accredited institution and applied toward its graduate degree without special approval of the Graduate Dean. The following minimum provisions will apply:

- All transfer courses must have a grade of B or above.
- Credits will not be accepted for transfer until the student has established a satisfactory academic record at this university.
- For master's degree students, all work accepted for transfer must have been completed within the six-year time limit or be validated and approved by program faculty.
- Courses applied towards one degree may not be used towards another degree (although master's degree work may count as part of the requirements towards a doctoral degree as defined by a program).
- Requests for transfer of credit from other institutions must be made on the specified form. Official transcripts of credit must accompany requests.
- Master's and doctoral degree students must submit transfer requests to the program director as soon as possible after they have completed one term of coursework at UCCS. Note: Credits taken at international institutions will need to be evaluated prior to transfer.

COURSES TAKEN DURING SENIOR YEAR

Seniors at UCCS may transfer up to nine semester hours of graduate coursework, provided it meets the following requirements:

- Completed with a grade of B or above in the senior year at this University
- Completed within the time limit for the completion of the graduate degree
- Has not been applied toward the bachelor's degree
- Is approved by the program director
- Completion of the same graduate and undergraduate course is not allowed
- Retroactive changing of undergraduate credit to graduate credit is not allowed

Undergraduate credits from another institution may not be transferred into any graduate program in the Graduate School.

UNDERGRADUATE COURSES

No lower division course or undergraduate courses designed to improve basic skills may be used as credit towards a graduate degree. A program may require a student to take undergraduate courses as a means of making up deficiencies, but the credits generated in these courses may not be counted in the minimum number required for the degree.

COURSES TAKEN WHILE IN NON-DEGREE STATUS

Credits earned as an unclassified student at UCCS may be applied to a graduate degree only with the approval of the program director. Each program will establish, with the concurrence of the Graduate School Executive Committee, the maximum number of semester hours (may not exceed 12) taken in unclassified status that may be applied toward its graduate degree without special approval of the Graduate Dean.

ONLINE AND ACADEMIC OUTREACH COURSES

Students may use the resources of Online and Academic Outreach in the pursuit of graduate study only if they obtain proper academic approval from the program director. For more information visit the Online and Academic Outreach website.

GRADUATE CERTIFICATE PROGRAMS

Graduate certificate programs require the student to meet the minimum graduate school admission requirements and any additional program requirements. Refer to the appropriate program/department and college/school for specific admission requirements to a certificate program. Visit the Online and Academic Outreach website for a list of certificates.

GRADUATE COURSES

A graduate level course is any course that bears the graduate number appropriate to the discipline (i.e., 5000 - 9000) and is taught by a member of the graduate faculty.

INDEPENDENT STUDY

Independent study credit hours must not exceed 25% of the minimum number of total credit hours required for the degree.

GPA AND SATISFACTORY ACADEMIC PROGRESS

A graduate student is expected to maintain at least a (B) 3.0 cumulative average in all work attempted in Graduate School. Students who fail to maintain this standard of performance will be subject to probation or dismissal from the Graduate School by the Dean, with the approval of the major department. Appeals may be made to the campus Graduate Executive Committee. Any graduate level course applied to a master's degree must have a grade of C or better; undergraduate level courses applied to a master's degree must have a grade of B or better. Any course applied to a doctoral degree must have a grade of B minus or better. A student who receives a grade below B minus in a course may repeat that course once, upon approval of the program director. The grade received in a repeated course will substitute for the original grade and only the latter grade will be used in calculating the Graduate Program grade point average required for graduation. However, all grades received will appear on the student's transcript.

Incomplete and In-Progress Grades
Incomplete grades of "I" will convert to "F" if the work is not completed within the one-year maximum period (no extensions are approved beyond the one-year time limit) according to university policy.

An in-progress "IP" grade is given only to those graduate students who are taking thesis or dissertation credits, or a capstone course. The grade of IP will be a valid grade and must remain unchanged until the thesis, dissertation, or capstone has been completed, or following written rules of the program concerning when IP grades are changed.

REGISTRATION

New degree or unclassified students are notified of eligibility to register for coursework from the Admissions and Records Office. If this notice has not been received in time for registration, an inquiry should be made to Admissions and Records. Degree and unclassified students who do not stay continuously enrolled (having missed three consecutive semesters) must check with Admissions and Records 60 days before the next intended registration period to make sure of eligibility to register during regular registration. Former students should follow the same procedure. Degree students changing departments or graduate degree programs should begin the change process with the new department.

FULL LOAD

Graduate students will be considered to be carrying a full load during a regular semester for purposes of determining residence credit if they are registered for 5 semester hours or more in courses numbered 5000 or above, or any number of dissertation hours. A full load for purposes of determining residence credit during the summer session is 3 semester hours of work in courses numbered 5000 or above, or any number of dissertation hours.

MAXIMUM LOAD

The maximum number of credit hours a graduate student may take is 15 hours in a regular semester. The maximum number of graduate credits during a summer session is 6 hours per 4-week term and 9 hours per 8-week summer session. To take more than the maximum number of credit hours the student must receive written approval from their program director.

RESEARCH COMPLIANCE

The student, in consultation with his or her advisor, is responsible for obtaining and documenting appropriate institutional committee approval for research involving human subjects, animals and/or bio- hazards. This approval must be received prior to the student undertaking their research.

STUDENT ETHICS

Students are expected to adhere to the highest codes of personal and professional ethics, as set forth by the student code of conduct. Students who do not meet these standards may be dismissed from the Graduate School by the Graduate Dean upon recommendation of the director of the student's graduate program. A student may appeal such action under the provisions described below.

GRADUATE ACADEMIC REQUIREMENTS

Minimum academic requirements for master and doctoral degrees are detailed below; individual programs may adopt additional requirements.

MASTER'S DEGREE MINIMUM DEGREE REQUIREMENTS

The minimum requirements of graduate work for a master's degree may be fulfilled by following either Plan I or Plan II below.

Plan I (thesis)

- 30 semester hours, including 3-6 hours of thesis credit
- At least 24 semester hours must be at the graduate level
- File application for admission to candidacy for degree

Plan II (non-thesis)

- 30 semester hours
- At least 24 semester hours must be at the graduate level
- File application for admission to candidacy for degree

A candidate for the master's degree may be allowed to select Plan I or Plan II only upon the recommendation of the department/program. Some graduate programs' criteria vary from the options listed above. Students should consult their graduate program for more information if completing Plan I (THESIS). Please see the UCCS Thesis

and Dissertation Manual on the Graduate School website for complete guidelines. For thesis/dissertation committee requirements consult the program director for specific criteria.

Comprehensive Examination
See specific department program guidelines and expectations.

Masters Degree Examinations
Most master degree programs require a thesis defense, project, report, or comprehensive exam after all other requirements for the degree have been substantially completed. Students must be registered the semester in which the thesis defense, project, report, or comprehensive exam is held (the student may register for candidate for degree if all required coursework has already been completed).

Admission to Candidacy-Master's Degree
A student pursing a master's degree who wishes to become a candidate for a degree must file an Application for Admission to Candidacy, found on the Graduate School website, with their department/program during the first five weeks of the semester of intended graduation. The department/program will then file the Admission to Candidacy with the Graduate School Office. This will certify that all requirements for the degree have been met or are in progress. Admission to candidacy will be granted only to students who have completed a significant fraction of the required coursework, and have passed the comprehensive examination and language requirement (if any). See the schedule of deadlines posted on the Graduate School website.

Time Limits—Master's Degree
Although students are normally expected to complete a master's degree in one to three years, master degree students have six years from the date of the start of coursework to complete all degree requirements (which includes filing the thesis with the Kraemer Family Library if Plan I is followed). A student who fails to complete the degree in this six-year period must file a petition for extension with the program director and have it approved by the Dean of the Graduate School. The petition must state the reasons why the student should be allowed to continue in the program and should be endorsed by program director. The program director must approve applying any course to the degree that was taken more than six years prior to the semester of graduation, and all such courses must be validated by special examination to be determined by the program director.

DOCTORAL DEGREE MINIMUM REQUIREMENTS

GENERAL REQUIREMENTS (CHECK WITH PROGRAM OF INTEREST)

- A minimum of 60 credit hours of graduate level credit, including 30 units of dissertation credit.
- Each doctoral program shall determine how many credits from an earned master's degree may be included in this total.
- File application for admission to candidacy for degree.

Doctoral Dissertation, Advisory Committee, Doctoral Degree Examinations, Specialty Examination, Dissertation Defense
Each doctoral program will require one or more of the following types of examinations.

Please see the UCCS Thesis and Dissertation Manual on the Graduate School website for complete requirements about the dissertation, dissertation committee, and dissertation defense.

Preliminary Examination
See department guidelines and expectations.

Comprehensive Examination
See department guidelines and expectations.

This examination in the field of concentration and related fields may be written or oral or both, and will test the student's mastery of a broad field of knowledge, not merely the formal coursework which has been completed. The comprehensive examination shall be conducted by an examining board of at least three members appointed by the program director.

Dissertation Proposal Examination
See department guidelines and expectations.

Used to determine the preparedness of the student and the appropriateness of the topic, prior to commencing work on the dissertation.

Doctoral Dissertation Credit Hour Requirements
The doctoral dissertation requires 30 hours of dissertation credit. A doctoral student may take no more than one half of the total number of dissertation credit hours required for the degree prior to or during the semester in which the comprehensive examination is passed.

Following successful completion of the doctoral comprehensive examination, a student must register each fall and spring semester for dissertation credits, until the requirements for the degree are completed. A student may register for no more than 10 dissertation credit hours in any semester and for no more than 7 credit hours during a summer semester. A student must be registered during the semester (or summer session) in which the dissertation defense is held.

Clinical Doctorate
Students pursuing clinical doctoral degrees are required to complete a capstone proposal (an examination to determine the preparedness of the student and the appropriateness of the topic), prior to commencing work on the capstone project. Once completed, the capstone project is partial fulfillment for the clinical doctorate. Capstone courses will represent 6 semester credit hours of work. The capstone defense (final examination) will be conducted by the student's capstone committee. See the Policies and Procedures on the Graduate School website.

Admission to Candidacy-Doctoral Degree
A doctoral student who wishes to become a candidate for a degree must file an Application for Admission to Candidacy to their intended major department/program during the first five weeks of the semester of intended graduation. The department/program will then file the Admission to Candidacy with the Office of the Graduate Dean. This will certify that all requirements for the degree have been met or are in progress. Admission to candidacy will be granted only to students who have completed a significant fraction of the required coursework and have passed the comprehensive examination and language requirement (if any). See the schedule of deadlines posted on the Graduate School website.

Time Limits-Doctoral Degree
Doctoral students are normally expected to complete all degree requirements within seven years from the date of the start of coursework in the doctoral program. A student who fails to complete the degree in this seven-year period must file a petition for extension with the graduate school dean. The petition, giving reasons why the student should be allowed to continue in the program, must be endorsed by the program director or by three

members of student's dissertation advisory committee. If the graduate dean approves, the student may continue studies for one additional year. If the graduate dean does not approve, with the concurrence of the program director, the student may be dismissed from the program. If the graduate dean and the program director do not agree on whether a student should continue, the Graduate School Executive Committee shall make the final decision.

GRADUATE STUDENT APPEALS

STUDENT APPEAL PROCEDURES

All appeals regarding course grades shall follow the procedures established by the school or college in which the course was taken.

Appeals regarding other decisions (e.g., expulsion from program, academic ethics code, etc.) may be appealed to the graduate school following appeals process in the department and college.

The procedures for a student appeal to the Graduate Dean and the Graduate Executive Committee are as follows:

- An appeal will be officially accepted from a student only after it has been determined that the student has exhausted the appeals process in effect in the department/college.
- If a resolution to the problem identified in the student's appeal cannot be reached at the department or unit level, the student may submit a written appeal to the Dean of the Graduate School. The written appeal must describe in detail the basis in fact for the opinion that the student has been treated unfairly and must describe actions taken to resolve the problem at the departmental level.
- Upon receipt of a written appeal from a student, the Dean of the Graduate School will contact the appropriate departmental officer to get a response to the questions or objections raised by the student. In some cases, a written response from the department may be requested.
- The response and appeal is then sent to the Student Affairs Subcommittee of the Graduate Executive Committee. This committee acts in an advisory capacity to the Graduate Dean and will forward their findings and recommendations to the Dean.
- The Graduate Dean will make a decision in the case. This decision may be appealed by either party to the dispute to the full Graduate Executive Committee, but only if the decision of the Dean is in disagreement with the recommendation of the Student Affairs Subcommittee.
- The student may appeal the graduate school dean's decision by following the procedures in the student Academic Ethics Code Policy.

GRADUATE PROGRAMS OF STUDY

College/School	**Programs** Please Check with your College/School About Online Programs www.uccs.edu/~outreach/	**Master Degrees**	**Doctoral Degrees**
College of Business	Business Administration	MBA	
	Accounting	MSA	
College of Education	Counseling and Human Services *(various option areas)*	MA	
Licensure & Endorsements Available	Curriculum and Instruction *(various option areas)*	MA	
COE online information	Leadership, Research & Foundations *(various option areas)*	MA	PhD
	Special Education	MA	
	Science Education *(various option areas)*	MSc	
College of Engineering & Applied Science	Engineering *(various option areas; online options)*	ME	PhD
	Computer Science *(various option areas)*	MS	
	Electrical Engineering	MS	
	Mechanical Engineering	MS	
College of Letters, Arts & Sciences	Applied Geography	MA	
	Biology *(various option areas)*	MSc	
	Biochemistry	MSc	
	Chemistry	MSc	

	Communication	MA	
	History	MA	
	Mathematics *(various option areas)*	MS, MSc	PhD
	Physics	MSc	PhD
	Psychology *(various option areas)*	MA	PhD
	Sociology	MA	
School of Public Affairs	Criminal Justice *(also offered online)*	MCJ	
	Public Administration *(also offered online)*	MPA	
	Dual Public Administration and Criminal Justice	MPA/MCJ	
Helen and Arthur E. Johnson Beth-El College of Nursing & Health Sciences	Health Promotion	MSc	
	Sports Medicine *(various option areas)*	MSc	
	Sports Nutrition	MSc	
	Nursing *(various options)*	MSN	DNP

College of Business and Administration

GENERAL INFORMATION

Venkateshwar Reddy, Dean
Dwire Hall, room 310
Telephone: (719) 255-3113
Fax: (719) 255-3494
www.uccs.edu\business

The College of Business and Administration and the Graduate School of Business Administration were established in 1965. The College serves the needs of the Pikes Peak Region and Southern Colorado by developing professional and responsible managers, for continued education of those already in such positions, and for advancing research in business. It also serves the needs for business education throughout the world with its online education options.

The College works closely with the local business community in the professional development of its students.

MISSION

As a College of Business serving Southern Colorado and beyond we provide a vibrant, challenging, collaborative, and responsive learning environment. We offer comprehensive undergraduate degrees, select master's degrees, and professional programs that emphasize principle-based ethical decision making. We support innovation and impact in our teaching, research, and service.

We realize our mission by:

- Offering small, engaging classes that promote faculty-student interaction
- Providing internship, mentorship, and career development opportunities
- Producing intellectual contributions that impact the theory, practice, and teaching of business
- Creating collaborative and mutually beneficial relationships with our campus, alumni, business community, and international partners

VISION

We are in the business of building successful futures.™

CORE VALUES

Student Success: Paramount to everything we do and one of the keys to our uniqueness and success is our dedication to helping students succeed in our programs and in their careers.

Excellence, Integrity, and Professionalism: We believe that things worth doing are worth doing right with the highest ethical standards.

Innovation: We encourage innovative thinking, practices, and programs.

Building Relationships: We are committed to developing mutually beneficial relationships and teamwork with all of our stakeholders.

ACCREDITATION

Both the undergraduate and the graduate business degree programs are fully accredited by AACSB International-The Association to Advance Collegiate Schools of Business.

FACULTY

Dean: Venkateshwar Reddy. *Associate Dean:* Cathy Claiborne. *Professors:* Andrew Czaplewski, Rebecca Duray, Jeffery Ferguson, Donald Gardner, Gary Klein, John Milliman, Eric Olson, Venkateshwar Reddy, Morgan Shepherd, Gregory Stock, Donald Warrick, and Thomas Zwirlein. *Associate Professors:* Margaret Beranek, Cathy Claiborne, Tom Duening, Carol Finnegan, Monique French, Tracy Gonzalez-Padron, Robert Hirschfeld, Brian McAllister, Blaise Sonnier, and George Woodward. *Assistant Professors:* Dustin Bluhm, Jill Bradley-Geist, Kaitlyn DeGhetto, Ying Fan, Spencer Harris, Martin Key, James Ma, Matthew Metzger, Kathleen Tomlin, James Van Scotter, Yang Xu, Kimberly Zahller, and Mingming Zhou. *Senior Instructors:* William Ayen, David Leupp, Gordon Stringer, and Sheri Trumpfheller. *Instructors:* Gregory Augspurger, Diane Belger, Anthony Santella, Colleen Stiles, and Scott Van Ness. *Research Faculty:* Tatiana Bailey. *Emeritus Professors:* Richard Discenza, Lexis Higgins, Charles Hinkle, Robert Keeley, Robert Knapp, Paul Miller, James Rothe, Kirk Wilcox, and Robert Zawacki.

BUSINESS ACADEMIC ADVISING

Undergraduate Academic Advising
Main Hall, 2nd Floor
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918
(719) 255-3260
1-800-990-UCCS ext 3260
Fax: (719) 255-3645
email: success@uccs.edu

Graduate Academic Advising
Graduate School of Business Administration
Dwire Hall 333
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918
(719) 255-3408, 1-800-990-8227, ext 3408
Fax: (719) 255-3100
email: cobgrad@uccs.edu

INTERNSHIP AND CAREER PLACEMENT CENTER

Dwire Hall 301

The Internship and Career Placement Center for undergraduate and graduate business students assists students searching for business internships and for part-time and full time positions; it also provides assistance with resume writing and career direction. This Web site links undergraduate and graduate students and alumni to area and national employers who are looking for qualified employees to fill open positions. For appointments, email: cobplace@uccs.edu or call (719) 255-3120. Visit the Career and Placement website.

RESEARCH CENTERS

THE COLLEGE OF BUSINESS CENTER FOR ENTREPRENEURSHIP

The Center for Entrepreneurship in the College of Business is dedicated to providing leadership in scholarship and education in entrepreneurship for the College and the University. The Center offers a minor in entrepreneurship that is open to every student on the UCCS campus. It also spearheads the UCCS Sports/Outdoors Business Plan Competition and is leading the effort to bring the first TEDx event to Colorado Springs. The Center is focused on leveraging the region's comparative advantages to help build an industry cluster in the sports/outdoors verticals. Leveraging the fact that the region is home to the United States Olympic Committee (USOC) and a major USOC training facility, the unparalleled living environment, and the fact that the city is home to 24 national sports governing bodies, the Center is promoting entrepreneurship in sports/outdoor ventures.

SOUTHERN COLORADO ECONOMIC FORUM

The Forum provides businesses in El Paso County with economic and quality of life information which is used to assess local economic conditions. The objective of the Economic Forum is to provide timely and useful information focused specifically on the Pikes Peak Region. This information serves as a community progress report, identifying areas where the local community excels as well as areas where it faces challenges.

STUDENT ORGANIZATIONS

Student organizations, which provide opportunities for professional development and for recognition of scholastic achievement of students, are supported by the College of Business. The following are student organizations in the College of Business:

Accounting Honor Society: Honor society for College of Business accounting students

Beta Gamma Sigma (BGS): Membership in BGS is an honor, which must be earned through outstanding scholastic achievement. Students are invited to apply for membership. Such membership is one of the highest scholastic honors that a student in a business or management program can attain. To be eligible for Beta Gamma Sigma membership, students must rank in the top 7 percent of their second-semester junior class, the top10 percent of their senior class, or in the top 20 percent of those students receiving Master's degrees. BGS chapters may be chartered only in those schools of business and management accredited by AACSB International - The Association to Advance Collegiate Schools of Business.

Delta Sigma Pi: International fraternity for business students

Management Club: The Management Club's goal is to provide further management education beyond what is seen in a traditional classroom setting. We offer opportunities for career and management skill development. Club members and the broader UCCS student community are welcome to our events.

Marketing Club: UCCS AMA - The UCCS American Marketing Association is a growing campus club that is focused on fostering connections on and off campus through AMA and community events, learning relevant skills and job smarts from experienced professionals, and being involved in projects giving students direct experience in marketing. Anyone is welcome to attend events and meetings, and AMA membership is available to those who want to become more active members in this valuable network.

SHRM: Student Chapter of the Society for Human Resource Management.

Student Center for Public Trust: The Student Center for the Public Trust (StudentCPT) is a national network of college students who demonstrate a commitment to ethical leadership.

COLLEGE OF BUSINESS AND ADMINISTRATION LEARNING OUTCOMES

BUSINESS, BS--BACHELOR OF SCIENCE

Our students will:

- Know core business concepts.
- Be effective communicators.
- Demonstrate problem solving skills supported by appropriate analytical, quantitative and qualitative techniques for tactical and operational decision-making.
- Demonstrate effective teamwork skills.
- Understand ethical issues, including sustainability and social responsibility, and how they impact business and society.
- Have a global perspective
- Understand key issues of operating in diverse organizations
- Be able to integrate core business concepts across disciplines.

BUSINESS, MBA-MASTER OF BUSINESS ADMINISTRATION

Our students will demonstrate the ability to:

- Understand and apply knowledge in accounting, finance, information technology, management, marketing, operations and strategy.
- Make decisions that incorporate ethical principles, legal obligations and social responsibility (including sustainability) and that consider all stakeholders.
- Function effectively as a team member and a team leader in a diverse business environment.
- Communicate professionally and effectively.
- Think critically and analyze and synthesize information for problem identification and effective managerial decision-making.
- Recognize, appreciate and respect diversity and cultural differences in order to adapt and succeed in global business environments.

BUSINESS, MSA - MASTER OF SCIENCE IN ACCOUNTING

Our students will demonstrate the ability to:

- **Technical Competency**. Students will be expected to demonstrate technical competencies and professional knowledge in financial accounting, auditing, and taxation.
- **Critical Thinking**. Students will be expected to demonstrate critical thinking in accounting contexts.
- **Ethics**. Students will be expected to demonstrate the ability to recognize ethical and professional obligations of accountants.
- **Communication Skills**. Students will be expected to demonstrate the ability to communicate both orally and in writing.

COLLEGE OF BUSINESS AND ADMINISTRATION GENERAL ACADEMIC POLICIES

The following academic policies are applicable to all students enrolled in the College of Business and Administration or the Graduate School of Business Administration. All students are responsible for knowing and following the provisions set forth in this Catalog and in the Registration Handbook. Any questions concerning these provisions are to be directed to Academic Advising (undergraduate inquiries) or the Graduate School of Business Administration Advising Office (graduate inquiries). It is the responsibility of the student to know and observe program requirements and deadlines.

In an effort to incorporate new business techniques and paradigms into business programs, as well as to meet the needs of students on a timely basis, the College of Business periodically makes changes to curricula. The academic policies and regulations stated herein are in effect at the time this Catalog is published but may be subject to change; these changes may not be reflected in this Catalog. We therefore encourage students to visit our website. Any questions should be directed to the Academic Advising Offices (undergraduate or graduate).

ACADEMIC DISHONESTY

The College of Business follows and enforces the student conduct rules and policies that are set forth by the university and are listed in the Student Rights and Responsibilities section of the Academic Catalog.

Students caught engaging in academic dishonesty may receive a zero on the assignment in question, an "F" in the class, or be suspended from the College of Business and/or university.

ACADEMIC POLICIES

Administrative Drop
Through the semester census date, individual faculty, program directors or the dean may initiate the process to drop students who do not have the proper course prerequisites and/or class standing for courses. Students who fail to meet written class attendance policies may be administratively dropped. Students who do not attend the first class without receiving prior permission from the instructor may also be dropped.

Attendance Policy
It is the expectation of the College of Business and Administration that students will attend all classes. However, classroom attendance policy is left to the discretion of the faculty member. Students are responsible for knowing the attendance policies of individual instructors. Business faculty may drop students who do not attend the first class (without prior permission from the instructor). This policy allows the adding of wait-listed students who

attend the first class. Students registering after the first class meeting should obtain approval from the instructor prior to enrolling and are responsible for all assignments, notes, materials, etc. given during missed instructional time.

ETHICAL PRINCIPLES

The College of Business participates in the Daniels Fund Ethics Initiative that advances principle-based ethics. The Principles provide a framework for personal and organizational decision-making and leadership that College of Business students can utilize both in the classroom and in their future careers.

Daniels Fund Ethics Initiative Principles

Integrity - Act with honesty in all situations
Trust - Build trust in all stakeholder relationships
Accountability - Accept responsibility for all decisions
Transparency - Maintain open and truthful communications
Fairness - Engage in fair competition and create equitable and just relationships
Respect - Honor the rights, freedoms, views, and property of others
Rule of Law - Comply with the spirit and intent of laws and regulations
Viability - Create long-term value for all relevant stakeholders

GRADING POLICIES

Audit/No Credit
The College will not approve business courses taken as audit or for no credit.

Failed Courses
Although failed courses may be repeated, the earned F will remain on the student's transcript and will be included in his/her grade point average.

Grade Appeals
Final grades as reported by faculty are to be considered permanent and final. While it is the sole prerogative of the faculty to award grades, it is also a student's right to appeal a course grade that he or she feels was awarded in error or unfairly.

In any appeal, it is understood that the burden of proof justifying a change of grade is upon the student. Each step in the appeal process should be completed in a timely manner. The academic year consists of three semesters, summer, fall and spring. A student should initiate a grade appeal no more than one semester after the initial grade was assigned. FOR EACH COURSE, a STUDENT MAY APPEAL ONLY ONCE. It is the student's responsibility to produce all materials that have been returned to the class relevant to the determination of the grade. It is the faculty member's responsibility to produce all materials relevant to the grade which have not been returned to the student. In the event that group project materials were part of the student's grade, it is the student's responsibility to produce all those materials that were returned to the group that are relevant to the grade. At all stages of this process, the faculty of record shall be kept informed of the appeal and be provided with copies of all written records. Furthermore, the faculty shall be notified of any proposed grade change.

Step I The student must first appeal directly to the course instructor. It is expected that most disagreements will be resolved at this level. In extraordinary circumstances (absence or death of the faculty member or in instances involving formal complaints of harassment or discrimination in the award of a grade) this step can be bypassed and the student can move on to Step II.

Step II If a student cannot resolve the disagreement with the course instructor, then he or she may appeal to the team lead. In the event that the course instructor is the team lead, the associate dean will act as the team lead. The team lead has the discretion to handle the issue verbally or to ask the student to put the complaint/issue into writing including why the grade was unfair or in error. If the team lead asks for the issue in writing, the time limit will be two weeks for the student to do so. If the appeal is found to be justified, a recommendation will be made to the course faculty member to change the grade.

Step III The student may appeal the team lead's finding to the dean's level of the College of Business. The dean may consult or refer appeal to the graduate or undergraduate team, whichever is appropriate. At the dean's level, all appeals must be in writing. In cases where formal allegations of harassment or discrimination accompany the appeal, the dean will consult the director of affirmative action. The decision of the dean is final, and the dean has the authority to change the grade.

Incomplete Grades

In special circumstances, a student may be awarded an incomplete grade (I). Incomplete grades (I) are only appropriate for students who have completed a substantial portion of the semester but then become ill, or encounter other documentable extenuating circumstances beyond their control, preventing them from completing their coursework.

Instructors have the sole discretion to award an incomplete grade. The purpose of an incomplete grade is to allow students to make up missing work or exams. To resolve an incomplete grade, the student must meet with their instructor to develop a plan for completion and must submit the specified work by the deadline established. Students may not attend any part of the course a second time in an effort to complete a pending incomplete without re-enrolling. If a student elects to re-enroll before resolving the incomplete, the most recent grade, in addition to the (I), will remain on the student's permanent academic record. In all cases where an incomplete is not remedied within one calendar year, the (I) grade will automatically convert to an F on the student's permanent academic record. Students are responsible for ensuring that all incomplete grades are resolved at least four weeks prior to their scheduled graduation date.

Pass/Fail Course Registration

With the exception of BUAD 3010, 3020, 3030, internships numbered 4960 and 6960, and certain experimental courses, students in the College of Business and Administration may not use courses taken on a pass/fail basis to satisfy required courses. Only open electives may be taken on a pass/fail basis and applied towards the undergraduate degree. No pass/fail courses may be taken and applied toward the Graduate degree program. Pass/fail determination must be made within the first two weeks of the semester and is irreversible.

INDEPENDENT STUDY

Junior, senior and graduate business students desiring to explore business topics beyond regular business course coverage may take variable credit independent study courses (1-3 semester hours) under the direction of a full-time member of the faculty who approves the project. The student must also have the prior approval of the dean. Information and request forms are available in the College of Business graduate and undergraduate offices. To receive degree credit for independent study and experimental studies courses in non-business areas, students must obtain the approval of the College of Business and Administration Dean prior to registering for the course. The College of Business and Administration does not grant credit for work experience or cooperative education programs. Tutoring of lower division courses is considered a form of work experience, and is not accepted for academic credit. A maximum of 6 hours of pre-approved independent study credit may be applied to the undergraduate or graduate business degrees.

INTERNSHIPS

The College of Business and Administration offers the opportunity for business students, undergraduate and graduate, to obtain internships both for credit and not for credit. Information on business internships is available by contacting the Director of Internship and Placement.

LISTENING IN

The College of Business participates in the campus-wide Listening In program for lifelong learners age 55 and older. Participants may sit in on regular-session classes on a space-available basis with the permission of the course instructor and academic program director. No academic credit is earned. Participants do not submit assignments, complete exams, or engage in group projects. Online classes are not available for Listening In. Program application and details are on the Online and Academic Outreach website.

PETITIONS

A business student can request a modification or exception to the academic program requirements or policies that are in place for the College of Business. The process to request a modification or an exception is done via a College of Business Petition Form (available from an academic advisor). The forms must be typed and must be accompanied by documentation to warrant a modification or exception. Once a petition is received by the appropriate advisor, the petition is then reviewed by the Undergraduate Team for the undergraduate programs or the Graduate Team for the graduate program. The teams are comprised of representatives from each department in business, the undergraduate/graduate program director(s), the associate dean for academic programs, and the undergraduate business advisors (if applicable). Once a petition has been reviewed the student will be notified about the status of the petition.

