying Plato's dialogues-such as Lysis, Symposium and Republic-and then by reading texts from Sigmund Freud, Michael Foucault and others. Cross-listed with PHIL 4933/5933, WGST 5933, SSCI 5933 and HUMN 5933. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5010 - Special Topics in Women's and Gender Studies

Examines current topics in the field of Women's studies and Gender studies. Topics vary from term to term. May be repeated as long as the topic is distinct and different from courses student has already received credit for. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Repeatable. Max Hours: 9 Credits. **Semester Hours:** 1 to 3

WGST 5225 - Urban America: Colonial Times to the Present

Rise of the American city from colonial times to present. Major emphasis on the process of urbanization since 1840: town promotion, the industrial city, immigration, boss politics and reform, urban technology, transportation systems, minorities, city planning, and the future of urban America. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with HIST 4225, HIST 5225, WGST 5225, GEOG 4625. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5230 - Women in the West

Focuses on ways in which women, from the mid-19th century through the mid-20th century, of different races, classes, and ethnic background, have interacted and been active participants in the development of the Western states. Cross-listed with WGST 4230 and HIST 4230/5230. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5248 - Gender, Globalization and Development

Analyzes the effects of globalization on the gendered processes of international development and strategies to empower women to achieve gender justice across race, class and national

divisions. Cross-listed with WGST 4248 and PSCI 4248/5245. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5270 - Social Meanings of Reproduction

Reproduction involves more than biological processes, assuming symbolic, political, and ideological meanings. This course examines contested meanings of reproduction, including how people experience reproduction, controversies over who should reproduce (and under what circumstances), and how public policy mediates these conflicts. Cross-listed with SOCY 4270, SOCY 5270 and WGST 4270. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5303 - Sex and Gender in Modern Britain

Examines modern British history by focusing on sex and gender as central aspects in people's lives. Considers the ways gender shapes the realms of politics, economics, society and culture in Britain from the 18th century to present. Cross-listed with WGST 4303 and HIST 4303/5303. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5306 - Survey of Feminist Thought

Examines changes and continuities in feminist thought from the 18th century to the present, using historical and literary materials. Explores the ways that women's characteristics, experiences, and capabilities have been understood and challenged. Cross-listed with ENGL 4306, 5306, HIST 4306, 5306, WGST 4306. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5307 - History of Sexuality

Explores the relationships between gender and norms, sexual practice, and ideas about sexuality in Europe and the United States. Examines how sex and sexuality have changed over time and how those changes relate to social, cultural, political and economic history. Cross-listed with WGST 4307 and HIST 4307/5307. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5308 - Contemporary Feminist Thought

This course explores contemporary feminist thought in philosophy and literature in the 20th and 21st centuries. Topics include lesbianism, black feminism, Chicana feminism, transgender identity, women and work and others. Cross-listed with ENGL 4308, ENGL 5308, PHIL 4308, PHIL 5308, WGST 4308. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5343 - Women & Gender in US History

This course will explore women and gender as drivers of US history. From politics to popular culture, jobs to sexual empowerment, civil rights to economic restructuring, we will use gender as a lens to re-envision familiar stories about American history. Cross-listed with WGST 3343, HIST 3343, and HIST 5343. Restriction: Restricted to Graduate and Graduate Non-Degree Majors. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5345 - Gender, Science and Medicine: 1600 to the Present

Examines the ways science and medicine have both shaped and been shaped by ideas about gender. Pays particular attention to the relationship between scientific/medical ideas about the sexes and the social organization of gender. Cross-listed with WGST 4345 and HIST 4345/5345. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5420 - Goddess Traditions

Explores the many forms which Goddesses have assumed through history, including the Neolithic Great Mother and her heireses in the ancient Mediterranean cultures, such as: Isis, Ishtar, Demeter, Hecate, Aphrodite, Artemis, Athena and others, and their parallels in India. Goddess traditions have encompassed a full spectrum from virgins to Great Mothers to dark underworld Goddesses of death and destruction. Cross-listed with WGST 4420 and RLST 4420/5420. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5500 - Feminist Philosophy

Seminar on key debates & figures in historical & contemporary feminist philosophy. Topics may include: rights, embodiment, gender, sexuality, race, reason, & violence. Figures may include: Wollstonecraft, Stanton, Beauvoir, Judith Butler, and bell hooks. Cross-listed with WGST 4500, PHIL 4500 & 5500. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5510 - Whores and Saints: Medieval Women

Studies how women are presented in texts, as well as works by women. Investigates the roles open to women and societal attitudes toward women, who were considered seductresses, saints, scholars and warriors in the middle ages. Prereq: Nine hours of literature courses or instructor permission. Cross-listed with WGST 4510, ENGL 4510/5510 and RLST 4730/5730. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5511 - French Women Writers

Designed to explore writings by French and Francophone women from the Middle Ages to the present. Addresses the question of what it means to be a woman and want to write. The selections include a wide variety of genres: autobiographical writings, stories, poems, manifestos, letters, political and historical documents. Note: This course assumes that students have passed FREN 3112 or 3122 or an equivalent course, plus one other 3000 level course in

French. Prereq: Graduate standing. Cross-listed with WGST 4511 and FREN 4510/5510. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5540 - Race, Class and Gender in Spanish Golden Age Literature

Explores works of various genres in relation to their social and political contexts in 16th and 17th century Spain, emphasizing the cultural attitudes toward race, class, and gender that inform them. Prereq: graduate standing. Cross-listed with WGST 4540 and SPAN 4340/5340. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5555 - International Women's Resistance