TRANSFER CREDIT

The College of Business and Administration reserves the right to disallow any credit it determines not to be appropriate. Only credit from regionally accredited institutions will be considered for transfer to the undergraduate degree program, and from AACSB accredited graduate programs to the graduate degrees.

COLLEGE OF BUSINESS AND ADMINISTRATION UNDERGRADUATE PROGRAMS

Students are held to basic standards of performance established for their classes with respect to attendance, active participation in coursework, promptness in completion of assignments, correct English usage-both in writing and speech, accuracy in calculations, and general quality of scholastic workmanship. In general, examinations are required in all courses for all students.

To be in good standing, a minimum scholastic cumulative grade point average (GPA) of 2.0 is required for all coursework attempted, a 2.0 GPA for all business courses attempted, and a 2.0 term (semester) GPA. These grade point averages apply to work taken at all University of Colorado campuses. Remedial coursework is not included in the overall average. Students are responsible for being aware of their academic status at all times; late posting of grades and/or late notification by the College does not waive this responsibility.

A student's business program/catalog year is the one in effect at the time the student is admitted to the UCCS College of Business and Administration. Transfer students from Colorado Community Colleges may follow the graduation requirements in effect during the academic year the student began study at the community college if they complete the AA Business Option (restrictions apply, please see UCCS Academic Advising).

Students transferring from both two- and four-year public higher education institutions in Colorado should consult the articulation agreements and transfer guides that are in effect between the College of Business and Administration and these institutions.

UNDERGRADUATE ADMISSION PROCEDURES

FRESHMEN

Class Rank and Test Scores

Students who rank in the upper 30th percentile of their high school graduating class with a 3.3 high school GPA and who satisfy the suggested high school units and the entrance test score requirements are assured admission. Test scores for assured admission are as follows:

- SAT: a combined score of 1080 or above
- ACT: a composite score of 24 or above, with an English minimum score of 24 and a math minimum score of 24.

Students not meeting the above standards will be considered on the basis of a combination of several factors including class rank and performance in college prep classes.

Suggested High School Course Units

- English 4 (including one year of speech/debate and two years of composition)
- Mathematics 3 (including at least two years of algebra and one year of geometry)
- Natural science 3 (laboratory science courses)
- Social Science 2
- Foreign language 2
- Academic electives one (additional courses in English, foreign language, mathematics, natural or social sciences; not to include business courses)
- **Total 15**

Students with strong mathematics and verbal skills are encouraged to apply even though their test scores and/or class rank may vary from the indicated admissions criteria.

TRANSFER STUDENTS

To be eligible for admission for the College of Business, transfer students must have earned a cumulative GPA of at least 3.0 and have successfully completed, with a C grade or better, a college level composition course and at least college algebra. Applicants with less than 15 semester hours of college level work will be required to submit a high school transcript and SAT or ACT test scores. Applicants with 30 semester hours or more of college level work may or may not be required to submit high school transcripts and/or test scores for admission purposes, but a high school transcript is required to be on file per the Admissions Guidelines. Additional credentials may be required in individual cases. The College of Business and Administration does not allow students who already possess a Bachelor's degree in a business area to pursue a second Bachelor's degree in Business. Students who already have a Bachelor's degree in Business are encouraged to inquire about admission criteria for the College of Business and Administration graduate programs.

INTRA-UNIVERSITY TRANSFER (IUT)

Students who wish to transfer to the College of Business and Administration from another degree program at UCCS must apply to transfer in Academic Advising upon completion of at least 15 semester hours of graded work

at UCCS. The student must complete (successfully pass with a C or better) a college level Math class (1040 or higher) and ENGL 1310 to be considered. Students must earn a minimum cumulative GPA of 3.0 for admission. Performance in business courses will be considered.

RESIDENCY REQUIREMENT

A minimum of 30 hours of business coursework must be completed after admission to the College of Business and Administration, including 18 -24 hours in the area of emphasis and BGSO 4000 & STRT 4500. Coursework taken prior to admission to the College will not be accepted toward area of emphasis requirements.

MAPS
The College of Business and Administration adheres to the University Minimum Academic Preparation Standards that are listed in the Admissions section of the CATALOG.

UNDERGRADUATE ACADEMIC POLICIES

Course Load
The normal scholastic load for a full-time undergraduate business student is 15 semester hours, 18 hours is the maximum during the fall/spring semesters and 12 hours in the summer session. An approved College of Business Petition is required to take courses in excess of the stated maximum.

Internship
To apply for an undergraduate internship for academic credit, students must be in good academic standing in their junior or senior year, with a 2.5 Business GPA, 2.5 Emphasis GPA, and a 2.5 overall CU GPA. Additionally, students must have completed all skills courses and at least one emphasis course in the discipline in which they are applying for credit. Internships are 1-3 credit hours, pass/fail only, and may be used as open elective credit, business elective credit, or as area of emphasis credit (if internship credit is approved for the area of emphasis). Internships are approved through an application process obtained from the College of Business Career and Placement Office. Students must apply prior to beginning their internship duties, and should register for credit during the semester in which the internship is being completed. A maximum of 6 credit hours of internship may be applied to a business degree.

Minimum Grade Requirements
All Business students are required to attain a grade no lower than C- for all Skills Courses (ACCT 2010 & 2020, ECON 1010 & 2020, ENGL 1310, MATH 1040 & 1120, MGMT 3000, & QUAN 2010 & 2020), Junior Core Courses (FNCE 3050, INFS 3000, MKTG 3000, OPTM 3000 & MGMT 3300), Area of Emphasis/Major courses and Capstone courses (BGSO 4000 & STRT 4500). Students may petition the College of Business to have one skills or junior core grade below C- accepted so long as the course is passed (a D grade is passing) and not in their major field of study and if the student has attempted the course at least twice and if the student has successfully passed subsequent courses that require the course in question as a prereq.

Course Repetition
Repetition of College of Business coursework is permitted only with prior permission from the College.

President and Dean's List Criteria
To qualify for semester honors, students must be enrolled in a minimum of 12 graded hours during a regular semester (Fall or Spring). Students who achieve a 3.75-3.99 grade point average will be placed on the Dean's List. Students who achieve a 4.0 grade point average will be placed on the President's List.

Online Courses and Program
The online program at UCCS follows the same format as our on campus classes - each course is offered in the "regular" semester format - the courses are not correspondence courses. Students enrolled in the online program or in any online course are required to meet and follow all College of Business rules and policies that are in place for the College to include classroom attendance, academic misconduct enforcement, student code of conduct, and classroom behavior guidelines.

PROBATION AND SUSPENSION

Probation
Any College of Business and Administration student who has attempted 12 or more hours at any CU campus, and/or has attempted 12 or more hours of College of Business coursework, shall be immediately placed on probation when their University of Colorado, Business and/or Semester Term GPA falls below a 2.0.

Students may remain on probation so long as they achieve a minimum CU and Business GPA of 2.25 each semester and obtain no grades below a C-.

During their entire academic career in the College of Business and Administration a student may be on probation for a maximum of four semesters; probationary terms are not necessarily consecutive (summer shall be considered a semester only if any coursework is attempted). Students on probation will have their registration blocked for subsequent semesters until grades are posted and minimum standards (2.25 term GPA and no grade below a C-) are achieved.

- Failure to meet probationary provisions will result in **Indefinite Suspension**.
- A student may be removed from probation when the cumulative University of Colorado GPA and/or the Business GPA have been raised to 2.0 or above.

Suspension
Students placed on Indefinite Suspension are not eligible to enroll in College of Business and Administration courses at any University of Colorado campus for one calendar year from the time of their **indefinite suspension**.

A student who has been under indefinite suspension for one calendar year may apply for readmission to the College of Business and Administration. The student must submit the College of Business Petition and a formal letter for consideration for readmission to the College of Business. If readmitted, that readmission will be on a probationary status. After being readmitted under such probationary status, students who fail to comply with the requirements of their probation will be subject to **Permanent Suspension**.

Any student who is placed on suspension more than once will be placed on **Permanent Suspension** from the College of Business and Administration and may not attend any campus of the University of Colorado as a business student.

Students who have been on Indefinite Suspension at any time by the College of Business and Administration will automatically be placed on **Permanent Suspension** if their cumulative CU or Business GPA again falls below 2.0.

All suspended College of Business and Administration students who transfer into another degree program will not be eligible to enroll in ANY courses offered by the College of Business and Administration and will be subject to administrative drops. Suspended students who transfer into another degree program of the University are rarely readmitted to the College of Business and Administration, and then only by special consideration through petition to the College.

REGISTRATION AND ENROLLMENT STATUS

Prerequisites are enforced for all students. In addition, College of Business students should complete all Skills Courses (with a grade of C- or better) prior to enrolling in the Junior Core and Emphasis classes. Priority for registration in business classes is given to business degree students. Students uncertain about eligibility for enrollment in a business course should contact Academic Advising at (719) 255-3260 or www.uccs.edu/~advising. Students enrolled in one section of a business course while attending a different section will receive a final grade of F for nonattendance. Students attending business classes for which they are not enrolled will not be added after the add period is over without the approval of the instructor and the Dean of the College of Business.

TRANSFER CREDIT-UNDERGRADUATE

Business Courses
The College will limit transfer credit for business courses taken at a lower division level to such courses as the College offers at that level. A maximum of 60 semester hours of credit may be accepted from a community or junior college.

Student transfer agreements between the UCCS College of Business and Administration and the two-year public institutions in the Colorado system of higher education have been established and may be accessed through the advising offices of each institution. The College adheres to the Business Statewide Articulation Agreement. This agreement varies depending on the student's specific catalog year.

Information systems courses older than five years will not apply toward any Bachelor of Science in Business degree requirement, but those course credits can be applied towards open elective requirements.

Accounting courses in transfer need to be current (less than 10 years old).

Current business students who wish to take coursework at another institution or another campus of the University of Colorado and apply the work toward the degree must have the prior approval from the College via a College of Business Petition.

Correspondence Credit
Area of emphasis courses may not be taken by correspondence. All correspondence courses are evaluated to determine their acceptability. Approval for degree credit is required prior to registration.

Credit by Examination
See the Admissions section of this CATALOG for information about Advanced Placement, International Baccalaureate, and College Level Examination Program (CLEP) credit.

ROTC Credit
Students who complete the ROTC program may apply a maximum of 11 hours of advanced ROTC credit toward elective requirements for the business degree. Students must be enrolled as official ROTC students in order to receive degree credit for ROTC courses. The ROTC advisor can provide more detailed information.

GRADUATION REQUIREMENTS

Each candidate for the Bachelor of Science-Business degree in the Professional Program must complete the prescribed courses in an area of emphasis comprising a minimum of 18 - 24 semester hours taken at UCCS. A minimum CU GPA of 2.5, with no grade below a C- is required for all business courses including Skills Courses, Junior Core, BGSO 4000 & STRT 4500, and Emphasis Courses, as is a 2.0 overall CU GPA. Students who graduate with area of

emphasis and/or business grade point averages from 2.0 to 2.49 will not earn a Professional Area of Emphasis and will graduate as General Business majors.

Degree Credit
To be considered for the degree, students must report all academic credentials to the Office of Admissions and Records, and credentials must appear on the student's official University of Colorado transcript. Credit listed on these documents is then evaluated by the appropriate office for degree applicability.

Senior Audit
By the beginning of the first semester of their senior year, students must schedule a senior audit with a business academic advisor to determine status with respect to graduation requirements. Failure to complete the senior audit in a timely manner may delay a student's graduation.

Commencement
Students seeking to participate in commencement and other academic ceremonies will need to complete ALL academic requirements in advance. Participation in academic ceremonies that recognize or honor students for the completion of an academic program or specific academic accomplishment is based on the understanding that all requirements have been completed. Every effort will be made to determine eligibility in advance, and only students who have met requirements will be permitted to participate.

Latin Honors
Upon recommendation of the faculty, undergraduate students who demonstrate superior scholarship are given special recognition at graduation. To qualify for Latin Honors, students must have a minimum of 60 hours at the University of Colorado. Students must achieve an overall CU grade point average of 3.7 and a grade point average of 3.9 in all business courses taken at the University of Colorado to be considered for summa cum laude. Those who achieve an overall CU grade point average of 3.5 and a grade point average of 3.7 in all business courses taken at the University of Colorado will be considered for magna cum laude. An overall CU grade point average of 3.3 and a business course average of 3.5 qualify a student to be considered for cum laude.

COLLEGE OF BUSINESS AND ADMINISTRATION MINOR PROGRAMS OF STUDY

MINORS FOR BUSINESS STUDENTS

Professional Program students (students graduating with a 2.0 overall, 2.5 in Business, and 2.5 in emphasis) may earn a minor. Business students may minor in a second business area or may choose a minor through the Colleges of Letters, Arts, and Sciences; Engineering; or Nursing (at least 18 credit hours).

For College of Business minors, all 9 credit hours of business courses must be taken in residence in the College of Business and Administration and must not already be counting toward the area of emphasis. If the 9 hours are not unique courses, then a student cannot earn a minor. Courses taken for the minor can count toward business electives and/or open electives. A minor GPA of 2.5 must be earned, and minor courses must have a C- grade or better. To be eligible to earn the business minor, business students must also earn their professional area of emphasis (2.0 overall CU GPA, 2.5 Business GPA and 2.5 Area of Emphasis GPA).

If a student is pursuing a "non-business" minor, 9 hours must be unique from courses already required for the business degree and the student must fulfill the specific minor degree requirements to earn the minor.

- Accounting Minor (Business Students)
- Finance Minor (Business Students)

- Human Resources Management Minor (Business Students)
- Information Systems Minor (Business Students)
- International Business Minor (Business Students)
- Management Minor (Business Students)
- Marketing Minor (Business Students)
- Service Management Minor (Business Students)

BACHELOR OF INNOVATION™ (BI) DEGREE

The Bachelor of Innovation (BI) family of programs is an interdisciplinary undergraduate program. The BI™ is actually a family structure, much like a bachelor of science or a bachelor of arts, in which particular majors are defined. The BI is a very structured program with a general education core, a common core in innovation, an in-depth major field of study/emphasis core, and a cross-discipline core to help ensure the breadth needed for innovation.

BACHELOR OF INNOVATION REQUIREMENTS

Credit Hours
The total number of credits needed to graduate in the BI in Business will be 120 credit hours (45 hours must be upper division). Thirty hours must be completed at UCCS as a College of Business student to meet the residency requirement.

General Education
The BI program follows the Compass Curriculum for General Education as established by UCCS.

The Innovation Core
This requires 24 credit hours, geared toward innovation and entrepreneurship; a key component is multi-disciplinary team activities over the sophomore, junior and senior years.

The Degree/Major Emphasis
This is the set of courses that a student takes to satisfy the main area of emphasis--the "core" of the bachelor's degree program. For the BI in Business it is 45 minimum credits in business, to follow the AACSB requirements.

Cross-Discipline Core
Each cross-discipline core is a coherent collection of 15 credits from one "cross-over" area that each student selects in their degree program. The goal is to provide some basic knowledge, appreciation and experience about what professionals in that area do and to provide sufficient background to effectively interact in that domain. The cross discipline core is a targeted list of courses, not just a total number of credits in an area. See the BI website at innovation.uccs.edu for a list of courses in each cross-discipline core.

BUSINESS, BS

The student bears responsibility for the fulfillment of degree requirements.

GENERAL REQUIREMENTS

Total Credits
A minimum of 120 semester hours of academic credit required.

Residency
Candidates for the Bachelor of Science (Business) must complete a minimum of 30 credits of business coursework (to include the 18 - 24 credit hours in the area of emphasis and BGSO 4000 and STRT 4500) after the student has been accepted into the College of Business and Administration.

Upper Division
A minimum of 45 credits must be upper-division (3000 or 4000-level) coursework.

Community College Transfer Hours
A maximum of 60 credit hours of appropriate academic credit taken at a junior or community college may be applied toward the undergraduate degree in business. The College reserves the right to disallow any credit that is not appropriate academic degree credit.

MODEL DEGREE PROGRAM FOR BUSINESS BS

The following four-year plan lists all the specific course requirements for the Bachelor of Science in Business degree for the academic year of this catalog. Equivalent courses taken at other institutions prior to admission to this degree program may satisfy some requirements, subject to College of Business and Administration policies regarding the transfer of academic credit. The order in which these courses are taken may vary with course availability; however, normal degree progress requires that students complete the degree in a freshman, sophomore, junior, senior sequence in order to complete prerequisites as required. **Course prerequisites and class standing requirements are strictly enforced by the College of Business and Administration.**

Freshman Year First Semester

- GPS 1010 - Gateway Program Seminar
- ECON 1010 - Introduction to Microeconomics
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- MATH 1040 - College Algebra
- Open elective - 3 credits

Freshman Year Second Semester

- ECON 2020 - Introduction to Macroeconomics
- INFS 1100 - Microsoft Office Applications and Computer Basics
- MATH 1120 - Calculus for Business and Economics
- ENGL 2080 - Business and Administrative Writing
- Explore Course - Arts, Humanities, and Cultures - 3 credits

Sophomore Year First Semester

- ACCT 2010 - Introduction to Financial Accounting
- BLAW 2000 - Business Law
- COMM 2100 - Public Speaking

  or
- COMM 2010 - Oral Communication in the Workplace
- QUAN 2010 - Business Statistics

- Explore Course - Physical and Natural World - 4 credits

Sophomore Year Second Semester

- ACCT 2020 - Introduction to Managerial Accounting
- MGMT 3000 - Integrated Skills for Management
- MKTG 3000 - Principles of Marketing
- QUAN 2020 - Process and Statistics-Based Decisions
- Open elective - 3 credits

Junior Year First Semester

- FNCE 3050 - Basic Finance
- INFS 3000 - Introduction to Management Information Systems
- MGMT 3300 - Introduction to Management and Organization
- Writing Intensive or Open Elective - 3 credits
- Open Elective - 3 credits
- BUAD 3010/3020/3030 or Open Elective - 1 credit

Junior Year Second Semester

- OPTM 3000 - Fundamentals of Operations Management
- Business Area of Emphasis course - 3 credits
- Business Area of Emphasis course - 3 credits
- Upper division business course - 3 credits
- Open elective - 3 credits
- Writing Portfolio Submission – zero credits

Senior Year First Semester

- BGSO 4000 - Business, Government and Society
- Business Area of Emphasis course - 3 credits
- Business Area of Emphasis course - 3 credits
- Upper division Business course - 3 credits
- Open Elective - 3 credits

Senior Year Second Semester

- STRT 4500 - Strategic Management
- Business Area of Emphasis course - 3 credits
- Business Area of Emphasis course - 3 credits
- Upper division business course - 3 credits
- Open Elective - 1 credit

Model Degree Program Notes

1. SAT/ACT scores will be used for placement into English courses. Students must take the university's Math Placement Exam for placement into Math courses.
2. Admission to the College of Business is required for all courses beyond the first semester sophomore year (except MKTG 3000 and MGMT 3300).
3. Writing Portfolio - All students must complete the University Composition Competency requirement prior to graduation. After completing both ENGL 1310 and ENGL 2080, students must submit a Writing Portfolio or enroll in an additional approved upper division writing course.
4. Prerequisites and class standing are strictly enforced for all Business courses.

UNDERGRADUATE CURRICULUM NOTES

Skills Courses
Skills courses are completed in the freshman and sophomore years and provide students with a foundational knowledge of business skills and competencies. Skills courses must be completed with a C- or better and are the following courses: ACCT 2010, ACCT 2020, ECON 1010, ECON 2020, ENGL 1310, MATH 1040, MATH 1120, MGMT 3000, QUAN 2010, and QUAN 2020. (See course descriptions by clicking on the hyperlinks in the model degree program.)

General Education Courses and Open Electives
The business degree requires 27-30 hours of general education courses (explore) and open electives. These credits provide a means to take courses geared toward expanding the breadth of students' education. These courses should be chosen carefully based upon the student's interests and objectives.

Business Courses
Nine hours of business courses are required beyond the core curriculum. These business courses can be used for a second area of emphasis, a business minor, or to explore business topics other than those required in the students' area of emphasis. Students may also elect to utilize these business courses for minors offered through the Letters, Arts and Sciences, Engineering, and/or Nursing Colleges. Please note that a maximum of 14 hours of Organizational Leadership & Professional Development (OLPD) credit can be applied to the business degree.

THE PROFESSIONAL PROGRAM

The professional program consists of the junior core courses, the area of emphasis and the senior capstone courses. The professional program begins in the junior year and allows students to begin focused study in their chosen discipline. Business students must declare an Area of Emphasis (major) and must follow the sequence of courses listed in the Model Degree Plan for their catalog year of acceptance.

Junior Core Courses

- FNCE 3050 - Basic Finance
- INFS 3000 - Introduction to Management Information Systems
- MGMT 3300 - Introduction to Management and Organization
- MKTG 3000 - Principles of Marketing
- OPTM 3000 - Fundamentals of Operations Management

Area of Emphasis
An area of emphasis requires 18 -24 hours of specific coursework. Business students will select one of the following Professional Program Areas of Interest: Accounting, Business Administration, Finance, Human Resources Management, Information Systems, International Business, Management, Marketing, Service Management or Sport Management*, (*this program has unique degree requirements, please see the following Emphasis sections for more details).

Senior Capstone Courses
Registration in STRT 4500 is restricted to business seniors only; ENGL 2080, all skills courses, and junior core courses must be completed prior to registration in STRT 4500. Registration in BGSO 4000 is restricted to second semester juniors.

- BGSO 4000 - Business, Government and Society
- STRT 4500 - Strategic Management

PROFESSIONAL PROGRAM AREAS OF EMPHASIS

Each candidate for the Bachelor of Science-Business degree in the Professional Program must complete the prescribed courses in an area of emphasis comprising a minimum of *18 - 24 semester hours taken at UCCS*.

To earn a professional area of emphasis, a grade point average of 2.5 is required for the area of emphasis courses, with no grade below a C-; a 2.5 cumulative GPA is required for all business courses; and a 2.0 GPA is required overall. Students who graduate with area of emphasis and/or business grade point averages from 2.0 to 2.49 will not earn an area of emphasis.

By completing extra courses, a student can earn a second area of emphasis. In order to earn a double area of emphasis, a student must fulfill all the requirements for both areas. If there are not at least 15 hours of unique courses in the areas, then the student cannot earn a double area of emphasis.

ACCOUNTING

Students who earn a degree in accounting are prepared for careers in financial accounting, managerial accounting, accounting systems, taxation, and auditing. The emphasis is designed to prepare students to work in public accounting, business and industry, and not-for-profit and governmental organizations.

Coursework in accounting at UCCS conveys a comprehensive understanding of the theory and concepts that underlie practice. Emphasis is placed on logical reasoning and critical thinking to enable students to solve problems in accounting and to make sound policy decisions in the context of social, legal, and political environments.

The undergraduate area of emphasis in accounting consists of a minimum of 18 semester hours in upper division accounting courses. All accounting majors are required to complete the following five courses:

Required Courses
- ACCT 3010 - Intermediate Accounting I
- ACCT 3020 - Intermediate Accounting II
- ACCT 3110 - Cost Accounting
- ACCT 4210 - Individual Income Tax
- ACCT 4600 - Auditing

Students must complete one additional upper division accounting course. Choose from the following list of courses:

- ACCT 4220 - Corporate and Partnership Taxation
- ACCT 4310 - Introduction to Accounting Systems
- ACCT 4410 - Accounting for Governments and Not-for-Profit Organizations
- ACCT 4950 - Topics in Accounting

Accounting Notes

Accounting students should work closely with accounting faculty, their advisors, and the undergraduate program director in planning a degree program that is congruent with their career goals.

Until July 1, 2015 students applying for licensure as CPAs in the State of Colorado must hold a bachelor's degree and have completed a total of at least 120 semester hours, including a minimum of 27 semester hours in accounting, three of which must be in auditing. These total hours must also include 21 semester hours in other areas of business administration such as business law, management, marketing, statistics, business communications, economics, and finance. No more than six semester hours in any single area may be used to satisfy this 21 hour requirement.

Until July 1, 2015 in Colorado, individuals may be licensed as CPAs without professional apprentice experience if they have 30 semester hours of coursework beyond the credits applied for the bachelor's degree and 45 hours of accounting courses in their combined undergraduate and graduate studies. This option will not be available after July 1, 2015.

As of July 1, 2015, students applying for licensure as CPAs in the State of Colorado must hold a bachelor's degree and have completed a total of at least 150 semester hours, including 27 hours of upper-division accounting. Six of these accounting semester hours must be in auditing and three of these accounting semester hours must be in accounting ethics. These total hours must also include at least 27 semester hours in upper-division business courses, of which three semester hours must be in business, technical, or accounting communications. No more than nine semester hours in any single area may be used to satisfy this requirement.

The above rules/policies are state guidelines that are subject to change.

Students should understand the requirements for sitting for the CPA and for the CPA licensure early in their accounting educations. More information about these topics is available at the Colorado Board of Accountancy website: http://www.dora.state.co.us/accountants/. Students also should be aware that most states now require a minimum of 150 semester hours to be licensed as a CPA. Students who plan to leave Colorado should check the specific requirements of the states to which they may relocate.

To accommodate the requirements that will be in effect July 1st, 2015 for CPA licensure, the College of Business has developed a 4+1 BS-MBA degree program. The accounting 4+1 BS-MBA degree program provides a student enrolled as an undergraduate in the accounting program at UCCS an opportunity to concurrently: 1) meet the Colorado law requiring 150 hours of post-secondary education to be licensed as a CPA and 2) earn a Bachelor of Science in Business and a Master of Business Administration with emphases in Accounting in a period as short as 5 years. To be eligible for this program, students must have completed ACCT 3010, 3020 and 3110 with B's or better in each course and have a cumulative overall GPA of a 3.25 or above. Students must apply for admission to the MBA program well in advance of their final semester as an undergraduate and must meet the regular admissions requirements for the MBA program (no provisional admission allowed). Students who do not participate in the 4+1 program may still apply to the MBA program and be eligible for licensure upon completion.

BUSINESS ADMINISTRATION

The Business Administration area of emphasis allows students to select 18 semester hours of upper division business coursework based on the individual's particular interests and objectives. These courses must be three-credit hour upper division business courses and must be selected from at least two different subject areas to provide a solid business foundation. Coursework selected for the area of emphasis must be pre-approved via a contract and cannot duplicate an existing area of emphasis.

FINANCE

Finance encompasses both the science and the art of managing money and investments. The finance curriculum is divided into three primary areas: financial management, financial markets and institutions, and investments. The study of finance provides students with an understanding of numerous financial theories such as the relation between risk and return, the factors that determine asset values, and strategies for minimizing the risk exposure of both corporations and investors. An understanding of these theories helps students develop the ability to make sound and practical business and personal investment decisions. The importance of finance in the economy and the functions and purposes of monetary systems, credit, prices, money markets, and financial institutions are stressed throughout the area of emphasis. Students are trained to think logically regarding financial problems and to formulate sound financial decisions, policies, and practices.

The finance emphasis prepares students for jobs in a corporate industrial setting or in the financial services industry. Students who study corporate finance prepare for careers managing corporate assets. Specific jobs in the corporate setting can include cash and receivables management, capital budgeting decision making, short- and long-term financial planning and analysis, risk analysis and management, and financing decisions. Financial services careers include positions in investment counseling, insurance, personal asset management and other financial planning careers.

To meet the 18 credit hours of upper division coursework in the finance emphasis, students must complete the following required courses and one of the elective courses listed below.

Required Courses

- FNCE 4000 - Advanced Corporate Finance
- FNCE 4100 - Cases and Concepts in Finance
- FNCE 4200 - Investment and Portfolio Management
- FNCE 4400 - International Financial Management
- FNCE 4500 - Money and Banking

And select one course from the following:

- FNCE 4250 - Financial Risk Management
- FNCE 4590 - Ethics in Finance
- FNCE 4960 - Internship in Finance
- ACCT 3020 - Intermediate Accounting II
- ACCT 3110 - Cost Accounting

HUMAN RESOURCES MANAGEMENT

The goal of the human resources management function in organizations is to develop and maintain effective relationships between employers and employees. Human resource (HR) managers achieve this in a number of

ways—matching people's skills to job requirements, developing fair compensation practices, appraising employees' performance levels, developing employees' skills and abilities through training and career planning, implementing productivity improvement programs, and many other activities. HR managers perform these roles ethically and legally in an ever-changing environment. These changes include new employment laws, the changing skills and demographics of the work force, people expecting more and different things from their employers, and companies becoming increasingly globalized in their operations. The HR manager's job is challenging. HR managers are in high demand.

The human resources management emphasis prepares students for careers in HR by covering such topics as recruiting, staffing, training and development, performance appraisal, evaluation, compensation, career planning, safety and health, equal employment opportunity and affirmative action, and labor relations.

Required Courses

- HRMG 4340 - Labor Relations and Negotiation
- HRMG 4380 - Human Resource Management
- HRMG 4390 - Legal and Social Issues in Human Resources Management
- HRMG 4410 - Motivating, Rewarding, and Developing Employees
- HRMG 4850 - Directed Research Projects in Human Resources and Management

And select one course from the following:

- HRMG 4960 - Internship in Human Resources
- MGMT 3900 - Improving Personal and Team Creativity
- MGMT 4110 - Experiences in Leadership
- MGMT 4370 - Organizational Development and Change
- OPTM 3390 - Managing Projects for Competitive Advantage
- OPTM 4100 - Managing Service Operations

INFORMATION SYSTEMS

The use of information technology is pervasive in the business world today. No matter what career is chosen, virtually all students will have to work with and understand the basics of information technology to be successful. The information systems area of emphasis helps prepare students for this technology-centric world.

The information systems curriculum includes an introduction to basic computer hardware and software, programming, databases, networking, along with the fundamentals of analysis and design and project management. The continuous advances in the use of decision support systems and management information systems make the field one from which to build a productive career in business.

Required Courses

- INFS 3070 - Foundations of Business Programming
- INFS 3080 - Web-based Business Programming
- INFS 3400 - Database Concepts and Applications
- INFS 3700 - Computer Networks and Telecommunications
- OPTM 3390 - Managing Projects for Competitive Advantage
- INFS 3750 - Information System Security Management
- INFS 4100 - Systems Analysis and Design
- INFS 4050 - Information Technology Integration

INTERNATIONAL BUSINESS

Economies are intertwined as never before, and in most industrial sectors competition is increasingly global. Simultaneously, there are a number of new and dynamic events and processes that influence the world economic, cultural, and political arenas. It is essential that managers understand the implications of these changes. They affect managers in at least three ways. First, firms that see themselves as primarily domestic companies are facing increased competition by foreign firms in their domestic market. Secondly, foreign markets and resources are becoming increasingly important in terms of incremental revenue, profitability, sources of technology, and capital. And third, U.S. world-wide economic influence has diminished in a relative sense, and it has become more important than ever for executives to be aware of international influences.

This area of emphasis addresses these issues and introduces students to the challenges and basic skills required for effective international business management.

Required Courses

- INTB 3600 - International Business
- FNCE 4400 - International Financial Management
- MKTG 4900 - International Marketing
- INTB 4800 - International Management

And select two courses from the following:

- INTB 4610 - Regional Business Environment Europe
- INTB 4960 - Internship in International Business
- COMM 3280 - Intercultural and Global Communication
- ECON 3280 - International Political Economy
- ECON 3410 - International Economics
- HRMG 4850 - Directed Research Projects in Human Resources and Management
- MGMT 3900 - Improving Personal and Team Creativity
- PSC 4210 - International Politics
- PSC 4250 - International Law
- SOC 4380 - Globalization and Development

Or a pre-approved 3-credit hour upper division business course that has significant emphasis on international issues.

Foreign Language Recommendation

Students majoring in international business are strongly encouraged to use their lower-division electives for learning another language and/or taking a language immersion program.

MANAGEMENT

Today's highly competitive, constantly changing global environment places a premium on skilled managers who know how to lead and motivate people, build high performance teams, develop world class organizations, and understand the dynamics of organization behavior. Organizations of all sizes and types need skilled managers.

The management curriculum provides a foundation for careers in management, human resource management, small business management and entrepreneurship, and public agency management. This area of emphasis addresses contemporary issues in management and the changing roles of managers and leaders at all levels of the organization.

Required Courses

- MGMT 3900 - Improving Personal and Team Creativity
- MGMT 4110 - Experiences in Leadership
- MGMT 4370 - Organizational Development and Change
- MGMT 4500 - Principles of Negotiation and Conflict Management
- HRMG 4380 - Human Resource Management

And select one course from the following:

- HRMG 4390 - Legal and Social Issues in Human Resources Management
- HRMG 4410 - Motivating, Rewarding, and Developing Employees
- HRMG 4850 - Directed Research Projects in Human Resources and Management
- HRMG 4960 - Internship in Human Resources
- INTB 4800 - International Management
- MGMT 4960 - Internship in Management
- MKTG 3300 - Marketing Research
- MKTG 4400 - Service Management and Marketing
- OPTM 3390 - Managing Projects for Competitive Advantage
- OPTM 4100 - Managing Service Operations

MARKETING

Global and national economies are directly influenced by marketing, a dynamic and challenging activity relevant to profit and nonprofit organizations alike. Marketing is the guiding force in conceiving and designing products and services, pricing them according to perceived value in the marketplace, promoting them through advertising and personal selling to potential buyers, and providing acceptable distribution arrangements for customers. Customer-oriented planning and implementation provide the cornerstone of modern marketing techniques and strategies.

Marketing is a vital ingredient in an organization's formula for success in effecting mutually beneficial exchanges between buyers and sellers. Because marketing is a synthesis of a wide variety of disciplines, including management, economics, psychology, statistics, and sociology, marketing classes tend to attract students that excel in creative areas, problem-solving capabilities, and strategic thinking.

Our graduates typically find career opportunities in sales, advertising, marketing research, product development, retailing, wholesaling, e-commerce and related endeavors, both domestically and internationally.

Required Courses

- MKTG 3300 - Marketing Research
- MKTG 4650 - Promotion Management and Strategy
- MKTG 4800 - Marketing Planning and Strategies

And select three courses from the following:

- MKTG 3400 - Personal Selling and Sales Management
- MKTG 3550 - Brand Management
- MKTG 4400 - Service Management and Marketing
- MKTG 4500 - Retailing Strategy
- MKTG 4510 - Sport Marketing
- MKTG 4550 - Contemporary Issues in Marketing

- MKTG 4600 - Business to Business Marketing
- MKTG 4700 - Digital and Social Media Marketing
- MKTG 4900 - International Marketing
- MKTG 4960 - Internship in Marketing

PGA GOLF MANAGEMENT

The objective of the PGA Golf Management (PGM) program is to prepare students to be professional managers in the golf industry who hold the distinction of membership in the Professional Golfers' Association of America (PGA). These individuals will be qualified to fill any of a number of roles in a variety of positions at many different kinds of entities.

The program involves a three-part preparation process: (a) completing the requirements for a bachelor's degree in business, (b) completing 16 months of supervised internships, and (c) completing the PGA's Professional Golf Management 2.0 Program, including passing the Playing Ability Test (PAT).

Individuals generally enter the PGM Program as freshman business students; in addition to meeting standard academic entrance requirements, these students must have a documented golf handicap that is no greater than 12.0. Qualified transfer students are also accepted into the program; applicants must also meet the handicap requirement and should understand that their transfer credits may shorten only the time allocated to the academic portion of the program. They must complete the internships and the PGA 2.0 Program on the same schedule as other students. Because there are relatively few electives in the program, it is possible that not all transferred courses will count toward graduation. The UCCS PGA Golf Management Program also accepts transfer students from other PGA-accredited PGM Programs if they are in good standing and otherwise meet our entrance requirements.

All new PGA Golf Management students start their program in the fall semester.

Required Courses
The undergraduate curriculum for the PGM includes the following required courses:

- PGMT 1002 - Qualifying/Level 1 PGA Golf Management 2.0 Part 1
- PGMT 1012 - Level 1 PGA Golf Management Part 2
- PGMT 1202 - Level 1 Introduction to Teaching and Golf Club Performance - PGA Golf Management 2.0
- PGMT 2002 - Level 2 PGA Golf Management
- PGMT 2012 - Level 2 PGA Golf Management Part 2
- PGMT 2202 - Level 2 Intermediate Teaching and Golf Club Alteration - PGA Golf Management 2.0
- PGMT 2502 - Level 2 Turfgrass Management - PGA Golf Management Educational Program 2.0
- PGMT 3002 - Level 3 PGA Golf Management 2.0
- PGMT 3202 - Level 3 Advanced Golf Instruction Part 1 PGA Golf Management 2.0
- PGMT 3212 - Level 3 Advanced Golf Instruction Part 2 PGA Golf Management 2.0
- BIOL 3450 - Anatomy and Exercise Science: Fundamentals and Applications to Golf
- PGMT 3602 - Level 3, Food and Beverage Control - PGA Golf Management Educational Program 2.0

Required Internships
The following internships must be completed:

- PGMT 1100 - Cooperative Internship I
- PGMT 2100 - Cooperative Internship IIa

- PGMT 2110 - Cooperative Internship IIb
- PGMT 4100 - Cooperative Internship IIIa
- PGMT 4110 - Cooperative Internship IIIb

PGA Golf Management Program Notes

In addition to required courses and internships, PGA Golf Management students must complete all requirements included in the BS Business degree. Many of the PGMT required courses satisfy electives in the Business program. Please see an academic advisor for questions about PGA Golf Management program progression.

Normally, PGMT 1100 is completed in the summer following the freshman year. PGMT 2100 and 2110 are completed in successive Summer and Fall semesters following the sophomore year. PGMT 4100 and 4110 are completed in successive summer and fall semesters after the senior year. Transfer students may complete their internships on a different schedule, depending on the number and nature of their transferred academic credits.

All internships are supervised by the Internship Coordinator and members of the PGA of America at facilities approved by the PGA Golf Management Program team. Over 400 approved facilities are located throughout the United States or, in some circumstances, outside the country. Placement is assisted by the Internship Coordinator in cooperation with each student. Internships provide compensation paid directly to the students. Each student submits a post-internship report and receives a grade based on completing specified work experiences and a performance evaluation.

Students must also enroll in the program at the beginning of their first year. Enrollment occurs when students enroll in PGMT 1002. The cost of the PGA/PGM™ program is in addition to regular tuition and student fees. These amounts are collected from students as special course-related fees and are passed through to the PGA of America. Completing the PGA 2.0 Program also requires passing three levels of PGA knowledge tests (during the first, second, and third years) as well as the Playing Ability Test administered by the Colorado Section of the PGA or other sections in other states. Students are encouraged to pass the PAT as soon as possible, even before enrollment and preferably before the second internship. PGA accreditation standards require first year students to attempt the PAT at least once, second year students at least twice, and all others at least three times per year until it is passed. Additional information about the PGA 2.0 Program and the PAT is available at www.pga.org. Graduates who have completed all PGA 2.0 Program requirements are eligible for Class A membership in the PGA of America upon gaining employment in suitable positions in the industry. Students are subject to additional academic and professional policies described in the PGA Golf Management Student Handbook. Copies of the handbook are available from the Program Director. Additional information about the program and how to gain admission can be found at http://www.uccs.edu/~pgm/.

SERVICE MANAGEMENT

In the U.S., approximately 82% of the labor force and 80% of the GDP are accounted for by services. Virtually every organization has a significant service component. The Service Management area of emphasis is an integrated collection of courses designed to provide the unique skills and knowledge required to succeed in the service economy. This emphasis is especially valuable for those who plan to work in a management or professional capacity in the service sector, including professional service organizations (e.g. law, accounting), customer service departments, call centers, help desks, insurance etc.

Required Courses

- HRMG 4380 - Human Resource Management
- MGMT 4110 - Experiences in Leadership
- MKTG 4400 - Service Management and Marketing

- OPTM 4100 - Managing Service Operations

And select three courses from the following:

- HRMG 4340 - Labor Relations and Negotiation
- HRMG 4390 - Legal and Social Issues in Human Resources Management
- HRMG 4410 - Motivating, Rewarding, and Developing Employees
- HRMG 4850 - Directed Research Projects in Human Resources and Management
- HRMG 4960 - Internship in Human Resources
- MGMT 3900 - Improving Personal and Team Creativity
- MGMT 4370 - Organizational Development and Change
- MGMT 4960 - Internship in Management
- MKTG 3300 - Marketing Research
- MKTG 4500 - Retailing Strategy
- MKTG 4510 - Sport Marketing
- MKTG 4800 - Marketing Planning and Strategies

SPORT MANAGEMENT

The Sport Management area of emphasis is designed to prepare students to become the next generation of leaders in the sport management industry through education and training that imparts the knowledge, skills, and experience essential for providing increased enjoyment and rewarding participation within the wide and varied world of sport. The Sport Management program at UCCS emphasizes the Olympic sports movement, soccer, and collegiate sports. In addition to this, the program also works with professional clubs and public and private sports organizations. Under the Sport Management emphasis students can be considered for a Soccer Management track specifically geared to train the next generation of soccer management leaders.

The Sport Management program is housed in the AACSB-accredited College of Business and is classified as a program of distinction with restricted and limited enrollments. Admission standards for the Sport Management program are higher than the College of Business. Consequently, admission to the College of Business does not automatically mean admission to the Sport Management program. In order to gain admission to the Sport Management program applicants must first be admitted to the College of Business and then make separate application to the Sport Management program.

Individuals generally and preferably enter the Sport Management program as freshman business students. In order to be considered for admission to the Sport Management program students must have earned a high school diploma with a minimum of 3.0 GPA on 4.0 scale, 20 ACT scores in all topic areas or 500 SAT scores in all topic areas. These are minimum application standards, thus meeting these minimum standards does not guarantee admission to the Sport Management program. While many students within the program will have actively participated in sports, this is not a requirement of the program.

The Sport Management program seeks to admit reliable students of strong moral character who are able to present themselves in a professional environment. Sport Management students are required to engage in multiple internships and field experience events and as such will represent themselves, the Sport Management program, the College of Business, UCCS, and in international internships the United States. While not required, submitting one or more letters of recommendation from high school teachers familiar with an applicant's academic performance is considered a plus.

Upon graduation Sport Management students will earn a Bachelor of Science degree in Business with an emphasis in Sport Management. Students in the Sport Management program will be required to meet all College of Business

undergraduate requirements and all Sport Management major requirements. In addition to the specific courses listed below, Sport Management students are required to engage in 50+ hours of field experience during their freshman and sophomore years and then two separate internships during their junior and senior years. Internships are not guaranteed or awarded. Students work with the program's Internship Coordinator to identify opportunities and prepare to compete for positions. Sport students must also abide by the rules and policies that are set forth in the Sport Management Program Handbook and the Sport Management Internship Handbook.

Sport Management Specific Courses

- SPTM 1000 - Introduction to Sport Management *
- SPTM 2000 - Principles of Sport Law *
- SPTM 2350 - Sport Science for Sport Administrators
- SPTM 4200 - Critical Issues in Sport Management
- SPTM 4300 - Sport Facility and Event Management
- MKTG 4510 - Sport Marketing

*Substitutes for BUAD 1000 and BLAW 2000 respectively

Required Field Experience

- SPTM 2960 - Field Experience in Sport Management
- SPTM 3960 - Internship in Sport Management
- SPTM 4960 - Internship in Sport Management
- Internships are typically conducted with local sports organizations such as the USOC, USA National Governing Bodies, Colorado Springs Sports Corporation, Colorado Rapids, Colorado-based professional sport clubs, local collegiate programs or other select private and public sports organizations. Students are responsible for obtaining their internship opportunities as well as the transportation to and from these opportunities.
- Internships are not guaranteed and students are required to compete for internships.
- Internships are awarded only by the organization sponsoring the internship.

For the Soccer Management Track students take:

- SPTM 3965 - Practicum in Soccer Management
- SPTM 4965 - Practicum in Soccer Management
- International opportunities with select English soccer clubs may be available for seniors within the Soccer Management Track who meet all prerequisites and qualifications. Students interested in international practicums will need to be prepared to cover the additional costs associated with international travel, visa fees, housing, and dining.
- Practicums are not guaranteed, and students are required to compete for practicums.
- Practicums are awarded only by the organization sponsoring the practicum.

Elective Courses - select three

Soccer Students must take

- SPTM 4550 - Managing Soccer: Global and Local Contexts
- SPTM 4250 - International and Olympic Sport Governance
- SPTM 4450 - Collegiate Athletic Administration
- Sport Management students must take either SPTM 4250 or 4450, but may take both.
- SPTM 4350 - Sport Economics and Finance
  or

- Select marketing, management and operations courses upon consultation and approval with College of Business undergraduate advisors and the Sport Management Department.

GRADUATE PROGRAMS OF STUDY

- Master of Business Administration
- Master of Science in Accounting
- Graduate Certificates

BUSINESS ADMINISTRATION, MBA

The Master of Business Administration program is devoted to the concepts, analytical tools, and communication skills required for competent and responsible management. The management of an enterprise is viewed in its entirety and within its social, political, and economic environment. All on-campus graduate level courses are scheduled during the evening hours to accommodate employed students.

ON CAMPUS AND ONLINE OPTIONS

The Graduate School of Business Administration offers an MBA program delivered via two modes- residence (on-campus) and distance (online). Students may choose to complete their MBA program through either of the two modes or take a combination of on-campus and online courses. Courses with numbers ending in "90" are online classes. Online tuition, online registration and online drop dates differ from campus tuition, campus registration and campus drop dates. Please contact the Graduate Advising Office for more information.

ON CAMPUS MBA PROGRAM

The on-campus MBA is designed for students to complete their degree as a full-time or part-time student. Students structure the pace of completing the program to meet personal and professional goals. Students may begin the program in the fall, spring, or summer semester. In the fall or spring semesters, courses are offered from 4:45 to 7:20 p.m. or 7:30 to 10:05 p.m. and meet once a week.

ONLINE MINIMUM COMPUTER SYSTEM REQUIREMENTS

A broadband internet connection (Cable/DSL/Satellite)
A personal Windows PC, Mac computer, or tablet with Windows installed.

To take full advantage of the interactivity of the courses, the following system profiles are required:

Microsoft Windows	**Mac OS X**
Windows 7 or newer	Version 10.7 Lion or newer
8 GB RAM or more	Intel based Mac
Sound card & speakers or head-phones	8 GB of RAM

SOFTWARE: (can be purchased online and downloaded using the link on the UCCS Help Desk site)
BROWSER: Newest version of **Firefox, Chrome,** and **Safari**
RECOMMENDED EQUIPMENT: Headset microphone, Webcam

MBA GRADUATE ADMISSION

ADMISSION CRITERIA

The Graduate School of Business Administration seeks to admit students who show a high likelihood of success in postgraduate business study. The following 3 basic indicators are used to evaluate candidates for admission:

1. PRIOR ACADEMIC EXPERIENCE. A 4-year Baccalaureate degree from a regionally accredited institution or foreign equivalent is a condition for application. The applicant's complete academic record from all institutions attended is examined.
2. ADMISSION TEST. Applicants may submit scores from either the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE). In some cases, the GMAT may be waived if the applicant has substantial business experience or holds an advanced degree (e.g. Master's or higher).
3. EMPLOYMENT EXPERIENCE. Of particular interest is the candidate's progression of work. Recommendations from prior and current colleagues are optional. Though employment experience may be used to evaluate a candidate, it is not required.

PROVISIONAL AND SENIOR ADMITS

Individuals may be admitted on a provisional status at the discretion of the admissions committee. If the terms of the provisional admittance are met, the student will be transferred to regular degree status. Students who do not meet the terms of the provisional admission are not eligible for admittance into the program. UCCS seniors who have satisfied the undergraduate residence requirements and who need no more than 6 semester hours to meet their requirements for an undergraduate degree may be admitted to the MBA program. They must meet regular admissions criteria and submit a completed application by the published deadline. They must complete their final undergraduate courses during their first semester as an MBA student.

APPLICATION PROCESS AND DEADLINES

The application, GMAT or GRE, one official transcript (not student copies) from each post-secondary institution attended, a resume, a statement of interest, and the nonrefundable application fee should be submitted by the priority deadline.

See: www.uccs.edu/mba for the online application or contact the Graduate advising office by phone at 1-800-990-8227, ext. 3408, or by email at cobgrad@uccs.edu. The mailing address for supporting materials is as follows:

UCCS Graduate School of Business Administration
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION ACADEMIC POLICIES

ACCESS TO GRADUATE COURSES

Students must be officially admitted to the MBA program in order to register for graduate level courses. Students who are officially admitted to other CU graduate programs may be eligible to register for MBA courses. All course prerequisites must be met. Interested students should contact the Graduate Office for more information.

COURSE LOAD

The typical course load is 3-6 hours for a working graduate student and 9-12 hours for those attending school full-time during the fall and spring semesters. Students are limited to 12 credit hours for the fall and the spring semesters. Students are limited to 6 credit hours for the summer semester. Credit hours over these limits require that an academic petition be approved. Concurrent enrollment in both campus and online classes is subject to the same credit hour limits.

MBA COMPLETION TIMEFRAME

Candidates for the MBA degree are expected to complete the degree within five years. If coursework is completed more than five years before the expected graduation date, the work will not be accepted for the degree unless it is validated by the Graduate School of Business Administration.

MBA STANDARDS OF PERFORMANCE

Course Repeat Policy
Any grade below C (2.0) is not a passing grade for graduate students. A student may repeat a course once for which he or she has received a grade below C. Both the original grade and the grade for the repeated course count in the computation of the grade point average.

Grade Point Average
No individual grade below a C will count towards degree requirements. To be in good standing, students must have an overall grade point average of no less than 3.0 for all degree program coursework attempted.

Probation and Suspension
The academic performance of each student will be reviewed at the end of each semester. Any student who has a cumulative grade point average less than 3.0 in graduate coursework will be placed on probation. In general, students will not be placed on probation until a minimum of nine semester hours has been completed. After a student has been placed on probation, the student has a maximum of one calendar year to raise his or her grade point average to 3.0. Courses taken to raise the cumulative grade point average must be applicable to the degree, and must be taken in the three semesters (including summer) immediately following the semester in which the cumulative grade point average fell below 3.0. Failure to raise the cumulative grade point average to 3.0 in the time period outlined will result in immediate suspension. While on academic probation, failure to demonstrate satisfactory academic progress, (meaning the cumulative GPA must improve each semester that classes are taken), towards a degree may result in academic suspension. In the event a student attains probationary status more than one time, the same time limits shall apply. If a student's cumulative GPA drops below a 2.0, they may be suspended immediately. A suspended graduate student is eligible to petition for readmission after one calendar year.

Transfer Policy
A maximum of 6 semester hours of appropriate coursework from another AACSB accredited graduate program may be considered for transfer to the degree program. Transfer work may be no older than five years at the time of graduation from the graduate program.

Graduate Internships
At the graduate level, internships are 1-3 credit hours, pass/fail only and may be used as business elective credit. Internships are approved through an application process, which can be obtained through the Internship and Career Placement Center. Students must apply **prior** to beginning their internship duties and should register for credit during the semester in which the internship is being completed. A maximum of 3 credit hours of internship may be applied to a graduate business degree.

Graduate Academic Advising
Each graduate student must meet with an MBA advisor during the student's first term of attendance to prepare a degree plan. Online MBA students will have a degree plan emailed to them, which must be signed and returned to the MBA Office. The foundation courses which the student must complete (if any), and the student's area of emphasis will be discussed at that time.

GRADUATION REQUIREMENTS

Graduation Audit
All students must contact the MBA Office for a complete academic evaluation DURING THE SEMESTER PRIOR TO THEIR FINAL SEMESTER. Failure to request an audit or failure to complete audit documents in a timely manner may delay a student's graduation.

Commencement
Students seeking to participate in commencement and other academic ceremonies will need to complete ALL academic requirements in advance. Participation in academic ceremonies that recognize or honor students for the completion of an academic program or specific academic accomplishment is based on the understanding that all requirements have been completed. Every effort will be made to determine eligibility in advance, and only students who have met requirements will be permitted to participate.

MBA FOUNDATION REQUIREMENTS

The Graduate School of Business Administration provides the following series of business foundation courses as required background courses for the graduate study of business. These courses may be waived on a course-by-course basis with prior academic coursework or successful scores on designated achievement tests.

- ACCT 5500 - Introduction to Accounting **or**
- ACCT 5590 - Introduction to Accounting
- BUAD 5500 - Fundamentals of Economics **or**
- BUAD 5590 - Fundamentals of Economics
- BGSO 5500 - Business, Government, and Society **or**
- BGSO 5590 - Business, Government, and Society
- QUAN 5500 - Fundamentals of Business Statistics **or**
- QUAN 5590 - Fundamentals of Business Statistics

Foundation Course Information
These foundation classes are graduate level courses that - if required - are taken in addition to the 36 semester hours required for the MBA degree. Graduate students who are interested in waiving one or more of the MBA foundation courses based on related prior coursework must consult with a graduate advisor. Waivers of foundation courses are based on a number of criteria, including the age of the prior coursework, the grade earned, and other considerations determined by the faculty. Prior coursework must have been completed at a regionally accredited institution. Foundation course waivers are made at the discretion of the Graduate School of Business Administration and are recorded on the student's degree plan.

MBA DEGREE REQUIREMENTS

Credit Hours
In addition to any foundation courses which may be required (see previous section), students must complete a minimum of 36 semester hours of coursework for the MBA degree. This coursework consists of 21 hours of core

competency courses, 3 hours of an MBA global perspective elective, and 12 hours of elective courses. With the 15 combined elective hours, students may choose to earn a general MBA or choose to concentrate in a functional or interdisciplinary area of emphasis as listed below.

Choice of Emphasis
Students may choose to complete an area of emphasis in Accounting, Finance, Health Care Administration, Innovation Management, International Business, Management, Marketing, Operations Management, Project Management, or Service Management.

MBA CORE REQUIREMENTS (21 HOURS)

- ACCT 6100 - Accounting for Decision Making **or**
- ACCT 6190 - Accounting for Decision Making
- FNCE 6000 - Corporate Financial Management **or**
- FNCE 6090 - Corporate Financial Management
- INFS 6000 - Information Systems **or**
- INFS 6090 - Information Systems
- MGMT 6000 - Leading and Managing in Changing Times **or**
- MGMT 6090 - Leading and Managing in Changing Times
- MKTG 6000 - Marketing Strategy **or**
- MKTG 6090 - Marketing Strategy
- OPTM 6000 - Operations: Competing Through Capabilities **or**
- OPTM 6090 - Operations: Competing Through Capabilities
- STRT 6500 - Strategic Management **or**
- STRT 6590 - Strategic Management

MBA GLOBAL PERSPECTIVE ELECTIVE (3 HOURS)

The UCCS MBA program believes that our graduates' success in the global business environment will depend on their ability to recognize, appreciate and respect diversity and cultural differences. These skills are developed throughout our curriculum and by way of a required global perspective elective course. Global perspective electives can also be counted toward a student's area of emphasis. Students choose one (1) course from the following list to fulfill their global perspective requirement.

- INTB 6190 - Managing in Global Markets
- INTB 6990 - Regional Business Environment Europe
- INTB 6991 - Regional Business Environment: Asia
- FNCE 6400 - International Financial Management **or**
- FNCE 6490 - International Financial Management
- MKTG 6900 - International Marketing and Export Management **or**
- MKTG 6990 - International Marketing and Export Management
- OPTM 6200 - Global Supply Chain Management
- OPTM 6490 - Managing Virtual Teams: Strategies and Development

  Note: FNCE 6490, INTB 6190, INTB 6990, INTB 6991, MKTG 6990, AND OPTM 6490 are taken through the online delivery mode.

MBA ELECTIVES (12 HOURS)

Electives may be selected from any Area of Emphasis, providing prerequisites have been met.

MBA AREAS OF EMPHASIS REQUIREMENTS

Students may choose to receive a general MBA or decide to specialize in a functional or interdisciplinary area of emphasis as listed below. Note: Health Care Administration and Project Management are only offered online.

Accounting MBA (On Campus) -12 hours

The accounting area of emphasis prepares students for accounting positions available in various industries and institutions. Students may either seek employment in the corporate or governmental arena or opt to sit for the Certified Public Accountant (CPA) exam if they have an interest in public accounting. Students who intend to earn the CPA certificate should refer to the State of Colorado Board of Accountancy website for detailed information and exam requirements.

Students who choose an area in Accounting will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective and 12 semester hours of Accounting (ACCT) elective courses. Students who do not have an undergraduate accounting degree take an additional 15 semester hours of undergraduate coursework in accounting.

Students with an undergraduate degree in accounting take one of the following:

- ACCT 6010 - Seminar: Financial Accounting Theory
- ACCT 6750 - Advanced Financial Accounting

  Plus three of the following, for which the undergraduate equivalent was not taken:

- ACCT 6510 - Accounting Ethics and Institutions
- ACCT 6600 - Auditing
- ACCT 6620 - Advanced Auditing
- ACCT 6710 - Individual Income Tax
- ACCT 6720 - Corporate and Partnership Taxation
- ACCT 6730 - Introduction to Accounting Systems
- ACCT 6740 - Accounting for Governments and Not-for-Profit Organizations
- ACCT 6770 - Federal Tax Research and Planning

Students with a non-accounting undergraduate degree also take:

- ACCT 2010 - Introduction to Financial Accounting
- ACCT 2020 - Introduction to Managerial Accounting
- ACCT 3010 - Intermediate Accounting I
- ACCT 3020 - Intermediate Accounting II
- ACCT 3110 - Cost Accounting

  Note: Those graduate students who are preparing for a career as a CPA should read the legal requirements and recommendations for becoming certified in Colorado and other states as described in the Accounting Notes in the Accounting section of the Business, BS in this catalog.

Finance MBA (On Campus and Online) - 9 hours

All organizations, large and small, must effectively invest and manage their capital. The finance function is critical in both for-profit and not-for-profit organizations. Job opportunities exist for finance graduates in almost all industries including the financial services industry and positions within the finance area of corporations. Finance graduates manage capital for large organizations and their independent business units as well as small organizations.

Students who choose an area in Finance will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, 9 semester hours of Finance (FNCE) elective courses, and 3 semester hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- FNCE 6100 - Problems and Policies in Financial Management
- FNCE 6200 - Investment Management and Analysis **or**
- FNCE 6290 - Investment Management and Analysis
- FNCE 6400 - International Financial Management **or**
- FNCE 6490 - International Financial Management
- FNCE 6500 - Managerial Economics and the Business Cycle **or**
- FNCE 6590 - Managerial Economics and the Business Cycle

General MBA (On Campus and Online) - 15 hours

An MBA is a broad degree that prepares students for a variety of career paths from climbing the corporate ladder to launching an entrepreneurial venture to work in non-profit organizations.

The General Business Area of Emphasis is intended for students who desire to customize their own MBA. It allows maximum flexibility by allowing students to choose any 6000-level business elective courses for their area of specialized study. This area works best if students have a general goal in mind when choosing course.

Students who choose a General MBA will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, and 12 hours of 6000-level business elective courses based on individual educational goals and interests for a total of 15 combined elective hours.

Health Care Administration MBA (Online) - 12 hours

The many changes in government laws and regulations, technology, societal needs and insurance plans have created a large need for administrative and business education for health care professionals.

Students who choose an area in Health Care Administration will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective and 12 semester hours of Health Care elective courses for a total of 15 combined elective hours.

- HCAD 6190 - Health Care Administration
- HCAD 6290 - Health Care Policy
- HCAD 6390 - Health Care Ethics and Law
- HCAD 6490 - Health Care Budget and Finance

Innovation Management MBA (On Campus and Online) - 9 hours

Innovation has become a critical driver of business success in today's economy. Innovation can be defined as successfully implementing a new idea in an organization. An innovation can be based on new technology, but it can also simply be a new way of doing something. Innovation can take place anywhere - in new startup firms, established corporations, or nonprofit organizations. Students completing the Innovation Management emphasis will learn how to manage the process of innovation to create value in their organizations through new products, new processes, or new business models.