Examines local and international struggles of women to build peace and justice by resisting systems of inequality such as colonialism, racism, patriarchy, globalization, and religious intolerance. Cross-listed with WGST 4555, ETST 4555 and PSCI 4555/5555. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5660 - Queer Media Studies

Queer Media Studies is a discussion-based, writing-intensive seminar that examines the history and development of U.S. LGBTQI media by focusing on media texts and production, sociocultural context, and media reception. Cross-listed with COMM 4660, COMM 5660, WGST 4660. Restriction: Restricted to Graduate and Graduate Non-Degree majors (NDGR-NHL and NDGR-NLA). Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5710 - Women and Religion

A sociological exploration of the contemporary roles of women in religion. Course examines American and world religious groups with an eye to women's involvement. Considers how women have changed these traditions as they take on leadership roles and discusses the tensions that arise within these traditions as a result of their expanded participation. Cross-listed with HUMN 5710, SSCI 4710/5710, WGST 4710, RLST 4710/5710. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5720 - Sexuality, Gender and Their Visual Representations

Studies sexuality, gender and identity representation from classical antiquity through the present in the visual arts. Uses the literature of visibility, feminism, race and queer theory. Explores representations of femininity, masculinity and androgyny and their reinforcement and challenge to gender-identity norms. Cross-listed with HUMN 5720 and SSCI 5720. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5780 - Violence in Relationships

Course focuses on the study of violence among individuals involved in intimate relationships; factors in society such as norms, laws and institutions that are related to creating violence among intimates; and social policies, prevention, intervention and treatment programs. Restriction: Restricted to Graduate and Graduate Non-Degree majors. Cross-listed with SOCY 4780, SOCY 5780 and WGST 4780. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 5840 - Independent Study

Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Prereq: permission of instructor. Repeatable. Max Hours: 12 Credits. **Semester Hours:** 1 to 3

WGST 5880 - Directed Research

Students will engage in original research projects supervised and mentored by faculty. Students must work with faculty prior to registration to develop a proposal for their project and receive permission to take this course. Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the Graduate School for approval. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 1 to 6

WGST 5900 - Smart Girl Coaching Training and Practicum

Course provides training (lecture and role-playing) in coaching and mentoring which will be applied to support near-peer guides in delivering the Smart Girl curriculum in school settings. Following the completion of the training, students work as coaches for teams of near-peer mentors and groups of teenage girls in the Denver Community, and apply the skills learned in their training. Prereq: Graduate standing. Repeatable. Max Hours: 6 Credits. **Semester Hours:** 3 to 3

WGST 5933 - Philosophy of Eros

What does it mean to understand philosophy as an erotic activity? This question will be examined, first by studying Plato's dialogues-such as Lysis, Symposium and Republic-and then by reading texts from Sigmund Freud, Michael Foucault and others. Cross-listed with PHIL 4933/5933, WGST 4933, SSCI 5933 and HUMN 5933. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

WGST 6010 - Methods and Theories of Feminism and Gender Studies

Provides graduate-level interdisciplinary study in historiography, methodologies and theories of women's, gender and sexuality studies and considers how culture is constructed around these

categories. Cross-listed with SSCI 6010 and HUMN 6010. Prereq: Graduate standing. Max hours: 3 Credits. **Semester Hours:** 3 to 3

University Skills & Engagement

UNIV 1110 - College Success

This first-year course supports students by fostering academic skills and strategies, university engagement, personal strengths and goals, and diversity awareness and inclusion. No co-credit with UNIV 1111. Restriction: Restricted to Freshman level students. Max hours: 1 Credit.

Semester Hours: 1 to 1

UNIV 1111 - College Success

This first-year course supports students by fostering academic skills and strategies, university engagement, personal strengths and goals, and diversity awareness and inclusion. No co-credit with UNIV 1110. Restriction: Restricted to Freshman level students. Max hours: 3 Credits.

Semester Hours: 3 to 3

UNIV 1112 - College Success - Major and Career Exploration

UNIV 1112 is designed for first-year college students and new transfer students who are navigating their major and career exploration process. This course explores college majors, examines career development theories, and introduces students to experiential learning opportunities. Students will connect to campus resources that support major and career exploration. Restriction: Restricted to first-year students and new transfer students with less than 30 credit hours. Max hours: 1 Credit. **Semester Hours:** 1 to 1

UNIV 3110 - Special Topics: Student Success and College Student Development

This course is specifically designed to educate students to be effective student leaders. Emphasis will be placed on leadership skills, communication skills, group facilitation skills, customer service, institution policies and procedures, and academic and campus resources. Max hours: 1 Credit. **Semester Hours:** 1 to 1

Other Courses

ETST 3125 - Multiracial Families and Communities

Examines specific issues related to multiracial, multicultural and mixed heritage families in the U.S., including historical, sociocultural, economic and political factors involved. Max hours: 3 Credits. **Semester Hours:** 3 to 3

FINE 3404 - Typography II

A design laboratory that teaches advanced principles of typography including multiple page documents and complex typographic systems for print and screen. Students will create complex design projects that explore the relationship between type and image. Prerequisite: FINE 2415. Max Hours: 3 Credits. **Semester Hours:** 3 to 3

HIST 2001 - The Uses and Misuses of History

This course examines the uses and misuses of historical interpretation in the public sphere, focusing on how history has been employed over time to persuade or influence public debates. Term offered: spring, fall. Max Hours: 3 Credits. **Semester Hours:** 3 to 3