Students who choose an area in Innovation Management will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, 9 semester hours of Innovation Management elective courses, and 3 hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- BUAD 6610 - Managing Innovation for Strategic Advantage **or**
- BUAD 6690 - Managing Innovation for Strategic Advantage
- BUAD 6710 - Transforming Technology Organizations and Employees **or**
- BUAD 6490 - Transforming Technology Organizations and Employees
- BUAD 6800 - Entrepreneurship and New Ventures **or**
- BUAD 6890 - Entrepreneurship and New Ventures
- OPTM 6300 - Managing Projects for Competitive Advantage **or**
- OPTM 6390 - Managing Projects for Competitive Advantage

INTERNATIONAL BUSINESS MBA (ON CAMPUS AND ONLINE) - 9 HOURS

An MBA with emphasis in International Business will prepare students to excel in the emerging field of International Business. This field of study is becoming more relevant and important as the global economy expands. Various opportunities for study abroad exist for MBA students. These are coordinated through the business advising office. Students are encouraged to take a foreign language in order to strengthen this area of emphasis.

Students who choose an area in International Business will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, 9 semester hours of International Business elective courses and 3 semester hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- FNCE 6400 - International Financial Management **or**
- FNCE 6490 - International Financial Management
- INTB 6100 - Managing in Global Markets **or**
- INTB 6190 - Managing in Global Markets
- INTB 6990 - Regional Business Environment Europe
- INTB 6991 - Regional Business Environment: Asia
- MKTG 6900 - International Marketing and Export Management **or**
- MKTG 6990 - International Marketing and Export Management

Management MBA (On Campus and Online) - 9 hours

In today's highly competitive global environment, a premium is placed on skilled managers who know how to motivate and lead people. This area of emphasis addresses these issues and other contemporary issues in management. Additionally, the changing roles of managers and leaders at management levels within the organization are explored. The Management emphasis also focuses on the development and maintenance of effective relationships between employers and employees.

Students who choose an area in Management will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, 9 semester hours of Management (MGMT) elective courses and 3 hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- BUAD 6700 - Service Management **or**
- BUAD 6790 - Service Management
- MGMT 6200 - Managing Organization Development, Change, and Transformation **or**
- MGMT 6290 - Managing Organization Development, Change, and Transformation
- MGMT 6300 - Managing Human Resources for Competitive Advantage **or**
- MGMT 6390 - Managing Human Resources for Competitive Advantage
- MGMT 6400 - Legal Issues in Managing Human Resources
- MGMT 6550 - Applied Principles of Negotiation and Conflict Management

Marketing MBA (On Campus and Online) - 9 hours

An effective marketing program is necessary to the success of any business organization. Through the marketing efforts of a firm, products and services are designed and delivered that maximize customer satisfaction. Students choosing the marketing area of emphasis may find exciting careers in such diverse fields as product management, professional selling, customer support, advertising and marketing research. The marketing curriculum is designed to give the student hands on marketing experience through applied classes and projects.

Students who choose an area in Marketing will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective, 9 semester hours of Marketing (MKTG) elective courses, and 3 hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- MKTG 6300 - Marketing Analytics
- MKTG 6400 - Service Marketing
- MKTG 6500 - Integrated Marketing Communications **or**
- MKTG 6590 - Integrated Marketing Communications
- MKTG 6700 - Digital Marketing and Social Media Strategy **or**
- MKTG 6790 - Digital Marketing and Social Media Strategy
- MKTG 6900 - International Marketing and Export Management **or**
- MKTG 6990 - International Marketing and Export Management

Operations Management MBA (On Campus) - 9 hours

Both tangible products and services require effective process technology management. In the past few decades, changes have revolutionized how products are manufactured. Quality management has become a major focus of

most contemporary manufacturing organizations. Students completing this emphasis will be prepared to seek positions in manufacturing in virtually all industries.

Students who choose an area in Operations Management will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective electives, 9 semester hours of Operations Management elective courses, and 3 hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete any three of the following:

- BUAD 6700 - Service Management **or**
- BUAD 6790 - Service Management
- OPTM 6100 - Customer Focused Processes: Quality Management and Metrics
- OPTM 6200 - Global Supply Chain Management
- OPTM 6300 - Managing Projects for Competitive Advantage **or**
- OPTM 6390 - Managing Projects for Competitive Advantage

Project Management MBA (Online) - 12 hours

Companies are turning to a project structure to manage the increasingly complex, cross-functional tasks present in today's business climate. As the number of both "successful" and "unsuccessful" projects continues to grow, the impact of project management on an organization is more visible. Students completing this area of emphasis can expect to master traditional project management skills and be prepared to manage in complex multiple project environments with a global reach.

Students who choose an area in Project Management will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective elective and 12 semester hours of Project Management (OPTM) elective courses for a total of 15 combined elective hours.

Complete the following four courses:

- OPTM 6300 - Managing Projects for Competitive Advantage **or**
- OPTM 6390 - Managing Projects for Competitive Advantage
- OPTM 6490 - Managing Virtual Teams: Strategies and Development
- OPTM 6590 - Project Estimation and Risk Management
- OPTM 6690 - Bridging Strategy and Tactics in Project Management

Service Management MBA (On Campus) - 9 hours

Service industries are expected to continue to grow at a rapid rate in the 21st century. The service management emphasis is taught in an interdisciplinary fashion which allows students to explore several different areas within the firm. This enables students to better understand how to manage a service organization properly.

Students who choose an area in Service Management will take 21 semester hours of MBA core courses, 3 semester hours of an MBA global perspective electives, 9 semester hours in the required Services Management courses, and 3 hours of MBA 6000-level elective courses for a total of 15 combined elective hours.

Complete the following three courses:

- BUAD 6700 - Service Management **or**
- BUAD 6790 - Service Management
- MKTG 6400 - Service Marketing

- OPTM 6100 - Customer Focused Processes: Quality Management and Metrics

ACCOUNTING, MSA

The Master of Science in Accounting (MSA) is designed for those with an undergraduate degree in accounting or business who want to pursue licensure as a Certified Public Accountant (CPA).

MSA PROGRAM

All of the MSA accounting classes are offered at the UCCS campus only. It is designed for students to complete their degree as a full-time student in as little as 12 months (depending on undergraduate coursework) or as a part-time student in up to five years. Students may begin the program in the fall, spring, or summer semester.

MSA GRADUATE ADMISSION

ADMISSION CRITERIA

The Graduate School of Business Administration seeks to admit students who show a high likelihood of postgraduate accounting study.

1. Prior Academic Experience. A 4-year baccalaureate degree in accounting or business from a regionally accredited institution, including successful completion of the prerequisite courses. Successful applicants will generally have a cumulative GPA of 3.0 or higher, particularly in upper division classes and accounting coursework. Students who do not have an undergraduate background in accounting or business can still pursue careers in accounting and licensure as a CPA through the Master of Business Administration with an emphasis in accounting.
2. Admission Test. Applicants must submit scores from either the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE). The GMAT/GRE may be waived for applicants who have already earned an advanced degree in another field. Applicants who have a strong GPA (3.25+) and significant (7+ years) full-time professional work experience in business and accounting may qualify for an alternate application process. UCCS undergraduate accounting students are eligible for a GMAT waiver if the following conditions are met:
   - Graduated within the last 3 years with a BS in Business with an accounting emphasis or have senior status as a UCCS undergraduate business major with an accounting emphasis, and
   - Have a minimum 3.5 GPA within the last 60 hours of coursework

   Applicants who are admitted to the MSA program under this GMAT waiver exception cannot transfer into the MBA program. Students interested in transferring to the MBA program must apply and meet all the application requirements, including completion of the admissions test, to be considered for admission.
3. Additional MSA application materials include a student's statement of interest, resume and optional letters of recommendation. International applicants must also demonstrate English language proficiency via TOEFL or IELTS scores.

PROVISIONAL AND SENIOR ADMITS

Applicants needing one or two prerequisite courses may be admitted on a provisional basis at the discretion of the admissions committee.

APPLICATION PROCESS AND DEADLINES

The application, GMAT or GRE, one official transcript (not student copies) from each post-secondary institution attended, a resume, a statement of interest, and the nonrefundable application fee should be submitted by the priority deadlines.

See the Graduate Office website: http://www.uccs.edu/business/academics/masters-degree.html for the online application or contact the graduate program advising office by phone at 1-800-990-8227, ext. 3408, or by email at cobgrad@uccs.edu. The mailing address is as follows:

UCCS Graduate School of Business Administration
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918

MSA DEGREE REQUIREMENTS

Credit Hours
Students must successfully complete both a minimum of 30 semester hours of coursework and a comprehensive examination for the MSA degree. This coursework consists of 18 hours of accounting courses and 12 hours of other business elective courses.

MSA Prerequisite Requirements (30 hours)

- ACCT 3010 - Intermediate Accounting I
- ACCT 3020 - Intermediate Accounting II
- ACCT 3110 - Cost Accounting
- ACCT 4210 - Individual Income Tax
- ACCT 4600 - Auditing
- Plus three (3) additional hours of upper division accounting
- FNCE 3050 - Basic Finance
- INFS 3000 - Introduction to Management Information Systems
- MKTG 3000 - Principles of Marketing
- MGMT 3300 - Introduction to Management and Organization

MSA Degree Course Requirements (12 hours)

- ACCT 6010 - Seminar: Financial Accounting Theory
- ACCT 6510 - Accounting Ethics and Institutions
- ACCT 6620 - Advanced Auditing
- ACCT 6770 - Federal Tax Research and Planning

Plus two (2) of the following Accounting electives (6 credit hours):

- ACCT 6720 - Corporate and Partnership Taxation
- ACCT 6730 - Introduction to Accounting Systems
- ACCT 6740 - Accounting for Governments and Not-for-Profit Organizations
- ACCT 6750 - Advanced Financial Accounting
- ACCT 6950 - Topics in Accounting - Graduate

Required Elective Hours (12 hours) from the following:
Graduate Business Courses (see MBA program for courses)

Graduate Accounting Courses (excluding ACCT 5500/5590 and ACCT 6100/6190)
Graduate Internship in Accounting (ACCT 6960) - up to a maximum of 3 credit hours

Comprehensive Exam
All students must complete a comprehensive examination.

Accounting Notes
The MSA helps graduates develop a deep knowledge of all areas of accounting and prepare for the CPA exam. This 30 credit hour program, together with a student's undergraduate degree in business or accounting, is designed to satisfy the 150 credit hour requirement for licensure in Colorado and most other states.

As of July 1, 2015, students applying for licensure as CPAs in the State of Colorado must hold a bachelor's degree and have completed a total of at least 150 semester hours, including 27 hours of upper-division accounting. Six of these accounting semester hours must be in auditing and three of these accounting semester hours must be in accounting ethics. These total hours must also include at least 27 semester hours in upper-division business courses. Three semester hours must be in business, technical, or accounting communications. No more than nine semester hours in any single area may be used to satisfy these requirements.

The above rules/policies are state guidelines that are subject to change.

Students should understand the requirements for sitting for the CPA examination and for CPA licensure. More information about these state requirements is available at the National Association of State Boards of Accountancy website: www.nasba.org.

GRADUATE CERTIFICATES

Graduate certificates are available to students who have already completed a bachelor's degree (not necessarily in a business field) at a regionally accredited institution and have demonstrated their admissibility to the graduate certificate program. Certificates are also available to students with a graduate degree from any field. The application process will vary based on the student's academic background. Students in the graduate certificate program are subject to the same Standards of Performance as all admitted Graduate students. The only exception is that certificate students may be placed on academic probation as soon as their cumulative GPA falls below a 3.0 regardless of the amount of credit hours completed towards the certificate program. For additional information or an application for the certificate program, please contact the Graduate Office, or see: www.uccs.edu/mba.

Graduate certificates consist of 12 hours of coursework beyond any prerequisites. Certificates are offered in accounting, finance, health care administration, innovation management, international business, management, marketing, operations management, project management, and service management. Certificates are available both on-campus and online, but all certificates may not be available in both formats.

MINORS

ACCOUNTING MINOR (BUSINESS STUDENTS)

Required Courses

- ACCT 3010 - Intermediate Accounting I
- ACCT 3110 - Cost Accounting

- ACCT 4210 - Individual Income Tax

Total (9 credit hours)

ACCOUNTING MINOR (NON-BUSINESS STUDENTS)

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics

Required Accounting Courses

- ACCT 2020 - Introduction to Managerial Accounting
- ACCT 3010 - Intermediate Accounting I
- ACCT 3110 - Cost Accounting
- ACCT 4210 - Individual Income Tax

Total (21 Credit Hours)

ENTREPRENEURSHIP MINOR (BUSINESS STUDENTS)

Required Courses

- ENTP 3000 - Principles of Entrepreneurship
- ENTP 3100 - Advanced Principles of Entrepreneurship
- ENTP 4000 - The Business Plan

ENTREPRENEURSHIP MINOR (NON-BUSINESS STUDENTS)

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics
- MKTG 3000 - Principles of Marketing

Required Entrepreneurship Courses

- ENTP 3000 - Principles of Entrepreneurship
- ENTP 3100 - Advanced Principles of Entrepreneurship
- ENTP 4000 - The Business Plan

Total (21 Credits)

FINANCE MINOR (BUSINESS STUDENTS)

Required Courses

- FNCE 4000 - Advanced Corporate Finance

- FNCE 4200 - Investment and Portfolio Management
- FNCE 4500 - Money and Banking

Total (9 Credit Hours)

FINANCE MINOR (NON-BUSINESS STUDENTS)

Finance encompasses both the science and the art of managing money and investments. The study of finance provides students with an understanding of numerous financial theories such as the relation between risk and return, the factors that determine asset values, and strategies for minimizing the risk exposure of both corporations and investors. An understanding of these theories helps students develop the ability to make sound and practical business and personal investment decisions.

A finance minor for non-business students compliments degrees such as Mathematics, Economics and Engineering very well. For math students interested in actuarial sciences, a fundamental understanding of finance is a must. For economics students, this minor will round out the theoretical principles that they have already learned with direct application to the business world. For engineers, it helps because odds are that they will be managing large projects at some point, so the managing of cash flows is vitally important.

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics

Required Finance Courses

- FNCE 3050 - Basic Finance *
- FNCE 4000 - Advanced Corporate Finance
- FNCE 4200 - Investment and Portfolio Management
- FNCE 4500 - Money and Banking

*Note: FNCE 3050 requires that students must complete a statistics course prior to enrollment.

Total (21 Credit Hours)

GENERAL BUSINESS MINOR (NON-BUSINESS STUDENTS)

The General Business Minor is intended for non-business students wishing to get a taste of different aspects of the business world. Business principles are applicable across many disciplines. Everyone at some point in their life will work in a setting where a sound business decision will need to be made or will be in the position to manage others. This minor will allow you to draw on this knowledge to make a sound decision.

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics
- MKTG 3000 - Principles of Marketing
- MGMT 3300 - Introduction to Management and Organization

Choose two other business courses numbered 3000 and above.

Total (21 Credit Hours)

HUMAN RESOURCES MANAGEMENT MINOR (BUSINESS STUDENTS)

Required Courses

- HRMG 4380 - Human Resource Management
- HRMG 4390 - Legal and Social Issues in Human Resources Management

And select one of the following:

- HRMG 4340 - Labor Relations and Negotiation
- HRMG 4410 - Motivating, Rewarding, and Developing Employees
- HRMG 4850 - Directed Research Projects in Human Resources and Management

Total (9 Credit Hours)

HUMAN RESOURCES MANAGEMENT MINOR (NON-BUSINESS STUDENTS)

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics
- MGMT 3300 - Introduction to Management and Organization

Required Human Resource Management Courses

- HRMG 4380 - Human Resource Management
- HRMG 4390 - Legal and Social Issues in Human Resources Management

Choose one course from the following:

- HRMG 4340 - Labor Relations and Negotiation
- HRMG 4410 - Motivating, Rewarding, and Developing Employees
- HRMG 4850 - Directed Research Projects in Human Resources and Management

Total (21 Credit Hours)

INFORMATION SYSTEMS MINOR (BUSINESS STUDENTS)

Required Courses

- INFS 3070 - Foundations of Business Programming

  Or

- INFS 3080 - Web-based Business Programming
- INFS 3400 - Database Concepts and Applications
- INFS 3700 - Computer Networks and Telecommunications

  Or

- INFS 4100 - Systems Analysis and Design

Total (9 Credit Hours)

INFORMATION SYSTEMS MINOR (NON-BUSINESS STUDENTS)

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- INFS 1100 - Microsoft Office Applications and Computer Basics

Required Information Systems Courses

- INFS 3000 - Introduction to Management Information Systems
- INFS 3070 - Foundations of Business Programming

  Or

- INFS 3080 - Web-based Business Programming
- INFS 3400 - Database Concepts and Applications

Choose one of the following:

- INFS 3700 - Computer Networks and Telecommunications
- INFS 4100 - Systems Analysis and Design

Total (21 Credit Hours)

INTERNATIONAL BUSINESS MINOR (BUSINESS STUDENTS)

Required Courses

Choose three of the following:

- INTB 3600 - International Business
- INTB 4800 - International Management
- INTB 4610 - Regional Business Environment Europe
- FNCE 4400 - International Financial Management
- MKTG 4900 - International Marketing

Total (9 Credit Hours)

INTERNATIONAL BUSINESS MINOR (NON-BUSINESS STUDENTS)

Core Business Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics

Junior Core Business Courses
Choose one from the following:
- FNCE 3050 - Basic Finance
- MGMT 3300 - Introduction to Management and Organization
- MKTG 3000 - Principles of Marketing

International Business Courses
- INTB 3600 - International Business

Choose two from the following:
- FNCE 4400 - International Financial Management
- HRMG 4850 - Directed Research Projects in Human Resources and Management
- INTB 4610 - Regional Business Environment Europe
- INTB 4800 - International Management
- MGMT 3900 - Improving Personal and Team Creativity
- MKTG 4900 - International Marketing

Total (21 Credit Hours)

MANAGEMENT MINOR (BUSINESS STUDENTS)

Required Courses
- MGMT 4110 - Experiences in Leadership
- MGMT 4370 - Organizational Development and Change

Choose one:
- MGMT 3900 - Improving Personal and Team Creativity
- MGMT 4500 - Principles of Negotiation and Conflict Management

Total (9 Credit Hours)

MANAGEMENT MINOR (NON-BUSINESS STUDENTS)

Business Core Courses
- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics

Management Courses
Required:
- MGMT 3300 - Introduction to Management and Organization
- MGMT 4110 - Experiences in Leadership
- MGMT 4370 - Organizational Development and Change

And choose one of the following:
- MGMT 3900 - Improving Personal and Team Creativity

OR

- MGMT 4500 - Principles of Negotiation and Conflict Management

Total (21 Credit Hours)

MARKETING MINOR (BUSINESS STUDENTS)

Required Courses

- Any three 3000/4000 Level MKTG courses, above MKTG 3000.

Total (9 Credit Hours)

MARKETING MINOR (NON-BUSINESS STUDENTS)

Business Core Courses

- ACCT 2010 - Introduction to Financial Accounting
- BUAD 1000 - Introduction to Business
- ECON 1010 - Introduction to Microeconomics

Required Marketing Courses

- MKTG 3000 - Principles of Marketing

Choose 3 from the following list:

- MKTG 3300 - Marketing Research
- MKTG 3400 - Personal Selling and Sales Management
- MKTG 3550 - Brand Management
- MKTG 4400 - Service Management and Marketing
- MKTG 4500 - Retailing Strategy
- MKTG 4510 - Sport Marketing
- MKTG 4550 - Contemporary Issues in Marketing
- MKTG 4600 - Business to Business Marketing
- MKTG 4650 - Promotion Management and Strategy
- MKTG 4700 - Digital and Social Media Marketing
- MKTG 4800 - Marketing Planning and Strategies
- MKTG 4900 - International Marketing

Total (21 Credit Hours)

SERVICE MANAGEMENT MINOR (BUSINESS STUDENTS)

The Service Management area of emphasis is designed to provide skills and knowledge for those who will work in a management or professional capacity in the service sector, including customer service departments, call centers, help desks, insurance, and other professional service organizations (e.g. law, accounting).

Required Courses

- MKTG 4400 - Service Management and Marketing

- HRMG 4380 - Human Resource Management
- OPTM 4100 - Managing Service Operations

Total (9 Credit Hours)

BUSINESS PROGRAMS OF STUDY

Areas of Emphasis	Bachelor of Science (BS-four years) Bachelor of Innovation (BI-four years)	Options for Minor Studies	Graduate Certificate Programs	Master of Business Administration (MBA) (MBA online)	Master of Science
Accounting	BS, BI	Business majors; non-business majors	Certificate	MBA	MS
Business Administration	BS, BI		Certificate		
Finance	BS, BI	Business majors; non-business majors	Certificate	MBA, MBA (online)	
General Business	BS	Non-business majors		MBA, MBA (online)	
Health Care Administration			Certificate	MBA (online)	
Human Resources Management	BS, BI	Business majors; non-business majors			
Information Systems	BS, BI	Business majors; non-business majors			
Innovation Management			Certificate	MBA, MBA (online)	
International Business	BS, BI	Business majors; non-business majors	Certificate	MBA, MBA (online)	
Management	BS, BI	Business majors; non-business majors	Certificate	MBA, MBA (online)	
Marketing	BS, BI	Business majors; non-business majors	Certificate	MBA, MBA (online)	

Operations Management			Certificate	MBA	
PGA Golf Management option	BS				
Project Management			Certificate	MBA (online)	
Service Management	BS, BI	Business majors	Certificate	MBA	
Sports Management	BS				

College of Education

GENERAL INFORMATION

COE Student Resource Office
Columbine Hall, Room 3010
Phone: (719) 255-4996
Fax: (719) 255-4110
Email: education@uccs.edu
www.uccs.edu/coe/student-resource-office.html

The College of Education (COE) prepares teachers, leaders, and counselors to work in local, regional, national, and international settings. The college is comprised of hallmark programs that are grounded in research, evidence-based practice, equity, and social justice. Through these programs, the College of Education's students are well prepared to serve as effective practitioners in classroom, administrative, and human service environments.

We believe that our professional preparation programs are based on best practices, pursuing excellence in teaching leadership and counseling. Students and faculty honor the diverse needs, cultures, ideas, and perspectives present within a democratic society and adhere to culturally responsive practices in teaching, leadership, and research. The College is committed to preparing graduates who will be advocates for social change and adapt to the ever changing needs of our globally-connected, technology-infused world. Finally, the College prides itself on developing and maintaining positive, productive relationships with local school districts and community agencies through various partnerships and collaborative endeavors.

MISSION

We prepare teachers, leaders, and counselors who embrace equity, inquiry and innovation.

VISION

We endeavor to be the foremost regional College of Education, fostering a just and inclusive global society.

ACCREDITATION

The College of Education's professional programs are accredited by the North Central Association of College and Secondary Schools, the National Council for the Accreditation of Teacher Education (NCATE), the Council for Accreditation of Counseling and Related Educational Programs (CACREP), the Colorado Department of Education (CDE) and the Colorado Department on Higher Education (CDHE).

FACULTY

Visit the College of Education website to preview the most up-to-date information about our faculty: http://www.uccs.edu/coe/people/faculty.html

ADMISSIONS INFORMATION

Undergraduate and Graduate Students
Contact the COE Student Resource Office at (719) 255-4996 or education@uccs.edu.

For current admission information on specific programs, visit the College of Education website.

ACADEMIC ADVISING

Undergraduate Students
Academic Advising, Main Hall 208
Contacts:
Bill Bannister bbanist@uccs.edu, (719) 255-3069
Ruth Sansing rsansing@uccs.edu, (719) 255-3747
Carol Daley cdaley2@uccs.edu, (719) 255-3473

Graduate Students
Contact our Student Resource Office to schedule an appointment with your advisor:

COE Student Resource Office
Columbine Hall, Room 3010
Phone: (719) 255-4996
Fax: (719) 255-4110
Email: education@uccs.edu
www.uccs.edu/coe/student-resource-office.html

PROGRAMS OF STUDY

COUNSELING AND HUMAN SERVICES

The Department of Counseling and Human Services offers post-graduate, graduate, endorsement, and undergraduate programs.

- School Counseling - Master of Arts, Preparation for licensure, CACREP Accredited
- Clinical Mental Health - Master of Arts, Preparation for licensure, CACREP Accredited
- Counseling and Leadership - Master of Arts, Joint program with the United States Air Force Academy, Closed selection process
- Addictions Emphasis
- Human Services - Undergraduate minor

EDUCATIONAL LEADERSHIP, RESEARCH, AND FOUNDATIONS

The Department of Educational Leadership, Research, and Foundations offers graduate degrees and endorsement programs.

- Leadership, Research and Policy - Doctor of Philosophy (PhD)
- Educational Leadership with Concentrations in P-12, Principal Education Licensure, or Student Affairs in Higher Education, - Master of Arts (MA)
- Endorsement: Principal Licensure (CDE Principal Preparation)
- Endorsement: Administrator Licensure (CDE Superintendent Preparation)

TEACHING AND LEARNING

The Department of Teaching and Learning offers graduate and undergraduate degree programs as well as teacher licensure, endorsement, and certificate programs.

Degree programs offered:

- Curriculum and Instruction - Master of Arts (MA)
- Curriculum and Instruction: Literacy - Master of Arts (MA)
- Inclusive Elementary Education, BA
- Inclusive Early Childhood Education - Bachelor of Innovation (BI)
- Science Education - Master of Arts (MA)
- Space Studies and Science Teaching - Master of Arts (MA)
- Space Studies and Science Teaching - Master of Science (MSc)
- Science Teaching - Master of Science (MSc)
- Special Education - Master of Arts (MA)
- Teachers of English to Speakers of Other Languages (TESOL) - Master of Arts (MA)

Licensures and Endorsement offered:

- Alternative Licensure Program (ALP) - Post Baccalaureate (Subject areas: English, Spanish, Mathematics, Science, Social Science), Licensure only
- Teacher Education Licensure Program (TELP) - Post Baccalaureate and Undergraduate (Subject areas: English, Spanish, Social Studies, Elementary Education), Licensure only
- UCCSTeach - Post Baccalaureate and Undergraduate (Subject areas: Mathematics and Science), and
- Licensure only
- Gifted and Talented Specialist - Licensure only
- Teaching English as a Second/Foreign Language (TESL/TEFL) - Licensure only
- Instructional Technology (IT) - Certificate only
- Undergraduate Licensure in Special Education
- Initial License in Special Education with/or without a Master of Arts
- Added Endorsement in Special Education with/or without a Master of Arts

COLLEGE OF EDUCATION GENERAL ACADEMIC POLICIES

Specific academic polices related to each department may be found on the department webpage or obtained through the designated chair of each department. For additional Undergraduate Program Policies, please refer to the Academic Policies, Registration, and Records section of this Catalog; for additional Graduate Program Policies, please refer to the Graduate School section of this Catalog.

CHANGES OF PROGRAM REQUIREMENTS

Program requirements may change without notification due to changes in licensure standards or state statutes.

GRADUATION REQUIREMENTS

The Catalog that governs a student's graduation requirements is the one in effect at the time of a student's most recent admission into the college of the student's degree program.

GRADUATION PROCEDURES

Graduate Students
Please contact the COE Faculty Liaison at the beginning of the last semester of your degree program to complete the Application for Admission to Candidacy for an Advanced Degree paperwork. This form must be completed in its entirety and submitted by the announced deadline. Additionally, students are required to complete a diploma card application through their student port. Failure to submit required graduation materials by the university established deadline may result in delay of graduation.

Graduation forms and diploma card instructions can be downloaded at:
http://www.uccs.edu/graduateschool/current-students.html

Completed graduation forms and general inquiries can be submitted to coegrad@uccs.edu.

Undergraduate Students
Please contact your advisor in Academic Advising early in the last semester of your degree program to complete the required graduation paperwork. Failure to submit required graduation materials by the university established deadline may result in delay of graduation.

TRANSFER CREDIT

Graduate Students
All work accepted by transfer must come and be transferred into the university within a six-year time limit. All transfer coursework must have been taken at a regionally accredited institution (four-year institution to transfer to graduate program, two- or four-year institution to transfer to undergraduate program) and have been awarded a letter grade. College work more than seven years old may not count or may require validating or updating.

Credits transferred from other institutions to the University of Colorado will be limited to the type and amount of credit given for similar work at the University of Colorado. Coursework completed at another CU campus will most likely transfer.

Work already applied toward a Master's degree received at another institution cannot be accepted for transfer toward a Master's degree at the University of Colorado; extension work completed at another institution cannot be transferred; and correspondence work, except to make up deficiencies, is not recognized.

Credit will not be transferred until the student has established a satisfactory academic record of at least one semester in residence. To be eligible for courses to be considered for transfer, a student must have an overall B average in all courses taken at the University of Colorado in Graduate School. Students are then encouraged to meet with their advisor or department chairperson to ensure that approved credits are transferred to UCCS.

Transferred credit will not reduce the residency requirement at this University, but it may reduce the amount of work to be completed in formal courses.

Excess undergraduate credits from another institution may not be transferred to the Graduate School.

Transfer Students
Transfer students will work closely with their advisor in Academic Advising and the Office of Degree Audit and Transfer Credit to determine which courses will transfer to the University. Department chairpersons and faculty representatives will also provide assistance for this process.

Seniors at UCCS
Seniors at this University may transfer a limited amount of advanced resident work (up to 9 hours) to a graduate program provided such work:

- Is completed with distinction in the senior year at this University
- Occurs within the six-year time limit
- Has not been applied toward another degree
- Is recommended for transfer by the department concerned and is approved by the Dean of the Graduate School.

Acceptance of Graduate Credits
A COE Department may recommend to the Graduate School Dean the acceptance of graduate transfer credit.

Nine (9) credits may be transferred from another institution and applied toward a graduate degree at UCCS. A grade of "B" or better is required. All work accepted for transfer must have been completed within the six-year time limit (Master's degree) or seven year time limit (Doctorate), or be validated and approved by program faculty through a course validation process.

Twelve (12) credits may be transferred from within the university for unclassified students. A grade of "B" or better is required. All work accepted for transfer must have been completed within the six-year or seven-year time limit mentioned above, or be validated and approved by program faculty through a course validation process.

COLLEGE OF EDUCATION ADMISSION REQUIREMENTS

Prospective graduate and undergraduate students should contact education@uccs.edu to discuss specific admissions guidelines for each department and program.

GENERAL GRADUATE ADMISSIONS GUIDELINES

1. Complete online application: http://www.uccs.edu/~apply/
2. Complete required standardized test (Counseling and Leadership programs only).
3. Obtain three letters of reference.
4. Submit transcripts from all institutions of higher education previously attended. Students who attended UCCS do not have to request official transcripts for admission.
5. Students should have a 2.75 undergraduate GPA or 3.0 graduate GPA or above.
6. Submit a Career Goal Statement - please see the department specific guidelines.
7. Submit a current resume.
8. Complete a background check (Colorado Bureau of Investigation - Instant Background Check).
9. Complete an admissions interview.

GENERAL UNDERGRADUATE ADMISSIONS GUIDELINES

1. Complete online application: http://www.uccs.edu/~apply/.

2. Submit a high school transcript or GED certificate.
3. Submit ACT or SAT test scores (unless a transfer student from another college with over 12 hours of transferable credit).
4. All transcripts from previously attended colleges and universities.

ADMISSION TO TEACHER LICENSURE PROGRAMS

All students who wish to enroll in initial teacher education licensure programs (TELP, SELP, UCCSTeach) must be admitted to UCCS and complete a second admissions process for the respective program. Please contact the Student Resource Office at (719) 255-4996 or education@uccs.edu for specific details.

COUNSELING AND HUMAN SERVICES

The Counseling and Human Services department offers an accredited counseling program that focuses on quality counselor training in Clinical Mental Health and School Counseling. This program is accredited by the Council for Accreditations of Counseling & Related Educational Programs (CACREP). Additionally, we provide advanced training for current school and mental health counselors who are in need of professional development for their respective licenses.

MISSION

The mission of the Department of Counseling and Human Services is to provide excellence in professional preparation of graduate students in school and clinical mental health counseling. Experienced faculty delivers high quality, experiential, professional education that leads to transformational change among students, clients, and institutions. Using a reflective, ethical, developmental, and systemic lens, students develop counseling knowledge, skills, and personal characteristics to become effective facilitators of change and social justice among diverse clientele.

PHILOSOPHY

The philosophy behind our training programs emphasizes that counselors assist clients and students with life challenges through dynamic, holistic, developmentally appropriate, strength-based interventions which emphasize the creation of healthy coping skills and wellness.

Further, through various interventions, counselors seek to prevent problems before they are created by helping clients and students foster effective communication, problem solving and conflict resolutions skills, as well as healthy and adaptive behavioral patterns.

Commitment to Personal Growth
The faculty members within the Department of Counseling and Human Services (DCHS) recognize the importance of human growth and personal development for all people throughout the life span. This includes counselors-in-training. The personality of the counselor and capacity to effectively relate to and "join" with others in the counseling alliance are instrumental in delivering effective counseling interventions. Therefore, the curriculum for programs includes significant experiential coursework designed to enhance the self-awareness, adaptability, and continuing personal growth of each student in the counseling program. Applicants to our program must be committed to their own personal growth as well as their professional and academic development.

FACULTY

- *Professor:* David Fenell

- *Associate Professors:* Julaine Field, Joseph Wehrman (Chair), and Rhonda Williams
- *Assistant Professor:* Leann Morgan
- *Senior Instructors:* Mari McGuiness and James Saunders
- *Instructor:* Bita Rivas

COUNSELING AND HUMAN SERVICES PROGRAMS OF STUDY

- Counseling and Human Services, MA

  School Counseling Emphasis
  Clinical Mental Health Counseling Emphasis
  Addictions Emphasis

- Counseling and Human Services Minor

COUNSELING AND HUMAN SERVICES, MA

If you are looking for an accredited counseling program which focuses on quality counselor training in Clinical Mental Health and School Counseling, our department may be an appropriate fit for your graduate education! This program is accredited by the Council for Accreditations of Counseling & Related Educational Programs (CACREP).

Additionally, we provide advanced training for current school and mental health counselors who are in need of professional development for their respective licenses. A Counseling and Human Services Minor is also available.

ACCREDITATIONS

The school counseling track is accredited by:

- National Council for the Accreditation of Teacher Education (NCATE)
- Colorado Department of Education (CDE)

Both School and Clinical Mental Health tracks are nationally accredited by the Council for Accreditation of Counseling and Related Education Programs (CACREP).

FACULTY

- Joe Wehrman, Ph.D., Department Chair, Associate Professor
- Rhonda Williams, Ed.D, Associate Professor, Coordinator of the School Counseling Track
- David Fenell, Ph.D., Professor
- Julaine Field, Ph.D., Associate Professor, Coordinator of the Clinical Mental Health Track
- Mari McGuiness, Ph.D., Senior Instructor, Coordinator of the Human Services Minor
- Leann Morgan, Ph.D., Assistant Professor
- Bita Rivas, Ed.D. LPC, Instructor, Faculty Advisor CSI
- James Saunders, Ed.D., Senior Instructor, Coordinator of AOC Track

Admission and Application Process
Visit our website for information.

PROGRAMS OFFERED

- Master of Arts: Counseling and Human Services with an emphasis in School Counseling
- Masters of Arts: Counseling and Human Services with an emphasis in Clinical Mental Health Counseling
- Master of Arts: Counseling and Leadership (Air Force Officer Command)
- Addictions Emphasis

MA in Counseling and Human Services - School Counseling

The Department of Counseling and Human Services offers the Master's degree in Counseling and Human Services with an emphasis in School Counseling. The School Counselor training program meets the licensure requirements of the Colorado Department of Education (CDE) and is accredited by the Council for Accreditation of Counseling and Related Education Programs (CACREP) based on national standards for the preparation of school counselors. In accordance with these standards, the school counselor program requires the completion of sixty semester hours of appropriate academic credit. School Counselor students will complete the same foundational coursework as the Clinical Mental Health Counselor students and may be eligible for licensure as a Colorado Licensed Professional Counselor (LPC).

Post-master's degree supervised counseling experience and successful completion of the National Counselor Examination (NCE) is currently required for the LPC credential. It is strongly recommended by the Departmental faculty members that school counselors seeking the LPC credential take additional coursework in psychopathology, diagnosis and clinical mental health counseling and complete a supervised field experience specific to clinical mental health. Students graduating from the School Counselor program will be immediately eligible to apply for National Certified Counselor (NCC) recognition and are encouraged to do so.

School counselors in Colorado are licensed Professional Special Services personnel who work in school settings with students, parents, educators, and others within the community. They may be licensed as Elementary School Counselors, Secondary School Counselors or K-12 School Counselors. School counselors design and manage comprehensive, developmental guidance programs to help students acquire skills in the social, personal, academic, and career domains necessary for living in a diverse society. School counselors accomplish this by employing interventions including guiding and counseling students individually or in small groups and by providing psychoeducation through classroom guidance. School counselors contribute to the development of effective learning environments through student advocacy, facilitating systemic change, and through consultation and collaboration with others. Teaching experience is not a requirement for the Colorado school counselor license.

Application and Admissions Requirements
Please visit our website for admissions information.

Core Courses - 18 Credit Hours

- COUN 5010 - Theories and Techniques of Individual Counseling
- COUN 5020 - Laboratory in Individual Counseling
- COUN 5100 - Theories and Techniques of Group Counseling
- COUN 5110 - Laboratory in Group Counseling
- COUN 5130 - Theories and Techniques of Marriage, Couples, and Family Counseling
- COUN 5300 - Laboratory in Marriage and Family Counseling

Foundations in Professional Counseling - 27 Credit Hours

- COUN 5040 - Human Growth and Development

- COUN 5330 - Issues, Ethics and Trends in Professional Counseling
- COUN 5410 - Measurement and Appraisal
- COUN 5430 - Career Development
- COUN 5550 - Practice of Crisis Counseling, Trauma, and Disaster Work
- COUN 5860 - Social and Cultural Foundation of Professional Counseling
- COUN 5510 - Principles of Addiction Treatment *
- COUN 5520 - Infectious Diseases in Addiction Treatment *
- LEAD 5700 - Introduction to Research and Statistics
- Electives (See elective list)

* COUN 5510 & COUN 5520 NEED TO BE TAKEN CONCURRENTLY.

The School Counselor in the School System - 15 Credit Hours

- COUN 5120 - Practicum in Professional Counseling
- COUN 5700 - Internship in School Counseling
- COUN 5800 - Roles and Functions of the School Counselor
- COUN 5810 - Organization/Administration of the School Counseling Program

Electives - Optional 3 Credit Hours

As the Department transitions to a 60 semester hour program, students will be offered an array of elective courses. These courses may be selected to complement the student's required coursework and/or professional career objectives. Students will select two electives if they desire to graduate with a 60 semester hour master's degree.

- COUN 5070 - Adventure Education and Experiential Learning
- COUN 5090 - Spiritual Dimensions of Counseling
- COUN 5440 - Advanced Psychopathology and Diagnosis
- COUN 5530 - Theory and Techniques of Motivational Interviewing ** (2 credit hours)
- COUN 5950 - Roles and Functions of the Clinical Mental Health Counselor *
- COUN 5960 - Psychopharmacology *
- COUN 5570 - Play Therapy and Child Counseling
- COUN 5580 - Sexuality in Counseling
- COUN 5970 - Advanced Pharmacology ** (1 credit hour)

*COUN 5950 AND COUN 5960 NEED TO BE TAKEN CONCURRENTLY.
**COUN 5530 AND COUN 5970 NEED TO BE TAKEN CONCURRENTLY.

MA in Counseling and Human Services - Clinical Mental Health Counseling

The Clinical Mental Health Counseling (CMHC) emphasis within the Department of Counseling and Human Services is designed to prepare graduate students to assume positions in professional counseling and consultation services involving the principles of psychotherapy. Students will be prepared in the areas of human development, learning theory, lifelong wellness, group dynamics, systems theory and the etiology, diagnosis and treatment of developmental problems, dysfunctional behavior and mental illness. Students will also learn how to advocate for clients and teach clients to advocate for themselves. They will be prepared to provide professional services to individuals, couples, families and groups for the purposes of preventing and treating developmental problems and psychopathology and promoting optimal mental health and wellness. Promotion and enhancement of healthy, self-actualizing, and satisfying lifestyles is the goal of clinical mental health counseling, whether the services are rendered in an educational, military, business, industrial, health, medical, private practice or human services setting.

The Clinical Mental Health Counselor (CMHC) training program is accredited by the Council for Accreditation of Counseling and Related Education Programs (CACREP). The CMHC program is based on CACREP training standards and is designed to meet the academic requirements for licensure as a professional counselor (LPC) in Colorado to practice psychotherapy. In addition to completing the Master's Degree, applicants for the Professional Counselor License must complete appropriate post-master's degree supervised experiences and pass a written examination.

Students must complete a rigorous 60 semester-hour training program that has been developed by the departmental faculty to prepare Clinical Mental Health Counselors for the responsibility of professional practice. Students who wish to pursue a concentration in Addictions Counseling to become a CAC II in Colorado may select this academic pathway through a partnership with the Department of Behavioral Health (DBH).

Students graduating from the CMHC degree program will be eligible to take the National Counselor Exam on campus during their last semester in the program. The student may submit the score from this examination as partial fulfillment of the requirements for the Licensed Professional Counselor (LPC) credential in Colorado. Other requirements, including appropriate post-master's supervised clinical experience, must be met prior to being eligible to be licensed. Additionally, graduates of the program will be immediately eligible, and are encouraged to apply for National Certified Counselor (NCC) recognition. Students who wish to earn the CAC II credential must take the required coursework, pass the Examination for Master Addictions Counselors (EMAC) and complete the required clinical hours. It is possible to achieve CAC II status within a year after graduation.

Application and Admissions Requirements
Please visit our website for admissions information.

Core Courses - 18 Credit Hours

- COUN 5010 - Theories and Techniques of Individual Counseling
- COUN 5020 - Laboratory in Individual Counseling
- COUN 5100 - Theories and Techniques of Group Counseling
- COUN 5110 - Laboratory in Group Counseling
- COUN 5130 - Theories and Techniques of Marriage, Couples, and Family Counseling
- COUN 5300 - Laboratory in Marriage and Family Counseling

Foundations in Professional Counseling - 27 Credit Hours

- COUN 5040 - Human Growth and Development
- COUN 5330 - Issues, Ethics and Trends in Professional Counseling
- COUN 5410 - Measurement and Appraisal
- COUN 5430 - Career Development
- COUN 5510 - Principles of Addiction Treatment * (2 credit hours)
- COUN 5520 - Infectious Diseases in Addiction Treatment * (1 credit hour)
- COUN 5550 - Practice of Crisis Counseling, Trauma, and Disaster Work
- COUN 5860 - Social and Cultural Foundation of Professional Counseling
- LEAD 5700 - Introduction to Research and Statistics
- Elective - (See elective list)

*COUN 5510 AND COUN 5520 NEED TO BE TAKEN CONCURRENTLY.

The Mental Health Counselor within the Community System - 15 Credit Hours

- COUN 5120 - Practicum in Professional Counseling

- COUN 5440 - Advanced Psychopathology and Diagnosis
- COUN 5720 - Internship in Clinical Mental Health Counseling (2 semesters)
- COUN 5950 - Roles and Functions of the Clinical Mental Health Counselor * (2 credit hours)
- COUN 5960 - Psychopharmacology * (1 credit hour)

* COUN 5950 AND COUN 5960 NEED TO BE TAKEN CONCURRENTLY.

Electives - Optional 3 Credit Hours
As the Department transitions to a sixty semester hour program, students will be offered an array of elective courses. These courses may be selected to compliment the student's required coursework and/or professional career objectives. Students will select two electives if they desire to graduate with a 60 semester hour master's degree.

- COUN 5070 - Adventure Education and Experiential Learning
- COUN 5090 - Spiritual Dimensions of Counseling
- COUN 5530 - Theory and Techniques of Motivational Interviewing * (2 credit hours)
- COUN 5800 - Roles and Functions of the School Counselor
- COUN 5810 - Organization/Administration of the School Counseling Program
- COUN 5570 - Play Therapy and Child Counseling
- COUN 5580 - Sexuality in Counseling
- COUN 5970 - Advanced Pharmacology * (1 credit hour)

* COUN 5530 AND COUN 5970 NEED TO BE TAKEN CONCURRENTLY.

MA in Counseling and Human Services - Counseling and Leadership

The Counseling and Leadership master's degree program is a one-year, comprehensive curriculum for developing selected United States Air Force majors for the important responsibility of air officer commanding or leading a cadet squadron at the U.S. Air Force Academy. This training program was piloted in 1999, formalized in 2003 and is a sustained collaboration between the Department of Counseling and Human Services and the United States Air Force Academy. It is an inclusive program in that it includes a 45 credit-hour graduate curriculum, fieldwork, ongoing and topical colloquia, and personal and professional assessments designed to support counseling and leadership development. This degree program facilitates critical thinking, enhances interpersonal effectiveness, broadens perspectives on coaching and mentoring, develops influencing skills, and improves the student's ability to lead change and development among cadets.

The job description of an AOC, from COCI 36-3522, requires officers to be competent in mentoring, capable of leading, teaching, and evaluating cadets through all aspects of cadet and military life, able to enforce standards, demonstrate nearly impeccable role modeling, competent in guiding the squadron's leadership team, and skilled in counseling cadets, individually and as a group. Students are tapped by the United States Air Force for admission to this select program. Once enrolled, this one-year program features training with faculty from both the Department of Counseling and Human Services (UCCS) and the Department of Behavioral Sciences and Leadership (USAFA).

Application and Admissions Requirements
Please visit our website for admissions information.

Course Requirements: Counseling and Leadership
Please know that space is limited in each course and students should register early for elective courses.

Course Designations:

*CACREP aligned course
** Leadership Sequence
*** Specialty course

+ Students must take 6 credits of Fieldwork. Students will register for 1-3 credits per fieldwork section. Students should consider taking 1 credit of Fieldwork during the semester that they take the elective.

++ Students will select the semester and course to complete the elective requirement. It is recommended that students consider courses from the list above; however, students are also able to independently identify a graduate level course from the UCCS catalog, (1) complete the Elective List Waiver Form, (2) have it approved by USAFA designee and (3) the Chairperson of the Department of Counseling and Human Services.

Summer Courses - 14 Credit Hours

- COUN 5010 - Theories and Techniques of Individual Counseling *
- COUN 5020 - Laboratory in Individual Counseling *
- COUN 5210 - Characteristics of the Effective Leader **
- LEAD 5700 - Introduction to Research and Statistics *
- COUN 5160 - Field Work in Counseling and Leadership (100 contact hrs.)

Elective:

- COUN 5550 - Practice of Crisis Counseling, Trauma, and Disaster Work ++

Fall Courses - 14 Credit Hours

- COUN 5100 - Theories and Techniques of Group Counseling *
- COUN 5110 - Laboratory in Group Counseling *
- COUN 5330 - Issues, Ethics and Trends in Professional Counseling *
- COUN 5250 - Leader and Leadership Development **
- COUN 5160 - Field Work in Counseling and Leadership (150 contact hrs.) (2 credit hours)

Electives:

- COUN 5510 - Principles of Addiction Treatment ^
- COUN 5520 - Infectious Diseases in Addiction Treatment ^
- COUN 5580 - Sexuality in Counseling ++
- COUN 5440 - Advanced Psychopathology and Diagnosis ++

^ COUN 5510 AND COUN 5520 NEED TO BE TAKEN CONCURRENTLY.

Spring Courses - 14 Credit Hours

- COUN 5290 - College Student Development ***
- COUN 5600 - Leading Diversity **
- COUN 5280 - Teams and Organizational Leadership **
- COUN 5270 - Advanced Techniques in Cadet Counseling ***
- COUN 5160 - Field Work in Counseling and Leadership (150 contact hrs.) (2 credit hours)

Electives:

- COUN 5430 - Career Development ++
- COUN 5130 - Theories and Techniques of Marriage, Couples, and Family Counseling ++
- COUN 5070 - Adventure Education and Experiential Learning ++
- COUN 5530 - Theory and Techniques of Motivational Interviewing ^ (2 credit hours)
- COUN 5970 - Advanced Pharmacology ^ (1 credit hour)

^ COUN 5530 AND COUN 5970 NEED TO BE TAKEN CONCURRENTLY.

Additional Electives
In addition to the electives listed above, students may elect to add or substitute the following Public Administration courses.

- PAD 5260 - Managing in a Multicultural Society
- PAD 5271 - Managing Conflict and Change

Please check the UCCS course bulletin for scheduling information, as these courses are offered online and on campus. Please note that the Department of Counseling and Human Services does not schedule nor teach these courses. However, both have been identified as complements to the Counseling and Leadership curriculum.

For more information, contact the School of Public Affairs at spa@uccs.edu or 719-255-4182.

Addictions Emphasis

The Department of Counseling and Human Services within the College of Education at UCCS has established a 15 credit hour emphasis that offers students who have been accepted into the Master of Arts in Counseling and Human Services program the opportunity to seek certification as a Certified Addictions Counselor (CAC II). The university curriculum is designed to meet the standards set forth by the Office of Behavioral Health (OBH) including hours of in-class study, additional homework and laboratory assignments. Students may complete the Master of Arts in Counseling and Human Services and the addictions emphasis simultaneously. UCCS offers the only Masters of Arts degree program in the state of Colorado that embeds the competencies to meet CAC II credentialing.

Application and Admissions Requirements
Please visit our website for admissions information.

Core Courses - 15 Credit Hours

- COUN 5100 - Theories and Techniques of Group Counseling
- COUN 5330 - Issues, Ethics and Trends in Professional Counseling
- COUN 5510 - Principles of Addiction Treatment
- COUN 5520 - Infectious Diseases in Addiction Treatment
- COUN 5530 - Theory and Techniques of Motivational Interviewing
- COUN 5950 - Roles and Functions of the Clinical Mental Health Counselor
- COUN 5960 - Psychopharmacology
- COUN 5970 - Advanced Pharmacology

Advanced Certificate: Counseling and Human Services

The Department of Counseling and Human Services offers a 24 credit-hour, advanced, post master's certificate for current school or clinical mental health practitioners. Licensed Professional Counselors (LPC) are required to complete 20 continuing education hours per licensing cycle and school counselors who are on a graduate pay scale may use this coursework toward these requirements. Additionally, the four core courses (12 credits) align with current CACREP requirements for CACREP-accredited doctoral programs. Students may take between one to three courses per semester.

School Counselor - Endorsement Only

Students who have earned a CACREP-accredited master's degree in Clinical Mental Health Counseling may be eligible to take five courses to complete the academic requirements for endorsement as a School Counselor in Colorado. An interview, transcript review, and specific steps for admission are required.

COUNSELING AND HUMAN SERVICES MINOR

Human services is one of the fastest growing fields in the country. The Human Services minor at the University of Colorado Colorado Springs emphasizes personal growth, theory-based practices, and experiential learning through fieldwork placement. The Human Services minor provides both the academic and experiential background for the student seeking a career working with diverse populations in the varied and expanding field of Human Services.

Please visit our website for admissions information.

Core Courses (18 Credit Hours)

- COUN 2000 - Introduction to Human Services
- COUN 3000 - Intracultural Socialization Patterns
- COUN 3110 - Interpersonal Communication, Interviewing and Mediation Skills
- COUN 3400 - Ethics, Values and Case Management
- COUN 3500 - Group Dynamics and Group Process
- COUN 4950 - Practicum in Human Services

Electives (6 Credit Hours)

- COUN 3100 - Career Planning
- COUN 4000 - Introduction to the Counseling Profession
- COUN 4070 - Adventure Education and Experiential Learning
- COUN 4500 - Wellness, Resilience and Emotional Intelligence

EDUCATIONAL LEADERSHIP, RESEARCH, AND FOUNDATIONS

FACULTY

- *Professors:* Dick Carpenter and Al Ramirez
- *Assistant Professors:* Andrea Bingham, Sylvia Mendez (Chair), Margaret Scott, and Marcus Winters
- *Senior Instructor:* Dallas Strawn
- *Instructors:* Tacy Killingsworth and Patricia Witkowsky

PROGRAMS OF STUDY

- Leadership, Research, and Policy, PhD
- Educational Leadership, MA

LEADERSHIP, RESEARCH, AND POLICY, PHD

This program is designed to meet the personal and professional needs of educational leaders in school districts, higher education and non-governmental organizations through rigorous courses in leadership, research and policy. This innovative program combines challenging coursework with collaborative faculty and student participation in research labs that prepare students for successful completion of the dissertation and professional application of skills and knowledge.

The three-year program for working professionals prepares graduates to:

- Engage in scholarly inquiry and culturally responsive practice
- Synthesize diverse research perspectives in facilitating educational excellence
- Lead others in continuous improvement through implementation and evaluation
- Communicate successfully through oral and written professional discourse

FACULTY

- Sylvia Mendez, Ph.D., Department Chair, and Associate Professor with Tenure
- Andrea Bingham, Ph.D, Assistant Professor
- Dick Carpenter, Ph.D., Professor
- Tacy Killingsworth, M.A., Instructor
- Al Ramirez, Ed.D., Professor
- Margaret Scott, Ed.D., Assistant Professor
- Dallas Strawn, Ph.D., Senior Instructor
- Marcus Winters, Ph.D., Assistant Professor
- Patricia Witkowsky, Ph.D., Instructor, SAHE Program Coordinator

Application and Admissions Requirements
Please visit our website for admissions information.

Leadership and Policy Content (21 Credit Hours)

- LEAD 7300 - Ethical Leadership and Democratic Values in a Multicultural Society
- LEAD 7350 - Leadership, Power, and Authority in Educational Policy and Governance
- LEAD 8200 - Large-Scale Student Assessment
- LEAD 8250 - Policy Analysis and Evaluation
- LEAD 8300 - Leadership Excellence in Complex Organizations
- LEAD 8350 - The Economics of Education
- LEAD 8600 - American and Comparative Foundations of Education

Research Content (57 Credit Hours)

- LEAD 7100 - Intermediate Quantitative Research and Statistics
- LEAD 7150 - Methods of Qualitative Research
- LEAD 7600 - Doctoral Research Laboratory in Leadership
- LEAD 8100 - Advanced Quantitative Research and Statistics
- LEAD 8150 - Applications of Qualitative Research
- LEAD 8990 - Doctoral Dissertation

Dissertation Credits
Candidates must be enrolled for 3 credits of Doctoral Dissertation each semester of doctoral coursework. Candidates must be continuously enrolled in a minimum of 1 credit hour of dissertation credit per semester during completion of the dissertation. Five credits of dissertation credit must be taken during the semester of the oral defense. No more than 10 dissertation credits can be taken in any one semester. A total of 30 credits of Doctoral Dissertation must be earned to complete degree requirements.

See our Ph.D. Student Handbook for detailed information on dissertation guidelines.

EDUCATIONAL LEADERSHIP, MA

The department of Educational Leadership, Research, and Foundations offers the Master of Arts degree in Educational Leadership. The program is accredited by the Colorado Department of Education (CDE), the National Council for Accreditation of Teacher Education (NCATE) and the Educational Leadership Constituency Council (ELCC). Through this program students will be in partnership with a faculty of outstanding professionals who are also leaders in the field of education. They have been selected because of their commitment to excellence, their outstanding record in teaching adults, and their ability to mentor and develop leaders.

The curriculum of the Master's degree in Educational Leadership has been carefully designed to ensure the development of educational leaders who can transform schools into learning communities in which all members of a diverse society are accorded opportunity and respect. This curriculum has been developed on a foundation of research in the areas of leadership, management, schooling, curriculum, instructional practices, adult development, and technology.

As active participants in these programs, students will:

- Develop as leaders through an expanded self-knowledge and worldview
- Develop school management competencies and leadership strategies
- Learn how to guide an educational team as they integrate recommendations from research with an assessment of the needs of a school community and create a plan for student success
- Explore the political and social implications of schooling and the educational requirements of a diverse, democratic, multicultural society
- Discover how technology can be utilized to enhance management and communication
- Acquire the confidence necessary to ignite and inspire others

Further, the selection of an emphasis area allows students to concentrate their coursework in an area of leadership in which they wish to develop a particular expertise: P-12 and Principal Licensure, or Student Affairs in Higher Education.

FACULTY

- Sylvia Mendez, Ph.D., Department Chair, and Associate Professor
- Andrea Bingham, Ph.D., Assistant Professor
- Dick Carpenter, Ph.D., Professor
- Tacy Killingsworth, M.A., Instructor
- Al Ramirez, Ed.D., Professor
- Margaret Scott, Ed.D., Assistant Professor
- Dallas Strawn, Ph.D., Senior Instructor
- Marcus Winters, Ph.D., Assistant Professor

- Patricia Witkowsky, Ph.D., Instructor, SAHE Program Coordinator

Master of Arts in Leadership -- P-12 Education

This is a 30-credit-hour program that requires the completion of 9 credits of core leadership courses and 18 credit-hours of P-12 leadership cognate courses for the MA degree.

If within 5 years of taking the first course for the MA and a student wishes to complete principal licensure, the additional required courses are: LEAD 5070, 5450, 6140 and the practicum course LEAD 6820.

Application and Admissions Requirements
Please visit our website for admissions information.

Core Courses (9 credit hours)

- LEAD 5600 - Social Foundations of Education Trends
- LEAD 5700 - Introduction to Research and Statistics
- LEAD 7000 - Master's Research Laboratory in Leadership

Cognate Areas - P-12 Courses (21 credit hours)

- LEAD 5020 - Vision, Ethics, and Politics for School Leaders
- LEAD 5170 - Collaborative Leadership for Equity and Community Outreach
- LEAD 5220 - Data-Driven Program Evaluation and Curriculum Assessment
- LEAD 5230 - Instructional Leadership
- LEAD 6050 - Financing Schools and Programs
- LEAD 6120 - Educational Politics and Collaborative Communities
- LEAD 6400 - Legal Issues for School Leaders

Course Rotations
For a complete listing of course rotation, both campus-based and online-based, consult the Program Planning Schedule.

Master of Arts in Educational Leadership - Student Affairs in Higher Education

This is a 30 credit-hour program with a curriculum developed on a foundation of research in the areas of leadership, administration, student development theory, budgeting, legal and ethical issues, and technology. The program adheres to the standards developed by the Council for the Advancement of Standards in Higher Education (CAS).

Application and Admissions Requirements
Please visit our website for admissions information.

Year One Courses - 18 Credit Hours

Fall

- LEAD 5030 - Visions, Values, and Administration of Student Affairs
- LEAD 5610 - Social and Cultural Foundations of Higher Education

Spring

- LEAD 5210 - Counseling and Helping Skills in Higher Education
- LEAD 5260 - College Student Development Theories

Summer

- LEAD 5290 - Budgeting and Finance in Higher Education
- LEAD 5700 - Introduction to Research and Statistics

Year Two Courses - 12 Credit Hours

Fall

- LEAD 5280 - Legal Issues in Higher Education
- LEAD 5310 - Student Services Program Development and Evaluation

Spring

- LEAD 5110 - Culturally Responsive Practices in Higher Education
- LEAD 6830 - Practicum for Student Affairs in Higher Education

Principal Licensure Only - 33 Credit Hours

Students complete all 33 credit-hours in the P-12 cognate area.

If within 5 years of taking the first course for the MA LEAD only, and a student wishes to complete MA LEAD, the additional required courses are: LEAD 5600, 5700 and *7000.

Application and Admissions Requirements
Please visit our website for admissions information.

Course Requirements

- LEAD 5020 - Vision, Ethics, and Politics for School Leaders
- LEAD 5070 - Human Resources Management and Staff Development
- LEAD 5170 - Collaborative Leadership for Equity and Community Outreach
- LEAD 5220 - Data-Driven Program Evaluation and Curriculum Assessment
- LEAD 5230 - Instructional Leadership
- LEAD 5450 - The Principalship
- LEAD 6050 - Financing Schools and Programs
- LEAD 6120 - Educational Politics and Collaborative Communities
- LEAD 6140 - Supervision and Evaluation of Instruction
- LEAD 6400 - Legal Issues for School Leaders
- LEAD 6820 - Practicum in School Leadership: The Principalship

Superintendent Certificate

The Superintendent Preparation Program allows students within just one year or 9 credits to complete the requirements to become eligible for a Colorado Administrator License.

As an active participant in this program you will:

- Develop as a leader through an expanded self-knowledge and world view.
- Learn how to guide an educational team as they integrate recommendations from research with an assessment of the needs of a school community and create a plan for student success.
- Explore the political and social implications of schooling and the educational requirements of a diverse, democratic, multicultural society.
- Discover how technology can be utilized to enhance management and communication.

- Enhance your ability to ignite and inspire others!
- Develop school management competencies and leadership strategies.

Application and Admissions Requirements
Please visit our website for admissions information.

Course Requirements
Students complete three courses (9 credit hours total) in a one-year format, with a cohort of other educators. The curriculum has been developed on a foundation of research in the areas of leadership, management, schooling, curriculum, instructional practices, adult development, and technology. It has been aligned with the requirements of the Colorado Commission on Higher Education, the Colorado standards for principal and administrator licensure, the ELCC Standards, and the AASA Standards for Superintendents. Course content is based upon Colorado Licensure Standards for administrators, NCATE curriculum standards and the AASA professional standards for the superintendency.

Fall

- LEAD 6860 - Superintendent as Transformational Leader

Spring

- LEAD 6870 - The Superintendent as Manager of Quality Systems

Summer

- LEAD 6880 - Practicum in Central Office Leadership and the Superintendency

Program Dates
Classes meet for four Saturdays each semester from 9:00 a.m. 4:00 p.m. The Summer practicum does not require any class meetings at UCCS. Specific class dates will be determined before the start of each semester. For application and registration information please contact the Online and Academic Outreach office, 719-255-3498, www.uccs.edu/~outreach/.

INCLUSIVE EARLY CHILDHOOD EDUCATION

FACULTY

- *Associate Professor:* Christi Kasa (Chair)
- *Director, Inclusive Early Childhood Education:* Lissanna Follari

PROGRAMS OF STUDY

- Inclusive Early Childhood Education, BI™

INCLUSIVE EARLY CHILDHOOD EDUCATION, BI™

This new and innovative program is designed to prepare UCCS students to teach all children in early childhood settings. UCCS students in this program will become part of a newly emerging field of professionals in inclusive early childhood education who are called on to innovate in the area of curriculum development, individual learning supports, and technology.

Inclusive early childhood educators may have the opportunity to teach, run their own business, or invent, design, and market curriculum, technology, and applications. Inclusive early childhood educators will have preparation in the areas of innovation, business, and marketing and be able to take ideas developed while working with children and enhance them through business planning and implementation. A Bachelor of Innovation will prepare students to take advantage of the many opportunities that they will encounter throughout their careers.

The Bachelor of Innovation in Inclusive Early Childhood Education (BI:IECE) will combine both teacher preparation in Early Childhood Special Education (CDE license 9.08) and Early Childhood Education (CDE license 8.01) through a four-year, interdisciplinary professional degree. The term "professional degree" applies to this program because it meets the professional teaching standards established by the Colorado Department of Education for programs in early childhood and special education. The undergraduate program is design to meet a growing need in Southern Colorado for qualified education of young children, including those with disabilities or who are considered at risk and in need of early intervention.

FACULTY

- Christi Kasa, Ph.D., Department Co-Chair and Associate Professor
- Lissanna Follari, Ph.D., Director of Inclusive Early Childhood Education

GENERAL ACADEMIC INFORMATION

Academic Policies
It is the responsibility of each student to know and follow all academic policies established by UCCS and the College of Education that are set forth in this catalog.

Course Prerequisites
Students are responsible for knowing and completing all course prerequisites. Course prerequisites are strictly enforced for all classes at UCCS.

Email Accounts
All students are assigned an official UCCS email address. Email is the official means of communication for UCCS, so it is imperative that students check their email accounts regularly.

Advising
Education students in good standing are not required to see their academic advisor before registering for courses in any semester, but it is recommended. Academic advising assists students in selecting their classes so that they can progress effectively through their degree program. To make an appointment with a College of Education faculty advisor, please contact the COE Student Resource Office, 3010 Columbine Hall, 719-255-4996 or education@uccs.edu.

Restrictions and Limitations
Students may apply for a maximum of 6 credit-hours of independent study from courses listed in the program of study towards the bachelor's degree. Students may not take any course with a pass/fail grading scheme.

Probation/Suspension
To remain in good academic standing within the College of Education, students must maintain a cumulative CU GPA of 2.5 or better. Students whose cumulative CU GPA falls below a 2.5 will be placed on probation for the next semester in which they are enrolled. While on probation students must raise their cumulative GPA to 2.5 within one semester. If the required semester GPA is not met, the student will be suspended from the College of Education for a full academic year (fall and spring semesters). PLEASE NOTE: While on probation, registration

for the subsequent semester will be blocked until final grades are posted for the current semester. This is to verify that the minimum semester GPA for each student has been fulfilled.

Course Load
A full-time course load is 12 credit hours in a semester. The maximum course load is 18 credit hours in a semester. If a student wishes to take more than 18 credit hours in a given semester, special permission must be obtained through the Student Success Center. Students who expect to work while enrolled in university courses should register for course loads that they can complete without unusual difficulty. Recommended course loads based on work hours is listed below.

Employed Hours	Enrolled Credit Hours
40 hours per week	6-9 credit hours
30 hours per week	8-11 credit hours
20 hours per week	10-13 credit hours

DEGREE REQUIREMENTS

- A minimum of 121 hours must be completed with a cumulative CU grade point average of 2.5; at least 45 of these hours must be at the upper-division level (courses numbered 3000-4999).
- A minimum GPA of 2.75 or higher must be maintained in College of Education courses to be awarded the BI in Inclusive Early Childhood Education.
- A cumulative CU GPA of 2.5 or above must be maintained to remain in good academic standing in the program.
- Students must complete all Block 1, Block 2, and Student Teaching or IECE Professional Internship courses as a student in the College of Education.
- Students pursuing Teacher Licensure must complete student teaching.
- Students pursuing the Non-licensure option must complete IECE Professional Internship.
- Courses numbered below 1000 do not count towards degree completion.
- Additional course options may be available for the Humanities and Natural Science requirements. Contact your academic advisor for more details.

Application and Admissions Requirements
Please visit our website for admissions information.

COURSE REQUIREMENTS

The IECE program requires a minimum of 60 credit hours of College of Education coursework.

All upper-division (3000+ level) IECE courses must have a grade of "B-" or better.

All other courses must have a grade of "C-" or better.

IECE Core Courses (57 Credit Hours)
- COUN 4500 - Wellness, Resilience and Emotional Intelligence
- IECE 1000 - Introduction to Inclusive Early Childhood Education
- IECE 1010 - Diversity and Child Development

- IECE 1020 - Learning Through Play
- IECE 2000 - Collaborative Partnerships in Inclusive Early Childhood Education
- IECE 3000 - Observation and Assessment for Inclusive Early Childhood Education
- IECE 3010 - Early Language and Literacy Development 1: Birth-4
- IECE 3020 - Block I Practicum: Inclusive Birth-4
- IECE 4000 - Math and Numeracy in the Early Childhood Inclusive Classroom
- IECE 4010 - Early Language and Literacy 2 (Ages 5-8)
- IECE 4020 - Creating Classroom Communities: Social & Behavioral Supports for Young Children
- IECE 4030 - Block 2 Practicum: Inclusive 5-8
- IECE 4040 - Inclusive Student Teaching
- IECE 4050 - Inclusive Early Childhood Seminar
- IECE 4060 Inclusive Early Childhood Education Professional Internship
- TED 4400 - Children's Literature

Innovation Core Courses (24 Credit Hours)

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Disciplinary Core Courses (15 Credit Hours)

Complete one of the Cross-Disciplinary Cores listed below. Each Cross-Disciplinary Core consists of 15 credit hours. See the BI website for specific courses.

- Business
- Creative Communication
- Engineering Technology
- Globalization

Composition Courses (3 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing - must be completed with a "B-" or better grade.
- PORT 3000 - Writing Portfolio Assessment

General Education Courses (16 Credit Hours)

All UCCS students are required to complete one course in each of three areas - humanities, social sciences, and natural sciences.

Although any Gateway Program Seminar course can be completed, students are encouraged to choose "Head of the Class" for their topic area.

Humanities - choose one of the following

- HIST 1510 - U.S.: Birth of a Nation, 1607-1789

- HIST 1520 - U.S.: Expansion and Division, 1789-1877

Social Science

- LEAD 1000 - Historical, Philosophical, and Sociological Foundations of Education

Natural Science - complete one of the course combinations listed below

- BIOL 1000 - Biology in the Modern World **and**
  BIOL 1060 - Introductory Biology Laboratory

  OR

- CHEM 1101 - Chemistry in the Modern World **and**
- CHEM 1102 - Chemistry in the Modern World Laboratory

Gateway Program Seminar

- GPS 1010 - Gateway Program Seminar

Quantitative Reasoning Skills

- MATH 3010 - Mathematics for Elementary Teachers I

General Electives

- 3 credits in licensure program **or**
- 3 - 7 credits in non-licensure program

Licensure/Endorsement Requirements

Students must successfully pass the PLACE ECE and ECSE tests before being given an institutional recommendation for licensure.

Post Bac Licensure - Inclusive Early Childhood Education

The post baccalaureate licensure program is designed for students who already hold a bachelor's degree, but would like to earn their teaching license in Early Childhood Education (ECE) and Early Childhood Special Education (ECSE).

Students wishing to earn teaching licensure in Early Childhood Education and Early Childhood Special Education can take the licensure portion post baccalaureate. The student would earn the licenses offered, but no degree would be awarded.

Initial Coursework (14 Credit Hours)

- IECE 1000 - Introduction to Inclusive Early Childhood Education
- IECE 1010 - Diversity and Child Development
- IECE 1020 - Learning Through Play
- IECE 2000 - Collaborative Partnerships in Inclusive Early Childhood Education

Block 1 - Offered in Spring (12 credit hours)

- IECE 3000 - Observation and Assessment for Inclusive Early Childhood Education
- IECE 3010 - Early Language and Literacy Development 1: Birth-4
- IECE 3020 - Block I Practicum: Inclusive Birth-4

Block 2 - Offered in Fall (15 credit hours)

- IECE 4000 - Math and Numeracy in the Early Childhood Inclusive Classroom
- IECE 4010 - Early Language and Literacy 2 (Ages 5-8)

- IECE 4020 - Creating Classroom Communities: Social & Behavioral Supports for Young Children
- IECE 4030 - Block 2 Practicum: Inclusive 5-8

Student Teaching - Offered in Spring (12 credit hours)

- IECE 4040 - Inclusive Student Teaching **
- IECE 4050 - Inclusive Early Childhood Seminar **

*Up to 9 credits of coursework can be transferred from equivalent courses. These transfer credits must be approved by a faculty member. The IECE post bacc program is not a graduate level program and credits will not apply towards a graduate degree.

**Students who are seeking an initial license in ECE and ECSE are required to take student teaching and student teaching seminar. Students who already hold a valid Colorado teaching license and are looking to earn an added endorsement in ECE and ECSE are NOT required to complete student teaching and student teaching seminar.

Additional Information on Licensure

The Inclusive Early Childhood Education Licensure Program is a dual licensure program. Students who successfully complete the post baccalaureate program will be recommended for an initial teaching license in Early Childhood Education (CDE License 8.01) and an added endorsement in Early Childhood Special Education (CDE License 9.08).

Upon completion of the program students should apply for the following:

1. Initial teaching license in Early Childhood Education (CDE License 8.01)
2. Added endorsement in Early Childhood Special Education (CDE License 9.08)

Students completing the post baccalaureate program as an added endorsement should apply for both Early Childhood Education and Early Childhood Special Education as added endorsements.

Exam Requirements

In order to receive an initial license or added endorsement students will need to complete the following exams:

- Praxis Elementary Content Knowledge (0014/5014)
    - Taken prior to degree program admission
- PLACE Early Childhood Education
    - During Block 2
- PLACE Early Childhood Special Education
    - During Block 2

For more information students should visit: www.place.nesinc.com/.

Students should take the exams during the Fall semester before student teaching.

INCLUSIVE ELEMENTARY EDUCATION

FACULTY

- *Associate Professor:* Christi Kasa (Chair)
- *Director, Inclusive Early Childhood Education:* Lissanna Follari

PROGRAMS OF STUDY

- Inclusive Elementary Education, BA

INCLUSIVE ELEMENTARY CHILDHOOD EDUCATION, BA

The Bachelor of Arts in Inclusive Elementary Education prepares teachers to utilize universal design, technology, and innovative methods to support the success of all students.

PROGRAM HIGHLIGHTS

- Courses are designed to infuse special education and English as a Second Language methods and strategies throughout the program.
- Field experiences early and often allow preservice teachers to apply learning to classroom.
- Preservice teachers spend over 800 hours in the field.
- Preservice teachers have multiple opportunities to plan lessons, teach, and assess effectiveness of instruction; qualified supervisors provide feedback throughout program.

FACULTY

- Christi Kasa, Ph.D., Department Co-Chair and Associate Professor
- Lissanna Follari, Ph.D., Director of Inclusive Early Childhood Education
- Ji Hyun Oh, Ph.D. Candidate 2016, Assistant Professor

Application and Admissions Requirements
Please visit our website for admissions information.

COURSE REQUIREMENTS

Fall 1

- GPS 1010 Gateway Program Seminar
- ECON 1000 The Economics of Social Issues **or** ECON 1010 Introduction to Microeconomics **or** ECON 1050 Economics in Practice
- ENGL 1310 Rhetoric and Writing I: Academic Reading and Analytical Writing
- HIST 1510 U.S.: Birth of a Nation, 1607-1789 **or** HIST 1520 U.S.: Expansion and Division, 1789-1877
- GES 1980 World Regional Geography **or** GES 1990 Introduction to Human Geography

Spring 1

- ENGL 1410 Rhetoric and Writing II: Argument and Research
- ENGL 1500 Introduction to Literature for Non-Majors
- IECE 1010 Diversity and Child Development
- LEAD 1000 Historical, Philosophical, and Sociological Foundations of Education
- PSC 1100 The American Political System

Fall 2

- IELM 1000 Introduction to Inclusive Education
- IELM 2000 Integrated Science I
- CURR 4800 Schools, Society, and Diversity
- TED 4400 Children's Literature

- MATH 3010 Mathematics for Elementary Teachers I

Spring 2

- CURR 4170 Introduction to Technology in Education
- IELM 1500 Health and Physical Education for Elementary Teachers
- IELM 2500 Art and Music for Elementary Teachers
- IELM 3500 Integrated Science II
- MATH 3020 Mathematics for Elementary Teachers II

Fall 3

- CURR 3713 Language and Linguistics
- COUN 4500 Wellness, Resilience and Emotional Intelligence
- IECE 4000 Math and Numeracy in the Early Childhood Inclusive Classroom
- IELM 3700 Designing Transitions and Inclusive Futures
- IELM 3020 Field Placement I

Spring 3

- IELM 4000 Collaboration and Co-Teaching
- IELM 4020 Field Placement II
- IELM 4070 Teaching Students with Complex Support Needs
- TED 3750 Second Language Acquisition

Summer 4

- IECE 4010 Early Language and Literacy 2 (Ages 5-8)
- TED 4580 Elementary Curriculum, Instruction, and Classroom Management

Fall 4

- IELM 2700 Project-Based Instruction
- IELM 4015 Teaching Reading and Writing (Grades 2-6)
- IELM 4025 Teaching Elementary Mathematics
- IELM 4030 Field Placement III
- IELM 4600 Teaching Elementary Social Studies

Spring 4

- IELM 4630 **Student Teaching -** 8 hours per day for 16 weeks, 3 weeks solo; 640 hours total

SPECIAL EDUCATION

FACULTY

- *Associate Professor:* Christi Kasa (Chair)
- *Assistant Professors:* Elaine Cheesman, Scott Kupferman, and Emily Nusbaum
- *Senior Instructor:* Laura Marshall

PROGRAMS OF STUDY

- Special Education, MA Special Education Licensure Programs (SELP)
- Special Education, MA

SPECIAL EDUCATION LICENSURE PROGRAMS (SELP)

The Special Education Licensure Program (SELP) provides professional preparation for undergraduate and graduate students as special education teachers. The program features exemplary teaching, scholarship and community service for the purpose of increasing the quality of life for individuals with disabilities.

The Special Education Program offers courses leading to licensure or additional endorsement in special education. A non-licensure option is also available.

FACULTY

- Christi Kasa, Ph.D., Associate Professor
- Elaine Cheesman, Ph.D., Assistant Professor
- Laura Marshall, M.A., Senior Instructor
- Scott Kupferman, Ph.D., Assistant Professor

Application and Admissions Requirements
Please visit our website for admissions information.

Initial License in Special Education with or Without MA

In the newly designed program students will complete the requirements to be recommended for the initial license as Special Education Generalist.

Students in the Special Education Initial Licensure Program are provided the experiences and academic support to learn how to meet the needs of all students with disabilities in the general education classroom. Students will be taught to focus on student strengths in order to support academic and social progress in inclusive environments. Coursework and practicum placements will be linked by assignments. These carefully planned assignments will allow students to practice their skills and develop techniques and materials that will lead to their successful development as teachers.

The initial licensure is a cohort model program that begins each fall. The program requires students to take each class in the semester as indicated on the initial licensure program planning form. Students must commit to completing these courses in sequence.

Students have the option of taking two courses in the summer (SPED 5001 or SPED 5000) as unclassified students before they start the program.

The initial licensure program requires a significant amount of time spent working in the field. Applicants who anticipate problems in completing the 800 clock hour field experience courses of the program (4 week practicum, internship, and student teaching) should speak with a faculty member immediately in order to discuss their individual situation.

First Year Courses - 25 Credit Hours

Fall (9 credit hours)

- SPED 5001 - Introduction to Special Education *
- SPED 5000 - dis/Ability Studies in Education *
- CURR 5170 - Introduction to Technology in Education (online)

Spring (10 credit hours)

- SPED 5020 - Significant Support Needs
- TED 5570 - Elementary Literacy Methods
- SPED 5030 - Elementary/Secondary Internship (one day per week in the field)

Summer (6 credit hours)

- SPED 5021 - Designing Positive Classroom Environments
- SPED 5025 - Fieldwork in Inclusive Classrooms (4 weeks - 1/2 day in the field)

*SPED 3000/5000 and 3001/5001 can be taken in the summer prior to beginning the program. Students would take this as an unclassified student. Both SPED 5001 and SPED 5000 will be offered in 8-week sessions. SPED 5000 will meet the first 8 weeks of the semester and SPED 5001 will meet the second 8 weeks of the semester; both of these classes will have online components. Each 8-week session will meet the requirements for a full semester course.

Second Year Courses - 18 Credit Hours

Fall (9 credit hours)

- SPED 5010 - Multisensory Structured Language Education
- SPED 5004 - Self-Determination and Transition (online)
- CURR 5304 - Mathematics and Cognition

Spring (9 credit hours)

- SPED 5022 - Consultation and Collaboration
- SPED 5031 - Elementary/Secondary Student Teaching and Seminar

Total Hours for Initial Licensure: 43

Additional Courses for Master's Degree - 9 Credit Hours

Students wishing to receive a Master's degree will need to take three additional courses listed below. These courses can be taken at the same time as licensure courses or after the completion of the license. Courses must be taken in the order listed below. LEAD 5700 and SPED 5091 may be taken concurrently. LEAD 5700 must be taken before SPED 5090.

- LEAD 5700 - Introduction to Research and Statistics
- SPED 5091 - Current Topics in Special Education
- SPED 5090 - Applied Research Project

Undergraduate Licensure in Special Education

The College of Education and the College of Letters, Arts, and Sciences (LAS) jointly offer the undergraduate special education licensure program. The LAS content area with licensure in special education requires approximately 124 semester hours of coursework. This degree combines a liberal arts education with a content focus and a comprehensive special education teacher licensure program. Students in the undergraduate SELP will receive a BA in one of the five majors:

- English
- Biology
- Geography
- Spanish
- History

Acceptance into the SELP requires a minimum of a 2.5 GPA, acceptance into the College of Letters of Arts and

First Year Courses - 25 Credit Hours

Fall (9 credit hours)
- SPED 3001 - Introduction to Special Education *
- SPED 3000 - dis/Ability Studies in Education *
- CURR 4170 - Introduction to Technology in Education (online)

Spring (10 credit hours)
- SPED 4020 - Significant Support Needs
- TED 4570 - Elementary Literacy Methods
- SPED 4030 - Elementary/Secondary Internship (One day per week in the field)

Summer (6 credit hours)
- SPED 4021 - Designing Positive Classroom Environments
- SPED 4025 - Fieldwork in Inclusive Classrooms (4 weeks - 1/2 day in the field)

*SPED 3000 and 3001 can be taken in the summer prior to beginning the program. Students would take this as an unclassified student. Both SPED 3001 and SPED 3000 will be offered in 8-week sessions. SPED 3000 will meet the first 8 weeks of the semester and SPED 3001 will meet the second 8 weeks of the semester; both of these classes will have online components. Each 8-week session will meet the requirements for a full semester course.

Second Year Courses - 18 Credit Hours

Fall (9 credit hours)
- SPED 4010 - Multisensory Structured Language Education
- SPED 3004 - Self-Determination and Transition (online)
- SPED 4013 - Direct Instruction Practicum

Spring (9 credit hours)
- SPED 4022 - Consultation and Collaboration
- SPED 4031 - Elementary/Secondary Student Teaching and Seminar

Total Hours for Initial Licensure: 43 Hours

Curriculum Planning Form
Print or view Undergraduate Initial Licensure Curriculum Planning Form.

SPECIAL EDUCATION, MA

Students may earn the Master of Arts degree in Special Education after completing a minimum of 33 specified credit hours as outlined in their graduate plan. In the final course (SPED 5090 Applied Research Project) students complete a field-based research project. Students must complete additional coursework as outlined on their graduate plan to be eligible for licensure.

LEARNING OUTCOMES

- Develop new special education knowledge and translate special education and related research into practice.
- Promote and model excellence in special education practice.

- Use assessment data to plan instruction, monitor student progress, and determine effectiveness of instruction.
- Work collaboratively with general educators and communicate in an effective, professional manner with parents, staff, administrators, students and related service personnel.

FACULTY

- Christi Kasa, Ph.D., Associate Professor
- Elaine Cheesman, Ph.D., Assistant Professor
- Laura Marshall, M.A., Senior Instructor
- Scott Kupferman, Ph.D., Assistant Professor

Application and Admissions Requirements
Please visit our website for admissions information.

COURSE REQUIREMENTS

The Master of Arts in Special Education requires 33 credits to be completed at the graduate level. Students must complete 18 credits of core classes and 15 credits of elective coursework. This is an MA only and does not result in recommendation for a teaching license.

Core Courses - 18 Credit Hours

- LEAD 5600 - Social Foundations of Education Trends
- SPED 5001 - Introduction to Special Education
- SPED 5000 - dis/Ability Studies in Education
- LEAD 5700 - Introduction to Research and Statistics
- SPED 5091 - Current Topics in Special Education
- SPED 5090 - Applied Research Project *

*SPED 5090 should be one of the final courses taken to complete the MA in Special Education. LEAD 5700 should be taken early on in the student's program.

Elective Courses - 15 Credit Hours
Choose 15 credits from the following*:

- CURR 5170 - Introduction to Technology in Education
- TED 5570 - Elementary Literacy Methods
- SPED 5020 - Significant Support Needs
- SPED 5021 - Designing Positive Classroom Environments
- SPED 5010 - Multisensory Structured Language Education
- SPED 5004 - Self-Determination and Transition
- CURR 5304 - Mathematics and Cognition
- SPED 5022 - Consultation and Collaboration
- CURR 5700 - Introduction to ESL/Multicultural Education
- CURR 5713 - Language and Linguistics
- CURR 5707 - Pro-Seminar: Parent and Community Involvement

*Students can propose additional classes that can count as elective. If you want to take a class that is not on the list above, please speak with an advisor.

Special Education Generalist Added Endorsement

In this program students will complete the requirements to be recommended for the added endorsement as Special Education Generalist. The added endorsement is available to students who hold a valid Colorado teaching license in another discipline.

Students in the Special Education Added Endorsement program are provided the experiences and academic support to learn how to meet the needs of all students with disabilities in the general education classroom. Students will be taught to focus on student strengths in order to support academic and social progress in inclusive environments. Coursework and practicum placements will be linked by assignments. These carefully planned assignments will allow students to practice their skills and develop techniques and materials that will lead to their successful development as teachers.

The Added Endorsement program is a cohort model program that begins each fall. The program requires students to take each class in the semester as indicated on the Added Endorsement program planning form. Students must commit to completing these courses in sequence.

Students have the option of taking SPED 5000 and 5001 in the summer as unclassified students before they start the program.

The Added Endorsement program requires students to participate in one field experience. Students can choose to complete this experience in the spring or summer semesters.

First Year Courses - 21 Credit Hours

Fall (6 credit hours)
- SPED 5000 - dis/Ability Studies in Education *
- CURR 5170 - Introduction to Technology in Education (online)

Spring (9 credit hours)
- SPED 5020 - Significant Support Needs
- SPED 5022 - Consultation and Collaboration
- SPED 5030 - Elementary/Secondary Internship (one day per week in the field **)

Summer (6 credit hours)
- SPED 5021 - Designing Positive Classroom Environments
- SPED 5025 - Fieldwork in Inclusive Classrooms (4 weeks 1/2 day in the classroom)

*SPED 3000/5000 and SPED 3001/5001 can be taken in the summer prior to beginning the program. Students would take this as an unclassified student. SPED 5000 will be offered the first 8 weeks of the semester. SPED 5001 will meet the second 8 weeks of the semester and will have online components.

** Added endorsement students may choose either SPED 5030 or SPED 5025. Added endorsement students who are working as classroom teachers and are supporting students with disabilities in inclusive environments may have the option of performing SPED 5030 in their own classroom.

Second Year Courses - 6 Credit Hours

Fall (6 credit hours)
- SPED 5010 - Multisensory Structured Language Education
- SPED 5004 - Self-Determination and Transition (online)

Additional Courses for Master's Degree - 9 Credit Hours
Students wishing to receive a Master's Degree will need to take three additional courses listed below. These courses can be taken at the same time as licensure courses or after the completion of the license. Courses must be taken in the order listed below. LEAD 5700 and SPED 5091 may be taken concurrently. LEAD 5700 must be taken prior to SPED 5090.

- LEAD 5700 - Introduction to Research and Statistics
- SPED 5091 - Current Topics in Special Education
- SPED 5090 - Applied Research Project

TEACHING AND LEARNING

The Department of Teaching and Learning (T&L) consists of dedicated faculty with extensive teaching experience. We offer programs that prepare educators to embrace equity, model and foster inquiry, and utilize innovative practices that engage students and support them in reaching their fullest potential. We serve current and prospective teachers who seek licensure, endorsements, certificates, and/or graduate level study.

The Department of Teaching and Learning offers unique opportunities for both preservice and inservice teachers. Our traditional Teacher Education and Licensure Program (TELP) includes Undergraduate and Post-baccalaureate options in elementary and secondary education. Our secondary education content areas are English, Foreign Language, and Social Studies. Those interested in secondary Math and Science will complete the UCCSTeach program, an inquiry-based program modeled after the highly successful UTeach program. Our Alternative Licensure Program (ALP) is offered for secondary licensure (English, Foreign Language, Math, Science, and Social Studies) with online course availability and a Curriculum and Instruction, MA option. T&L is also home to a variety of certificates, endorsements, and Masters programs.

MISSION

We prepare teachers, leaders, and counselors who embrace equity, inquiry, and innovation.

GOALS

- Embrace equity, diversity, and social justice
- Ensure high quality preparation of education and counseling professionals
- Engage in research-based inquiry and practice
- Provide continual professional growth opportunities
- Infuse and enhance the use of technology
- Collaborate with campus and community partners to effect change
- Work across college and university to optimize efficiency and effectiveness

FACULTY

- *Professor:* Mark Malone
- *Associate Professors:* Barbara Frye and Leslie Grant (Chair)
- *Assistant Professors:* Katie Anderson-Pence, Grant Clayton, Pat McGuire, and Monica Yoo
- *Senior Instructors:* Linda Button, Tim Callahan, Beth Cutter, and Sarah Kaka
- *Instructors:* Mary Hanson and Corinne Harmon

PROGRAMS OF STUDY

Degrees and Licensures

- Curriculum and Instruction, MA
    - MA Curriculum and Instruction
    - MA Teaching English to Speakers of Other Languages
    - MA Curriculum and Instruction: Literacy
    - MA in Science Education
    - MA in Space Studies and Science Education
- Curriculum and Instruction, MSc, Science Teaching
    - MSc in Space Studies and Science Teaching
- Alternative Licensure Program (ALP)
- Teacher Education and Licensure Program (TELP)

Endorsements and Certificates

- Culturally Linguistically Diverse Education Endorsement
- Gifted and Talented Online Endorsement
- Information Technology Certificate
- TESL / TEFL Certificate

Visit our website for more information on endorsements and certificates program.

ALTERNATIVE LICENSURE PROGRAM (ALP)

The ALP at UCCS is a "designated agency" approved by the Colorado State Board of Education to provide a one-year program for candidates seeking licensure in one of these areas: English Language Arts, Mathematics, Science, Social Studies, World Languages (Spanish).

We work with self-motivated, committed, resourceful candidates who can readily assume teaching roles in public school classrooms. Ideal ALP applicants are paraprofessionals, substitute teachers, career changers, retired military, OR others who have the background and potential for successfully completing this rigorous, fast-paced program. Those seeking licensure only can complete the program with ten courses. Those seeking an M.A. in Curriculum and Instruction need to complete only two more courses within three semesters of completing the ALP.

We are a "designated agency" approved by the Colorado State Board of Education to provide a one-year program for candidates seeking licensure in one of these areas: English Language Arts, Mathematics, Science, Social Studies, World languages (Spanish).

We work with self-motivated, committed, resourceful candidates who can readily assume teaching roles in public school classrooms. Ideal ALP applicants are paraprofessionals, substitute teachers, career changers, retired military, OR others who have the background and potential for successfully completing this rigorous, fast-paced program.

Those seeking licensure only can complete the program with just ten courses (see list below). Those seeking an M.A. in Curriculum and Instruction need to complete only two more courses within the next three semesters of completing the ALP.

FACULTY

- Leslie Grant, Ph.D. Department Chair
- Katie Anderson-Pence, Ph.D., Assistant Professor
- Greg Button, Ed. D., Instructor
- Linda Button, Ed. D., Instructor
- Tim Callahan, M.A., Senior Instructor
- Grant Clayton, Ph.D., Assistant Professor
- Beth Cutter, M.A., Senior Instructor
- Barbara Frye, Ph.D., Assistant Professor
- Mary Hanson, M.A., Instructor
- Sarah Kaka, M.A., Instructor / Director of Teacher Education
- Mark Malone, Ph.D., Professor
- Pat McGuire, Ph.D., Assistant Professor / Co-Director UCCSTeach Program
- Monica Yoo, Ph.D., Assistant Professor

Applications and Admissions Requirements
Please visit our website for admissions information.

COURSE REQUIREMENTS - 33 CREDIT HOURS

Core Courses
May be taken during any semester; students must complete them by the end of their "ALP year."

- CURR 5800 - Schools, Society, and Diversity
- TED 5520 - Educational Psychology
- SPED 5001 - Introduction to Special Education
- TED 5800 - English as a Second Language for Educators

Summer Courses
Students may take these courses prior to securing a full-time teaching position.

- CURR 5014 - Secondary - Instructional/Classroom Management Strategies I
- CURR 5016 - Secondary - Instructional/Classroom Management Strategies II

Fall Courses
Students may NOT take these courses until they have a full-time teaching position.

- CURR 5491 - Secondary English Methods **or**
- CURR 5492 - Secondary Math Methods **or**
- CURR 5493 - Secondary Science Methods **or**
- CURR 5494 - Secondary Social Studies Methods **or**
- CURR 5495 - Spanish Methods
- CURR 5018 - Alternative Teacher Seminar in Secondary Education I (this class is mandatory)

Spring Courses
Students may NOT take these courses until they have a full-time teaching position.

- CURR 5400 - Teaching Reading and Writing in Content Areas
- CURR 5020 - Alternative Teacher Seminar in Secondary Education II

LICENSURE PLUS MA IN CURRICULUM AND INSTRUCTION

Licensure plus MA in Curriculum and Instruction requires an additional 6 credits for a total of 39 credit hours. The MA in Curriculum and Instruction includes the coursework for ALP (listed above) and the following additional courses, taken within three semesters of completing ALP.

- LEAD 5700 - Introduction to Research and Statistics
- CURR 5090 - Master's Research Project

Please note: It is the students' responsibility to make sure that all program requirements and licensure procedures are completed appropriately. All participants in the ALP must maintain a 3.0 GPA and receive no grade lower than a B- in any class. Because the program requires immediate participation on the job in a school, there are no opportunities for Incompletes in the methods OR resident teaching classes.

TEACHER EDUCATION AND LICENSURE PROGRAM (TELP)

The Teacher Education and Licensure Program (TELP) includes a one-year intensive, full-time program that leads to recommendation for licensure from the State of Colorado. Undergraduate students seeking a baccalaureate degree select a major from the College of Letters, Arts, and Sciences and fulfill the requirements for both the BA and licensure. Candidates who have already earned a baccalaureate degree will apply for the Licensure Only option with the opportunity to apply nine credits toward the MA in Curriculum and Instruction. The undergraduate and post-baccalaureate programs have their own admission processes beyond the admission requirements of the University. The admission processes, deadlines, fees, and other criteria are described on their respective websites. There are two separate strands of licensure for both undergraduates and post-baccalaureate students: elementary and secondary. The course requirements for the two strands differ and are listed under Courses on our website.

TELP leads to an initial license in the State of Colorado. Both the undergraduate and post-baccalaureate students have the option to take three of the four core classes at the graduate level and apply them to an MA in Curriculum & Instruction within a five-year period. Undergraduates, however, cannot use those credits toward both their BA degree and their MA degree.

CENTRAL FEATURES OF TELP

- Integration of education courses with professional field experiences
- Over 1000 hours of supervised and mentored field experiences
- Focus on embracing diversity and social justice throughout coursework and experiences
- Preparation of teacher candidates with evidence-based pedagogy and best practices through carefully designed methods courses
- Cohort model situated in partner schools with support from clinical teachers (mentor teachers), site coordinators (building liaisons), and site professors (university supervisors)
- Set sequence of courses from May to May, commonly known as the Professional Year

FACULTY

- Leslie Grant, Ph.D. Department Chair

- Katie Anderson-Pence, Ph.D., Assistant Professor
- Greg Button, Ed. D., Instructor
- Linda Button, Ed. D., Instructor
- Tim Callahan, M.A., Senior Instructor
- Robert Gagnon, Senior Instructor/Master Teacher
- Grant Clayton, Ph.D., Assistant Professor
- Beth Cutter, M.A., Senior Instructor
- Barbara Frye, Ph.D., Assistant Professor
- Mary Hanson, M.A., Instructor
- Sarah Kaka, M.A., Instructor / Director of Teacher Education
- April Lanotte, Senior Instructor/Master Teacher
- Mark Malone, Ph.D., Professor
- Pat McGuire, Ph.D., Assistant Professor / Co-Director UCCSTeach Program
- Curtis Turner, Senior Instructor/Master Teacher
- Monica Yoo, Ph.D., Assistant Professor

UNDERGRADUATE PROGRAM REQUIREMENTS

Licensure requires 42 hours in addition to an undergraduate major.

Undergraduate students seeking a bachelor's degree select an approved major and fulfill the requirements for both the bachelor's degree and licensure.

UCCSTeach Option: Students interested in pursuing secondary Math or Science participate in UCCSTeach, enabling them to complete a degree that meets the requirements of both their Math or Science major and licensure requirements of Colorado.

Application and Admissions Requirements
Please visit our website for admissions information.

UNDERGRADUATE CONTENT REQUIREMENTS

In the State of Colorado, at the undergraduate level, one must earn a content major along with fulfilling licensure requirements. UCCS students may choose one of the following:

Elementary	Secondary
Biology	*Biology
English (pre-licensure)	*Chemistry
Geography	English (pre-licensure)
History	History
Spanish	*Math
	Spanish (K-12 certification)

**Note: Secondary Science and Math majors meet licensure requirements through the UCCSTeach Program.*

OTHER REQUIREMENTS

Complete all core classes with a B- or better

- Complete CURR 4800/5800: Schools, Society, and Diversity (required and recommend taking first)

- Complete TED 3010: Early Diverse School Experience (required and recommend taking first)
- Complete TED 4520/5520: Educational Psychology (required)
- Complete SPED 3001/5001: Introduction to Special Education (required)
- Complete TED 4800/5800: ESL for Educators
  (Note: this course not required for undergrads, but highly recommended)
- Complete MATH 3010 and MATH 3020 with a B- or better (required for elementary only)

Elementary Strand - 43-46 Credit Hours

Recommended Sequence

Core Classes (12-16 credit hours)

- CURR 4800/5800 Schools, Society, and Diversity
  - Must be taken prior to professional year in Summer, Fall or Spring
- TED 3010 - Early School Diversity Practicum *
  - Prerequisite: CURR 4800/5800 taken prior to or concurrently
  - Must be taken before applying to TELP
- TED 4520/5520 - Educational Psychology
  - Must be taken prior to professional year in Summer, Fall or Spring
- TED 4800/5800 - ESL for Educators
  - Note: not required for undergrads but highly recommended
  - Must be taken prior to professional year during Summer, Fall, or Spring
- SPED 3001/5001 - Intro to Special Education
  - Must be taken prior to professional year in Summer, Fall, or Spring

* Each credit hour of TED 3010 earned requires 30 hours of school experience. Three credit hours of this course *are required*. In the event that an applicant has extensive experience teaching and working in a school setting, he or she may petition the Director of TELP or Curriculum and Instruction Department Chair to waive 30 hours of volunteer time, a maximum of one credit of TED 3010. Two credits of TED 3010 will be granted by successful completion of the Teacher Cadet Program.

Summer (6 credit hours)

- TED 4620 - Elementary Reading Methods
- TED 4580 - Elementary Curriculum, Instruction, and Classroom Management

Fall (13 credit hours)

- TED 4600 - Elementary - School Experience
- TED 4570 - Elementary Literacy Methods
- TED 4640 - Elementary Mathematics Methods
- TED 4650 - Elementary Science Methods
- TED 4660 - Elementary Social Studies Methods

Spring (12 credit hours)

- TED 4630 - Elementary - Student Teaching

Secondary Strand - 42 to 45 Credit Hours

Recommended Sequence

Core Classes (12-15 credit hours)

- CURR 4800/5800 - Schools, Society, and Diversity
    - Offered Summer, Fall, or Spring
- TED 3010 - Early School Diversity Practicum *
    - Must be taken prior to applying to TELP
- TED 4800/5800 - ESL for Educators
    - Required for post-baccalaureates only
    - Must be taken prior to professional year during Summer, Fall, or Spring
- SPED 3001/5001 - Introduction to Special Education
    - Must be taken prior to professional year during Summer, Fall, or Spring
- TED 4520/5520 - Educational Psychology
    - Must be taken prior to professional year during Summer, Fall, or Spring

* Each credit hour of TED 3010 earned requires 30 hours of school experience. Three credit hours of this course *are required*. In the event that an applicant has extensive experience teaching and working in a school setting, he or she may petition (Director of TELP or Curriculum and Instruction Department Chair) to waive 30 hours of volunteer time, a maximum of one credit of TED 3010. Two credits of TED 3010 will be granted by successful completion of the Teacher Cadet Program.

Summer (6 credit hours)

- TED 4700 - School Experience - Secondary
- TED 4710 - Methods for Secondary Education

Fall (12 credit hours)

- TED 4700 - School Experience - Secondary
- TED 4720 - Teaching Reading and Writing in the Content Area
- TED 4790 - Secondary Curriculum, Instruction and Evaluation

One of the following:

- TED 4910 - Secondary English Methods
- TED 4940 - Secondary Social Studies Methods
- TED 4950 - Secondary Spanish Methods

Spring (12 credit hours)

- TED 4730 - Secondary - Student Teaching

POST BACCALAUREATE REQUIREMENTS

Candidates who already have a bachelor's degree will apply for the licensure-only option. Licensure requires 45 credit hours with the option of applying 9 of those hours toward a general Master of Arts in Curriculum.

UCCSTeach Option: Candidates interested in secondary Math or Science join UCCSTeach to complete their licensure requirements for Colorado. See the UCCSTeach section below.

Application and Admissions Requirements
Please visit our website for admissions information.

Post Baccalaureate Content Requirements

Elementary

- Complete 3 credits U.S. History, 3 credits U.S. Government, 3 credits Economics (macro or micro), and 3 credits of World Regional or Human Geography

- Receive a B- or better in MATH 3010 and MATH 3020

Secondary

- English
- Social Studies
- Spanish
- Math or Science (UCCSTeach)

Post Baccalaureate Core Requirements

Complete all core classes with a B- or better.

- Complete CURR 4800/5800: Schools, Society, and Diversity (required and recommend taking first)
- Complete TED 3010: Early Diverse School Experience (required and recommend taking first)
- Complete TED 4520/5520: Educational Psychology (required)
- Complete SPED 3001/5001:Introduction to Special Education (required)
- Complete TED 4800/5800: ESL for Educators (required)
- Complete MATH 3010 and MATH 3020 with a B- or better (required for elementary only)

Primary Strand - 43 to 46 Credit Hours

Recommended Sequence

Core Classes (13-15 credit hours)

- CURR 4800/5800 - Schools, Society, & Diversity
    - Required and recommend taking first
- TED 3010 - Early School Diversity Practicum *
    - Required and recommend taking first
    - Can be taken prior to or concurrently
    - Must be taken before applying to TELP
- TED 4520/5520 - Educational Psychology
- SPED 3001/5001 - Introduction to Special Education
- TED 4800/5800 - ESL for Educators
    - This course not required for undergrads, but highly recommended
- MATH 3010 - Mathematics for Elementary Teachers I
    - Complete with a B- or better (required for elementary only)
- MATH 3020 - Mathematics for Elementary Teachers II
    - Complete with a B- or better (required for elementary only)

* Each credit hour of TED 3010 earned requires 30 hours of school experience. Three credit hours of this course *are required*. In the event that an applicant has extensive experience teaching and working in a school setting, he or she may petition (Director of TELP or Curriculum and Instruction Department Chair) to waive 30 hours of volunteer time, a maximum of one credit of TED 3010. Two credits of TED 3010 will be granted by successful completion of the Teacher Cadet Program.

Summer (6 credit hours)

- TED 4620 - Elementary Reading Methods
- TED 4580 - Elementary Curriculum, Instruction, and Classroom Management

Fall (13 credit hours)

- TED 4600 - Elementary - School Experience
- TED 4570 - Elementary Literacy Methods
- TED 4640 - Elementary Mathematics Methods
- TED 4650 - Elementary Science Methods
- TED 4660 - Elementary Social Studies Methods

Spring (12 credit hours)

- TED 4630 - Elementary - Student Teaching

Secondary Strand - 42-46 Credit Hours

Recommended Sequence

Core Classes (12-15 credit hours)

- CURR 4800/5800 - Schools, Society, and Diversity
  - Offered Summer, Fall, or Spring
- TED 3010 - Early School Diversity Practicum *
  - Must be taken prior to applying to TELP*
- TED 4800/5800 - ESL for Educators
  - Required for post-baccalaureates only
  - Must be taken prior to professional year during Summer, Fall, or Spring
- SPED 3001/5001 - Introduction to Special Education
  - Must be taken prior to professional year during Summer, Fall, or Spring
- TED 4520/5520 - Educational Psychology
  - Must be taken prior to professional year during Summer, Fall, or Spring

* Each credit hour of TED 3010 earned requires 30 hours of school experience. Three credit hours of this course *are required*. In the event that an applicant has extensive experience teaching and working in a school setting, he or she may petition (Director of TELP or Curriculum and Instruction Department Chair) to waive 30 hours of volunteer time, a maximum of one credit of TED 3010. Two credits of TED 3010 will be granted by successful completion of the Teacher Cadet Program. >>Policy Statement and Waiver Form.

Summer (6 credit hours)

- TED 4700 - School Experience - Secondary
- TED 4710 - Methods for Secondary Education

Fall (12 credit hours)

- TED 4700 - School Experience - Secondary
- TED 4720 - Teaching Reading and Writing in the Content Area
- TED 4790 - Secondary Curriculum, Instruction and Evaluation

One of the following:

- TED 4910 - Secondary English Methods
- TED 4920 - Secondary Math Methods
- TED 4930 - Secondary Science Methods
- TED 4940 - Secondary Social Studies Methods
- TED 4950 - Secondary Spanish Methods

Spring (12 credit hours)

- TED 4730 - Secondary - Student Teaching

UCCSTEACH: SECONDARY TEACHER LICENSURE PROGRAM FOR MATH/SCIENCE MAJORS

UCCSTeach is a collaborative program shared by the College of Education and the College of Letters, Arts, and Sciences. UCCSTeach offers undergraduate university students the opportunity to earn a bachelor's degree in mathematics, biology, chemistry, or physics, and a secondary teaching license in four years. Completion of the UCCSTeach program leads to recommendation for teacher licensure from the State of Colorado. UCCSTeach classes start early in your academic career visit the UCCSTeach website or contact the program office at 719-255-3446 for more information.

The program:

- Allows students to see what teaching is really like early in the program
- Places students and a partner in a classroom
- Offers a beginning 1-credit-hour class with classroom teaching experiences
- Offers hands-on guidance from experienced Master Teachers and faculty
- Allows post-baccalaureate students with an undergraduate math, science or STEM-related degree to seek teacher licensure for secondary math and science

See www.uccs.edu/~uccsteach/ for information on UCCSTeach and the various degree plans.

FACULTY

- Tom Christensen, PhD, Co-Director and Professor
- Pat McGuire, PhD, Co-Director and Assistant Professor
- Robert Gagnon, Senior Instructor/Master Teacher
- April Lanotte, Senior Instructor/Master Teacher
- Curtis Turner, Senior Instructor/Master Teacher
- Vickie Newkirk, Program Coordinator

Application and Admissions Requirements
Please visit our website for admissions information.

REQUIRED COURSES - 32 CREDIT HOURS

UCCSTeach currently offers 11 courses.

- UTED 1010 - Step I: Inquiry Approaches to Teaching *
- UTED 1020 - Step II: Inquiry-Based Lesson Design *
- UTED 2010 - Knowing and Learning in Mathematics and Science
- UTED 3020 - Classroom Interactions *
- UTLS 3030 - Perspectives on Science and Math
    - Offered in Spring only
- UTLS 3040 - Science Research Methods
    - Offered in Fall only
    - Science only
- UTLS 3480 - Functions and Modeling
    - Offered in Fall Only

    - Math only
- UTED 4710 - Project-Based Instruction *
- UTED 4720 - Reading in the Content Area
    - Offered in Fall only
- UTED 4730 - Apprentice Teaching UCCS Teach and Seminar and Seminar *
    - 12 credit hours required

* FIELD HOURS REQUIRED FOR THESE COURSES.

CURRICULUM AND INSTRUCTION, MA

The Master of Arts degree in Curriculum & Instruction is designed to provide professional educators increased knowledge of current research on teaching and learning and its contexts and to apply that research in practice. The degree provides an opportunity for teachers to focus on an area of interest and to develop increased skills and knowledge in that area.

The MA in Curriculum & Instruction is a thirty (30) semester-hour program designed for licensed, practicing teachers who desire to continue developing their professional expertise. Candidates complete a core of academic work requiring:

1. Examination of educational issues from the perspective of social context and culturally responsive pedagogy;
2. Investigation and analysis of curricular design and models of teaching;
3. Examination and analysis of seminal and current research and application of research in instructional settings;
4. Consideration of the role and uses of technology in curriculum and instruction and its implementation in the classroom.

Further, the selection of a cognate emphasis area allows students to concentrate their coursework in an area of instruction in which they wish to develop a particular expertise: TESOL, Science Education, Space Studies/Science Teaching, Culturally and Linguistically Diverse Education, Gifted and Talented.

For information on our Teacher Education Licensure Program (TELP), see the Teacher Education Licensure section above.

FACULTY

- Leslie Grant, Ph.D., Department Chair, Associate Professor
- Katie Anderson-Pence, Ph.D., Assistant Professor
- Linda Button, Ed. D., Instructor
- Tim Callahan, M.A., Senior Instructor
- Grant Clayton, Ph.D., Assistant Professor
- Beth Cutter, M.A., Senior Instructor
- Barbara Frye, Ph.D., Assistant Professor
- Mary Hanson, M.A., Instructor
- Sarah Kaka, M.A. Instructor / Director of Teacher Education
- Mark Malone, Ph.D., Professor
- Pat McGuire, Ph.D., Assistant Professor / Co-Director UCCSTeach Program
- Monica Yoo, Ph.D., Assistant Professor

Application and Admissions Requirements
Please visit our website for admissions information.

REQUIRED COURSES

Core Content - 12 Credit Hours
All C&I Master's degree students complete a core of work that asks them to do the following:

- Examine educational issues from the perspective of their social context
- Become intelligent consumers of research and apply research to their instructional settings

To this end, the degree requires these core courses:

- CURR 5000 - Foundations: History and Research in Curriculum Studies
- CURR 5002 - Issues, Strategies, and Models in Curriculum Design
- LEAD 5700 - Introduction to Research and Statistics
- CURR 5090 - Master's Research Project *

* To be taken as the FINAL Course. (Prerequisite: LEAD 5700 - Introduction to Research and Statistics)

Elective Coursework - 9 Credit Hours
Students may choose from any graduate course selection in the College of Education including the areas of:

- Curriculum and Instruction
- Science Education
- Reading
- Gifted and Talented
- Technology
- Special Education
- Counseling
- Leadership

Cognate Area - 9 Credit Hours
Choose 9 credit hours from the following cognate areas:

Gifted & Talented
- CURR 5201 - Foundations of Gifted Education
- CURR 5202 - Assessment and Identification of Gifted and Talented Students
- CURR 5203 - Psychology of the Gifted: Social, Emotional Needs, and Special Populations
- CURR 5215 - Gifted Program Leadership

Linguistically Diverse Education (LDE)
- CURR 5700 - Introduction to ESL/Multicultural Education
- CURR 5701 - Materials and Methods: Linguistically Diverse/Multicultural Education
- CURR 5703 - Assessment: Methods, Materials, and Theories for ELLs

Science Education
- CURR 5501 - Exploring the Science Curriculum
- CURR 5502 - Developing Manipulative Materials for Science Teaching

- CURR 5503 - Integrating Reading and Science
- CURR 5504 - Topics in Teaching Science
- CURR 5511 - Teaching Energy and Environment
- CURR 5514 - Activities for Teaching Weather
- CURR 5520 - Activities for Teaching Physical Science
- CURR 5522 - Teaching Cosmology - Explaining the Universe
- CURR 5530 - Cutting Edge Science for Cutting Edge Teachers

Counseling & Human Services

- COUN 5040 - Human Growth and Development
- COUN 5330 - Issues, Ethics and Trends in Professional Counseling
- COUN 5430 - Career Development
- COUN 5860 - Social and Cultural Foundation of Professional Counseling

Leadership, Research & Foundations

- LEAD 5070 - Human Resources Management and Staff Development
- LEAD 6120 - Educational Politics and Collaborative Communities
- LEAD 6400 - Legal Issues for School Leaders

Special Education

- SPED 5003 - Classroom and Instructional Management
- SPED 5004 - Self-Determination and Transition
- SPED 5010 - Multisensory Structured Language Education
- SPED 5012 - Differentiated Instruction
- SPED 5021 - Designing Positive Classroom Environments
- CURR 5410 - Informal Diagnostic and Remedial Techniques of Reading

Instructional Technology

- CURR 5170 - Introduction to Technology in Education
- CURR 5171 - K-12 Web-Based Educational Resources
- CURR 5172 - Multimedia Development for K-12 Educators

Course Rotations

For a complete listing of course rotation between campus-based and online-based, consult the list of course rotations.

MA IN TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES (TESOL)

This degree program prepares pre-service and inservice teachers to work with students who are learning English as a second or additional language. Educators working with individuals, small groups or whole classes of English Language Learners (ELLs) will benefit from this program. Teachers who have a teaching license from the Colorado Department of Education may use this opportunity to earn an endorsement in Culturally & Linguistically Diverse (CLD) Education as well as a Master of Arts Degree in Teaching English to Speakers of Other Languages (TESOL). The MA degree is 30 semester hours or ten courses. The first eight courses (24 semester hours) are applicable to the CLD Endorsement from the Colorado Department of Education. The last two courses are the research classes that complete the MA in TESOL. Also available is the four-course (12 credit hours) Teaching English as a Second/Foreign Language Certificate (online only, TESL/TEFL).

Application and Admissions Requirements
Please visit our website for admissions information.

Required Courses

Core Content - 6 Credit Hours

- LEAD 5700 - Introduction to Research and Statistics
- CURR 5090 - Master's Research Project

Culturally Linguistically Diverse Education Courses for CLD Endorsement - 24 Credit Hours

- CURR 5700 - Introduction to ESL/Multicultural Education
- CURR 5701 - Materials and Methods: Linguistically Diverse/Multicultural Education *
- CURR 5702 - Literacy for All Learners
- CURR 5703 - Assessment: Methods, Materials, and Theories for ELLs *
- CURR 5704 - Practicum in ESL/Multicultural Education
- CURR 5705 - Second Language Acquisition: Capstone *
- CURR 5707 - Pro-Seminar: Parent and Community Involvement
- CURR 5713 - Language and Linguistics *

*TESL/TEFL COURSES REQUIRED FOR THE ONLINE CERTIFICATE. ALL CREDITS MAY BE APPLIED TO THE MA TESOL WITHIN 5 YEARS OF TAKING THE FIRST COURSE.

MA IN CURRICULUM AND INSTRUCTION: LITERACY - 33 CREDIT HOURS

The Curriculum and Instruction Department recently received approval for the Master of Arts in Curriculum and Instruction: Literacy. The program revision will encompass emphasis in both reading and writing. The program will include core foundation courses that are college-wide offerings and courses that are specific graduate-level in literacy. In addition, we plan to offer a "tiered" program in which MA students could continue, if desired, their coursework and receive Reading Teacher and Reading Specialist endorsements from the state.

Application and Admissions Requirements
Please visit our website for admissions information.

Required Courses

Core Content - 12 Credit Hours

- CURR 5000 - Foundations: History and Research in Curriculum Studies (Prerequisite for all coursework)
- CURR 5002 - Issues, Strategies, and Models in Curriculum Design (Prerequisite for CURR 5090)
- LEAD 5700 - Introduction to Research and Statistics (Prerequisite for CURR 5090)
- CURR 5090 - Master's Research Project (Final course in program)

Literacy Content - 21 Credit Hours

- CURR 5702 - Literacy for All Learners
- CURR 5411 - Psycholinguistics and Reading (Psycholinguistics and Reading)
- CURR 5415 - Foundations of Literacy: Theories and Models
- CURR 5401 - Teaching Reading in the Elementary School
- CURR 5414 - Literacy Assessment, Diagnosis and Evaluation **or**
  CURR 5410 - Informal Diagnostic and Remedial Techniques of Reading
- CURR 5420 - Children's and Adolescents' Literature

- CURR 5400 - Teaching Reading and Writing in Content Areas

Reading Teacher Endorsement

Requires two years of teaching experience and M.A. in Reading/Literacy.

PLACE test for Reading Teacher required upon completion of coursework to add endorsement.

- CURR 5430 CURR 5430 - Reading Clinical Procedures I (Elementary) **or**
- CURR 5431 CURR 5431 - Reading Clinic Procedures II (Secondary) **or**
- CURR 5432 CURR 5432 - Supervised Practicum in Reading: Elementary **or**
- CURR 5433 CURR 5433 - Supervised Practicum in Reading: Secondary

MA IN CURRICULUM AND INSTRUCTION - SPACE STUDIES/SCIENCE EDUCATION

The MA program in Space Studies and Science Education is designed primarily for teachers who wish to improve their science teaching skills or become leaders in the field of science and space education. It is appropriate for teachers at all levels (K-12) who wish to learn more about applying contemporary science teaching strategies in their schools.

The program is designed to provide classroom teachers with a sound background in current space studies, science education research, theory, standards, and practice. Emphasis is placed on utilization of inquiry strategies, manipulative activities, and science process skills as a basis for science instruction. Teachers completing this program will be prepared to: teach science in a self-contained setting, serve as science teachers for schools utilizing departmentalization, serve as science resource teachers at the school or district level, or pursue an advanced degree in science education.

Note: This program is not designed to lead to teacher licensure.

Also available is a Master of Science degree in Curriculum & Instruction with a Space Studies emphasis.

Application and Admissions Requirements
Please visit our website for admissions information.

Required Courses

The Science Education program requires a total of 30 semester hours of coursework and completion of a research project as part of CURR 5090. A thesis option is available but not required.

Note: Students should consult with their program advisor to assure that courses selected are appropriate for credit in the Science Education program.

Science Education - 9 Credit Hours
Includes core courses required by the Curriculum & Instruction degree.

Science content and method courses offered through the College of Education.

Space Foundation Courses - 15 Credit Hours
Offered by the Space Foundation through the Online and Academic Outreach division.

Education - 9 Credit Hours

- LEAD 5600 - Social Foundations of Education Trends
- LEAD 5700 - Introduction to Research and Statistics
- CURR 5090 - Master's Research Project

Offerings

In an attempt to serve our students and our community, the UCCS College of Education offers a specialty in Space Studies as part of its well established Science Education Program. This program is offered by the University of Colorado at Colorado Springs in collaboration with the Space Foundation. Space Studies courses are offered through the UCCS Extended Education Program. All other courses are offered through the UCCS College of Education.

The program includes classes in Space Studies, Science Education, and Educational Curriculum. A total of 33 course hours are required to complete the C&I Masters, Space Studies in Science Education. Comprehensive Exams are not required; however, students will complete a science education research project as part of the Research Project course CURR 5090.

All courses are offered spring, summer and fall terms at times conveniently designed to fit into the schedule of classroom teachers. Students may work on coursework throughout the year in courses offered by the UCCS College of Education.

MA IN CURRICULUM AND INSTRUCTION-SCIENCE EDUCATION

The program in Science Education is designed primarily for teachers who wish to improve their science teaching skills or become leaders in the field of science education. It is appropriate for teachers at all levels (K-12) who wish to learn more about applying contemporary science teaching strategies in their schools.

The program is designed to provide classroom teachers with a sound background in current science education research, theory, standards, and practice. Emphasis is placed on utilization of inquiry strategies, manipulative activities, and science process skills as a basis for science instruction. Teachers completing this program will be prepared to: teach science in a self-contained setting, serve as science teachers for schools utilizing departmentalization, serve as science resource teachers at the school or district level, or pursue an advanced degree in science education.

Note: This program is not designed to lead to teacher licensure.

Application and Admissions Requirements
Please visit our website for admissions information.

Required Courses

Science Education - 12-18 Credit Hours
Science Methodology courses offered through the College of Education.

Education - 12-18 Credit Hours
Includes core courses required by the Curriculum and Instruction (C&I), M.A. degree:

- LEAD 5600 - Social Foundations of Education Trends
- LEAD 5700 - Introduction to Research and Statistics

- CURR 5090 - Master's Research Project

Letters, Arts, and Sciences or Space Studies Courses - 0-6 Credit Hours
Includes Space Studies courses, LAS graduate courses, and a limited number of 3000 and 4000 level LAS courses.

Note: Students should consult with their program advisor to assure that courses selected are appropriate for credit in the Science Education program.

Offerings

The Curriculum and Instruction Masters degree specializing in Science Education can be completed in only 30 hours. Schedules are designed to meet the needs of busy teachers.

Science Education courses are offered spring, summer, and fall terms. Students may work on coursework throughout the year in courses offered by the UCCS College of Education.

During the Fall and Spring semesters, most courses are offered in the evening to accommodate the schedules of working teachers.

CURRICULUM AND INSTRUCTION, MSC, SCIENCE TEACHING

The Master of Sciences is an interdepartmental degree involving the College of Education and other colleges on the campus. The Space Studies/Science Teaching option is designed for teachers aspiring to pursue a degree with greater emphasis on science content and less emphasis on pedagogy. The Space Studies/Science Teaching option includes Science Education courses as well as science, space studies, mathematics, and selected other content courses. The program is designed to provide classroom teachers with a strong background in science content balanced with knowledge of contemporary science teaching practice, and the sound application of research.

The Space Studies/Science Teaching option allows teachers to gain specialized knowledge related to various aspects of space. Space studies courses are available on a wide variety of topics including: earth systems, rocketry, biology, living in space, physics, geology, astronomy, and technology. While these courses have a strong content focus, they also emphasize creative use of inquiry strategies, manipulative activities, and science process skills as a basis for science instruction. The program is designed primarily for teachers who wish to improve their content knowledge of space and related science fields. The program is appropriate for teachers at all levels (K-12) who wish to become leaders in the field of space studies.

Note: This program is not designed to lead to teacher licensure.

Application and Admissions Requirements
Please visit our website for admissions information.

REQUIRED COURSES

Science Education, 12-18 Credit Hours
Science Methodology courses offered through the College of Education

Education, 12-18 Credit Hours
Includes core courses required by the Curriculum and Instruction (C&I), MA degree:

- LEAD 5600 - Social Foundations of Education Trends
- LEAD 5700 - Introduction to Research and Statistics
- CURR 5090 - Master's Research Project

Letters, Arts, and Sciences or Space Studies Courses, 0-6 Credit Hours
Includes Space Studies courses, LAS graduate courses, and a limited number of 3000- and 4000-level LAS courses

Note: Students should consult with their program advisor to assure that courses selected are appropriate for credit in the Science Education program.

OFFERINGS

The MSc in Curriculum and Instruction specializing in Science Education can be completed in only 30 credit hours. Schedules are designed to meet the needs of busy teachers.

Science Education courses are offered spring, summer, and fall terms. Students may work on coursework throughout the year in courses offered by the UCCS College of Education.

During the Fall and Spring semesters, most courses are offered in the evening to accommodate the schedules of working teachers.

ENDORSEMENTS AND CERTIFICATES

GIFTED AND TALENTED SPECIALIST ENDORSEMENT

This 26 credit-hour endorsement prepares teachers at all levels to enhance their teaching methodologies in Gifted & Talented education. The Endorsement will require 3 credit hours of practicum work. Optionally, these courses may be applied to a 32 credit-hour General Master of Arts Degree in Curriculum & Instruction.

All courses are offered in a convenient online format. Students may apply for the program and enroll on a rolling basis and begin classes in the semester following acceptance.

Upon completion of the endorsement and practicum credits, students are required to pass the approved PLACE exam prior to licensing.

Application and Admissions Requirements
Please visit our website for admissions information.

Required Coursework - 26 Credit Hours

- CURR 5201 - Foundations of Gifted Education
- CURR 5202 - Assessment and Identification of Gifted and Talented Students
- CURR 5203 - Psychology of the Gifted: Social, Emotional Needs, and Special Populations
- CURR 5206 - Creativity in Gifted Education
- CURR 5211 - Curriculum Models and Aligned Programming for Gifted Students
- CURR 5214 - Differentiated Instruction and Research-based Strategies for Teaching the Gifted
- CURR 5215 - Gifted Program Leadership
- CURR 5230 - Gifted and Talented Practicum

Open Enrollment Recertification Courses

The three open enrollment recertification courses listed below are NOT required for this endorsement and do not require application to the graduate school in order to enroll. The courses are designed to meet specific needs of some GT educators. These courses may be taken in lieu of some required GT courses based on departmental approval.

- CURR 5204 - Under-Identified and Under-Served: Giftedness in Poverty and Culturally Diverse Backgrounds
- CURR 5205 - Early Childhood Gifted Education
- CURR 5207 - Under-identified and Under-served: Gifted Girls

IT ONLINE CERTIFICATE PROGRAM

This online certificate prepares teachers at all levels to use technology to enhance their teaching methodologies and reach the next generation of learners, who expect to learn using technology. The program consists of 12 credit hours, all of which are offered online. All courses are offered in a convenient online format and will transfer into our Online Master of Arts Degree in Curriculum and Instruction.

For more information, please visit our website.

TESL/TEFL CERTIFICATE PROGRAM

The Teaching English as a Second/Foreign Language (TESL/TEFL) Certificate Program consists of four core courses that will give you the foundation and knowledge necessary to work with ELLs. These four courses can be applied toward the 24 credit hour Culturally Linguistically Diverse Education Endorsement (CLDE) endorsement and MA Teaching English to Speakers of Other Languages (MA TESOL) program.

For more information, please visit our website.

EDUCATION PROGRAMS OF STUDY

Department/Program	Licensure- TELP*, ALP**, and SELP***	Endorsement	Minor	Bachelor of Arts	Master of Arts	Master of Science	Doctor of Philosophy
Counseling & Human Services	School/community counseling licensure: graduate program		Minor		**MA**		
Curriculum & Instruction		Reading endorsement at graduate level			**MA**	**MSc**	

Educational Leadership, Research, & Foundations	Principal Administrator				**MA**		**PhD**
Elementary Education	Undergrad and graduate licensure						
Inclusive Early Childhood Education				**BI**			
Inclusive Elementary Education				**BA**			
Linguistically Diverse Education (LDE)	Undergrad and graduate licensure						
Secondary Education	Undergrad and graduate licensure						
Special Education	Undergrad and graduate licensure	Studies, Spanish endorsement at the graduate level			MA		

* Teacher Education and Licensure Program (TELP)-Professional Licensure through the TELP requires two semesters of study plus one summer session and may be included as a part of a four-year degree program in the College of Letters, Arts and Sciences, or may be pursued after a Bachelor of Arts has been earned in a liberal arts program.

** Alternative Licensure Program (ALP) teacher licensure-Professional Licensure through the Alternative Licensure Program requires three semesters of study plus one summer session and may be pursued only after a Bachelor of Arts degree has been earned.

*** Special Education Licensure Program (SELP) teacher licensure-Professional Licensure through the undergraduate SELP allows all undergraduate teacher candidates to complete a content major within LAS and the generalist licensure area in special education in four years (124 credit hours); graduate students can receive their generalist special education licensure after completing 43 semester hours, and their Master's of Arts in Special Education upon completion of an additional 9 credit hours.

College of Engineering and Applied Science

GENERAL INFORMATION

R. Dandapani, Dean
Engineering Building
(719) 255-3543
Fax: (719) 255-3542
http://eas.uccs.edu

Engineering is the application of scientific theories and resources of nature for the benefit of humanity.

Computer science provides the essential computational and process control tools for nearly every aspect of modern society. Computer engineering offers a mixture of computer science and electrical engineering. The disciplines of computer science, computer engineering, electrical engineering, and mechanical engineering all require a significant study in mathematics. Graduates of these four disciplines work primarily in technical careers, either public or private, but some also become teachers, managers, or entrepreneurs with their own businesses.

The prospective computer scientist or engineer should appreciate mathematics and have a keen interest in science and its methods. The ability to express ideas in both written and verbal form is of primary importance. The ability to understand problems and produce creative and innovative solutions is also a necessary prerequisite. Personal qualities such as initiative, energy, willingness to take responsibility, reliability, honesty, good judgment, understanding diversity, the ability to work and cooperate with others, and the perseverance to work through to the conclusion of an assignment are important. Obviously, the fundamentals of sound citizenship are necessary in any profession.

Employment demand for computer scientists, computer engineers, electrical engineers, and mechanical engineers is expected to grow faster than the average of all professions well into this century. Abundant opportunities will present themselves to graduates of these disciplines, in both public and private laboratories, in industry, and in commercial enterprises.

Financial rewards to be earned compare favorably with those of other professions; however, no one should enter any profession solely for monetary rewards. Rather, the dominant consideration should be the opportunity to use a lifetime for the advancement of society and the consequent personal satisfactions and enjoyment.

MISSION

In partnership with the community and our alumni, the mission of the College of Engineering and Applied Science is to:

- **Illuminate:** Inspiring a passion in our students for lifelong learning and graduating engineers and scientists who are knowledgeable and competitive in the global marketplace throughout their careers
- **Investigate:** Conducting recognized and relevant research that has both local and global impact
- **Innovate:** Engaging in leadership, service, economic and technology development that improves health, welfare, and prosperity through engineering.

ACADEMIC ADVISING

Undergraduate
Academic Advising
Main Hall 208
(719) 255-3260

Graduate
Please refer to the appropriate degree program within EAS for information regarding academic advising.

ACADEMIC PROGRAMS

The undergraduate and graduate programs available for completion through the University of Colorado Colorado Springs are listed in more detail in the Programs of Study table at the end of this chapter.

Majors which may be completed in the College of Engineering and Applied Science at UCCS include Computer Engineering, Computer Science (BS and BI), Electrical Engineering (BS and BI), Engineering Education, Mechanical Engineering, Computer Science: Security, and Game Design and Development (GDD)

Generally, two years of work toward the following degrees from the College of Engineering and Applied Science may be taken on this campus: Architectural Engineering, Chemical Engineering, Civil Engineering, and Engineering Physics

Departments within the College of Engineering and Applied Science (EAS) include the Department of Computer Science (CS), the Department of Electrical and Computer Engineering (ECE), and the Department of Mechanical and Aerospace Engineering (MAE).

LABORATORY FACILITIES, RESEARCH CENTERS, AND SPECIAL PROGRAMS

COMPUTER SCIENCE

The Computer Science Department laboratories provide students (of all majors) with access to the latest programs in support of their degrees. The well-equipped laboratories contain a wide variety of computing resources supporting both graduate and undergraduate classes. Several other research labs are located in the Engineering building to assist faculty and students with various research projects.

ELECTRICAL AND COMPUTER ENGINEERING

The Electrical and Computer Engineering Department has a wide variety of laboratories to enhance the learning of undergraduate and graduate students in their education and research. Using state-of-the-art laboratory and research technologies, students learn with hands-on experience using the Electrical and Computer Engineering Laboratories: Communication and Signal Processing Laboratory (CSPL), Control-Systems Laboratory (CSL),

Electromagnetic Laboratory (EML), Electronics Laboratory (ECL), and Microelectronics Research Laboratory (MRL).

MECHANICAL AND AEROSPACE ENGINEERING

The Mechanical and Aerospace Engineering Department maintains a variety of essential labs for undergraduate and graduate education and research. Students learn with hands-on experience using the Fluid Dynamics Laboratory, Heat and Mass Transfer Laboratory, MechEtronics Laboratory, the Materials Laboratory, and the state of the art Instrumentation Measurements Laboratory. The Center for Laser, Energy and Exploration Research (CLEER) is collaboration with researchers from various departments and outside institutions. CLEER houses a variety of research laboratories performing cutting-edge research in laser, energy and exploration technologies.

PROJECT LEAD THE WAY

UCCS is the Colorado Affiliate University for Project Lead The Way (PLTW), a national pre-engineering curriculum serving a pipeline of elementary to high school students. The College of EAS grants college credit for qualified high school students enrolled in PLTW courses from certified high schools. (See detailed information in Undergraduate Transfer Credit.) For more information on PLTW visit http://pltw.uccs.edu.

EAS GENERAL ACADEMIC POLICIES

ADVISING

Undergraduate
All undergraduate students in the College of Engineering must meet with their faculty advisor prior to registering for fall or spring semesters. Students will be advised by faculty advisors or in a group advising session within their respective departments. Academic Advisors are available throughout the year in the Academic Advising Center, Main Hall 208. If you do not know who your advisor is or would like advising, contact the Academic Advising Center at (719) 255-3260.

Graduate
Please refer to the appropriate degree program in the Catalog for information regarding academic advising.

EAS INSTRUCTIONAL FEES

The College of EAS collects a college-wide EAS instructional fee (EAS IF). The fee structure for academic year 2016-2017 is $15 per EAS credit hour with a maximum of $180 per student per semester. This applies to all courses offered in the College of EAS with the exception of graduate thesis courses. There are no additional fees levied within the College. The fee is nonrefundable.

The purpose of the fee is to assist the College in providing exceptionally high-quality instruction, including but not limited to, the following:

- Support for instructional labs and smart classrooms managed by the College of EAS
- Support for the College IT network and servers
- College or departmental help centers or instructional supplements provided by students for students, and students run mentoring programs.
- Support for career placement services that are specific to EAS, such as mock interviews with technology companies.

GRADING POLICIES

Consult the Academic Policies, Registration, and Records section of this Catalog for more information.

Incomplete Courses

An incomplete may be given by the instructor (subject to approval by the appropriate department chair/EAS Dean) for circumstances beyond the student's control, such as a documented medical or personal emergency. When it is given, the student is informed in writing by the instructor of what the student is to do in order to remove the incomplete and when the tasks are to be completed. The instructor may assign only the IF grade. The student is expected to complete the course requirements, e.g. the final examination, term paper, etc., within the established deadline and not to retake the entire course. The grade will be converted automatically to a grade of F after one year unless the specified work is completed.

No-Credit Courses

Students who register NC (no credit) are expected to attend classes and take all examinations but receive no credit. In the College of Engineering and Applied Science, students may not register NC for a required course, or change registration to NC in any course, except by petition to the chair/dean. If the student does failing work, the chair/dean may request the Office of Admissions and Records to change the registration from NC to credit, whereupon the student will receive a grade of F. A course previously taken for NC may not be retaken for credit to apply toward an undergraduate or graduate degree awarded by the College of Engineering and Applied Science. Engineering courses completed for NC by students not admitted to the College of Engineering and Applied Science may not be taken again for credit after transferring to the college.

Pass/Fail Option

The primary purpose for offering courses in which undergraduates may be graded pass or fail (PF) rather than A, B, C, D, or F is to encourage undergraduate students to broaden their educational experience by electing challenging courses without serious risk that their academic records might be jeopardized. Not more than one course per semester or summer session may be taken PF. Courses which a student may elect to be taken PF shall be designated by the major department. A student who has not designated a major field will not be allowed the PF option. In the College of Engineering and Applied Science only social sciences/humanities courses at the 300 level or above may be taken PF. The maximum number of PF hours counting toward graduation shall not exceed 16 credit hours, including courses taken in the Honors Program under the program's PF grading system. A transfer student may count toward graduation 1 credit hour of PF courses for each 9 credit hours completed in the college.

GRADUATION REQUIREMENTS

Bachelor's Degree

To be eligible to graduate with Bachelor's degrees from the College of Engineering and Applied Science, students must meet the following minimum requirements:

- The final 30 hours of course work must be completed exclusively at UCCS and admitted to the College of Engineering and Applied Science. Complete all required coursework with a major GPA of 2.0 or higher.
- Earn at least a 2.0 CU cumulative GPA for graduation.
- Demonstrate writing competency as outlined in the Academic Policies, Registration, and Records section of this Catalog.
- Fulfill all MAPS requirements before graduation (two years high school or two college semesters of the same foreign language).

- Satisfactorily complete the prescribed degree curriculum requirements as outlined by the specific department section below.

Students must complete a Senior Audit with their Academic Advisor the semester before they plan to graduate. It is the student's responsibility to keep the Engineering Academic Advisor informed of any changes in their plan throughout the senior year. The Department Chair must approve any deviation from departmental degree requirements by petition, in advance. Petition forms may be obtained from Academic Advising or the appropriate department.

Graduate Degrees
Please refer to the appropriate College of Engineering and Applied Science degree programs.

EAS UNDERGRADUATE PROGRAM POLICIES

UNDERGRADUATE ADMISSION PROCEDURES

The Catalog that governs a student's graduation requirements is the one in effect at the time of a student's most recent admission into the college of the student's degree program. The college seeks to identify applicants having a high probability of successful completion of their academic programs. Admissions is based on evaluation of many criteria; among the most important are the general level of academic performance before admissions to the college and other evidence of motivation, potential, scholarly ability, and accomplishment by College Board scores, by letters of recommendation from teachers and others qualified to evaluate the student, by accomplishments outside academic work, and by other relevant evidence.

FRESHMEN

In order to enroll in engineering courses, the student must be admitted to the College of Engineering and Applied Science, in addition to the University, as described in the Admissions section of this Catalog.

Admission Requirements

- Rank in the upper 30th percentile of their high school graduating class
- ACT composite score of 25 or above or an SAT composite score of 1120 or above

Students who meet these requirements are assured admission to the College.

Expected High School Coursework

- English: 4 course units
- Math: 4 course units; at least two years algebra, one year geometry, one year advanced math
- Natural Science: 3 course units; one year physics, one year chemistry
- Social Science: 2 course units; government, history, economics, psychology, sociology
- Foreign language: 2 course units, all in a single language
- Academic electives: 1 course unit

Students successfully completing three Project Lead The Way (PLTW) courses with a "B" average (two Foundation and one specialization course) and meeting the above criteria will be granted preferred admission for the following majors: Computer Engineering, Electrical Engineering, Engineering Education, and Mechanical Engineering. [Foundation courses: Introduction to Engineering Design, Principles of Engineering]

MAPS

Incoming students should insure that they are completing the Minimum Academic Preparation Standards (MAPS) for Engineering and Applied Science, as outlined in the Admissions section of this Catalog. Beginning students in engineering or computer science must be prepared to start analytic geometry- calculus. (Courses will be offered to allow a student to make up deficiencies; however, no credit toward a degree will be given for algebra or trigonometry.) In order to be prepared for the type of mathematics courses that will be taught, the student must be competent in the basic ideas and skills of ordinary algebra, geometry, and plane trigonometry.

These include such topics as the fundamental operations with algebraic expressions, exponents and radicals, fractions, simple factoring, solution of linear and quadratic equations, graphical representation, simple systems of equations, complex numbers, the binomial theorem, arithmetic and geometric progressions, logarithms, the trigonometric functions and their use in triangle solving and simple applications, and the standard theorems of geometry.

It is estimated that it will usually take seven semesters to cover this material adequately in high school. Freshman must complete a mathematics placement test to ensure that they begin the correct mathematics course based on their abilities.

TRANSFER STUDENTS

Students transferring into the College must have completed at least 13 semester hours and have a cumulative GPA of at least 3.3, including completion of Calculus I. Students completing 30 semester hours must have a cumulative GPA of at least 3.0 before being admitted into their major, including courses equivalent to MATH 1350, MATH 1360, and either CHEM 1401/CHEM 1402 or PES 1110. All math courses must be completed with a score of "B" or better for admission into the College. The student should understand that engineering degree requirements differ from one campus to another-from course selection to the number of credit hours required for the degree. An official transcript evaluation will be provided when you attend New Student Orientation.

Intra-University Transfer Students

Students from other colleges at UCCS may transfer into the College of Engineering and Applied Science. Students transferring into the College must have completed at least 13 semester hours at UCCS and have a cumulative CU GPA of at least 3.3, including completion of Calculus I. Students completing 30 semester hours must have a cumulative GPA of at least 3.0 at UCCS before being admitted into their major, including MATH 1350, MATH 1360, and either CHEM 1401/CHEM 1402 or PES 1110. All math courses must be completed with a score of "B" or better for admission into the College.

Intra-University Transfer guidelines for the BI in Electrical Engineering are the same as for the BS in Electrical Engineering.

Intra-University Transfer guidelines for the BI in Computer Science, Computer Security, and Game Design and Development are as follows:

a. A student must complete at least 15 credit hours in LAS with a cumulative GPA of 2.0 or better, AND each course in their intended major, in the Innovation core, and in math must be completed with a grade of "C" or better, AND they must have the explicit approval of an EAS faculty advisor in their intended major in order to transfer into the College of EAS.

b. A student may transfer into the College of EAS in a BI major without the explicit approval of an EAS faculty advisor in their major if they complete at least 15 credit hours in LAS with a cumulative GPA of 3.0 or better,

AND each course in their intended major, in the Innovation core, and in math is completed with a grade of "B" or better.

UNCLASSIFIED/NON-DEGREE SEEKING STUDENTS

Persons who have been admitted to the university in the category of unclassified/non-degree seeking students may be permitted to register for courses in the College of Engineering and Applied Science upon approval subject to the availability of space in classes. Unclassified students should be aware of the College of Engineering and Applied Science rule that at least the last 30 semester hours must be earned in degree status in the College of Engineering and Applied Science in order to apply toward an engineering degree. A maximum of 12 semester hours of credit earned while in unclassified student status may be carried toward an undergraduate degree at the University of Colorado. High school concurrent students may exceed this 12-hour rule for unclassified students.

MINORS

Non-major students interested in declaring an Engineering minor must apply to the appropriate department. Applications and general eligibility information can be obtained from your Academic Advisor.

UNDERGRADUATE ACADEMIC POLICIES

SPECIAL SOURCES OF CREDIT

Advanced Placement
Advanced placement and college credit may be granted on the basis of the College Entrance Examination Board's Advanced Placement Tests or by special examinations administered by the department involved. For students who have taken an advanced placement course in high school and who make scores of 4 or 5 in the CEEB Advanced Placement Test, advanced placement as well as college credit will be granted (outlined in Advanced Placement Program in the Admissions section of this Catalog).

Project Lead The Way Course Credit
EAS grants college credit for high school students enrolled in Project Lead The Way (PLTW) courses from certified high schools. UCCS is the Colorado Affiliate University for PLTW, a national pre-engineering curriculum serving a pipeline of elementary to high school students. UCCS transcript credits can be earned for three PLTW courses offered by the EAS College: Principles of Engineering, Introduction to Engineering Design, and Digital Electronics. High school students must currently be enrolled and complete the PLTW course to register for the UCCS credit during the enrollment period (spring semester). A number of direct course replacements toward a BS degree from UCCS are possible; please visit the website at http://pltw.uccs.edu, or check with the PLTW office at (719) 255-3498 for the most current listing.

Additional credits may count as general credits toward a degree from the college. For further information contact the PLTW office at (719) 255-3498.

Transfer Credit Acceptance
Students desiring to transfer credits from engineering technology programs should note that such credits are accepted only upon the submission of evidence that the work involved was fully equivalent to that offered in this college.

Some technology courses are given with titles and textbooks identical to those of some engineering courses. These may still not be equivalent to engineering courses because of an emphasis that is nonmathematical or otherwise divergent.

In order to assist engineering technology students with transfer problems, the following guidelines have been established:

- Courses on basic subjects such as mathematics, physics, literature, or history 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 technology students.
- Students who have taken technology courses (courses with technology designations) that may be valid equivalents for engineering courses have these options:
  1. Students may petition the appropriate Department Chair to waive the course. The requirement for a course can be waived if a student demonstrates that by previous course work, individual study, or work experience he/she has acquired the background and training normally provided by the course. No credit is given toward graduation for a waived course, but a strong student may benefit from the waiver by being able to include more advanced work later in his or her curriculum. Other students may profit by taking the course at this college instead and thus establishing a fully sound basis for what follows
  2. Credit for a course may be given if the course work was done at an accredited institution of higher education. The University of Colorado department involved may recommend that credit be transferred to count toward the requirements for a related course in its curriculum. Credit cannot be given for vocational technical or remedial courses under rules of the University. (See the Admissions section of this Catalog on transfer of college-level credit.)
  3. Students may seek credit for the course by examination. See Advanced Placement and College Level (CLEP) Credit.

Transfer Credit Decisions

After a prospective transfer student has been admitted and submitted transcripts to UCCS, the Office of Admissions and Records issues an initial transfer credit evaluation, listing those courses that are acceptable by University standards for transfer. The next step is for the student to sign up for New Student Orientation, at which they will receive their official transcript evaluation to see how their courses transferred into UCCS and how they apply to the Engineering degree they are pursuing. If at any time a student wishes to have a course not previously accepted considered again for transfer, the student should consult with the Engineering Academic Advisor.

UCCS has established articulation agreements with all two year colleges in Colorado. For students from such a college, the transfer process to UCCS will be easier. It is, therefore, beneficial for students from two-year colleges in Colorado to check with their administration to see what courses will transfer.

ROTC Credit

Credit from courses completed in the ROTC program will not apply toward fulfillment of the requirements for degrees in Mechanical Engineering or Electrical Engineering. A maximum of 5 semester hours of work from the ROTC program may be applied toward the BS in Computer Science or three (3) hours of work may be applied toward the BS in Computer Engineering.

Work Experience

It is the policy of the College of Engineering and Applied Science at UCCS that any credits accrued in the official records of the student that were awarded for work experience will not apply as part of the total hours required for an engineering degree in the College.

UNDERGRADUATE ACADEMIC PROGRESS

Satisfactory Progress

To remain in good academic standing, undergraduate students must maintain a cumulative CU grade point average of 2.0 or better in hours taken.

Academic Probation and Suspension Policy

Engineering students at the University of Colorado are placed on probation for the next semester in which they are enrolled in the College of Engineering and Applied Science if their cumulative CU Grade Point Average (GPA) falls below a 2.000 or if the EAS academic review board consisting of faculty and staff appointed by the Dean of EAS determines insufficient academic progress is being made by the student. The CU GPA includes all courses taken at a CU campus. If, after that semester; the following semester or cumulative GPA is still below 2.0, or the academic review committee determines the student has made insufficient academic progress, the student will be suspended from the college.

While on probation, you will not be released to register for the next semester (excluding summer) until your current semester grades have been posted. However, you must still see your faculty advisor to get the "Required Advising" hold released. You may continue to take a normal course load while on probation, but you should plan your schedule carefully. We recommend that you take no more than 12-13 hours of classes for the semester(s) following your probation.

Students who have been suspended from the College of Engineering and Applied Science cannot register for courses at the University (except for summer sessions, correspondence courses or online and academic outreach classes) unless the suspension has been lifted or they transfer to another college at the university. Suspended students may apply to transfer to another college within the university and, if approved, take courses in the new major. Students on academic probation or suspension in the College of Engineering who wish to apply for an Intra-University Transfer are **NOT** guaranteed admission. Students are only admitted with special approval from the Office of the Dean. Requests are viewed on a case-by-case basis. Students are responsible for knowing whether or not they are under a current suspension.

Students who have been suspended may apply for re-admission to the College of Engineering once they have raised their cumulative CU GPA to 2.000. Suspended students must apply to have their suspension removed (after meeting the above requirement) with their Engineering Academic Advisor. In addition, students may be required to reapply to the University.

Students who are in doubt about their standing with regard to scholastic deficiency are strongly urged to consult with the Engineering Academic Advisor.

Student Rights

The following rights should be afforded to all students prior to academic suspension.

1. **To be informed of policies:** The student has the right to be informed of the Academic Probation and Suspension Policies upon entering the College. A copy of the policy set forth by the College of Engineering and Applied Science is in the University Catalog, which can be found online.
2. **To be informed of status:** The student has the right to be informed of his/her status regarding academic probation or suspension. Each student is notified in writing when he/she fails to make academic progress.
3. **To confidentiality:** The student has the right to confidentiality throughout the probationary period. Probationary status is currently not indicated on official university transcripts.

4. **To an appeal:** In all cases students may appeal their case in writing to the Office of the Dean of the College of Engineering and Applied Science.

COURSE LOAD

Full-Time Students and Overload Approval
Students should register for the regular course load as outlined by their advisor. Students may register for 18 hours or less without approval. Permission to take more than 18 semester hours may be granted only after approval, using an Overload Approval Form, submitted to the Engineering Academic Advisor (for 19-21 hours) or the chair of the appropriate department (for over 21 hours). Students must have a 2.5 or better cumulative CU GPA to apply for an overload. The forms can be obtained from the Academic Advising Center, Main Hall 208.

Employed Students Course Load Guidelines
Course load guidelines for students employed ten or more hours per week are as follows:

Employed 40 or more hrs/wk (max. 9 sem. hrs)	2 courses
Employed 30 to 39 hrs/wk (max. 12 sem. hrs)	3 courses
Employed 20 to 29 hrs/wk (max. 15 sem. hrs)	4 courses
Employed 10 to 19 hrs/wk (max. 18 sem. hrs)	5 courses

The above guidelines result from the experience of those who are both employed and in school. We recommend you visit with your Academic advisor to discuss your degree plan.

UNDERGRADUATE ACADEMIC REQUIREMENTS

COMMON EAS CORE

The College of Engineering and Applied Science has implemented a Common EAS Core for entering freshmen students. This is a set of courses in English, science, mathematics, the humanities, and social sciences that count towards the Bachelor of Science degrees offered by the College. For the Bachelor of Innovation degrees, please consult with the Engineering Academic Advisor or visit the BI website at: innovation.uccs.edu/. The curriculum of the Common EAS Core provides the students with the necessary foundation for pursuing their education career in the College and at the same time allows a change of major within the College to occur during the freshman year with minimum loss of credit or delay in graduation.

The Common EAS Core consists of the following courses:

MATH 1350	4 credits
MATH 1360	4 credits
PES 1110	4 credits
PES 1120	4 credits
ENGL 1310	3 credits
Humanities/Social Science Electives	6 credits
GPS 1010	3 credits

Students Planning to Transfer to Another School for Their Degree
The College of Engineering and Applied Science has developed a series of courses at the freshman and sophomore level that meet the requirements for some engineering disciplines at most accredited universities throughout the country. Our advising will follow these generally accepted guidelines. Since curricula will vary slightly from time to time and place to place, students should check with the college/university to which they plan to transfer to verify their UCCS coursework will transfer in its entirety.

EAS GRADUATE PROGRAMS

The College offers Master of Science degrees in Computer Science, Electrical, and Mechanical Engineering (refer to corresponding departments for details). The College also offers Master of Engineering degrees in Software Engineering and Information Assurance (CS Dept.), as well as Master of Engineering degrees in Energy Engineering, Engineering Management, Systems Engineering, and Space Operations, which are administered by the EAS College directly. Additionally the EAS College offers graduate certificates in Engineering Management, Systems Engineering, and Space Operations.

Also offered is a Doctor of Philosophy degree in Engineering, with optional concentrations in Computer Science, Electrical Engineering, Mechanical and Aerospace Engineering, and Security.

ADMISSION PROCEDURES – MASTER'S DEGREE

Every prospective graduate student should consult the graduate student advisor in the respective departments at the College of EAS at UCCS prior to submitting an application for admission to the Graduate School. Students wishing to take graduate courses without formally enrolling as graduate students may enroll in the Unclassified/Non-Degree Seeking student category described in the Admissions section of this Catalog.

Guaranteed Early Admissions
Students who are seniors in any of the undergraduate programs in the College of EAS at UCCS may be eligible for guaranteed and simplified admission to the graduate programs. Contact the appropriate graduate degree program director for more details.

Regular Admission
Students having an overall undergraduate GPA of 3.0 or better (on a 4.0 scale) in all college-level academic work attempted are normally admitted to regular degree status.

Provisional Admission
See individual programs for details.

GENERAL REQUIREMENTS

Credit hours: A total of 30 semester hours of graduate course work is required.

Grades: An overall 3.0 grade point average is required in all graduate work.

Thesis or Non-Thesis: The student must select either a Thesis (Plan I) or Non-Thesis (Plan II) option. Plan I requires a thesis worth from 4 to 6 semester hours of credit. Plan II requires a 3 semester hour project. In both cases, an oral presentation and defense is required, which is open to the public and which can include questions over all work presented for the degree.

Time Limit: All work applied to the degree must be accomplished within a six-year time limit.

Advising: Students are advised by the chair of the graduate studies committee during their first semester. A student must choose an advisor by the time 12 credit hours have been completed.

Plan of Study: All courses included to count for this degree must be part of an approved plan of study. This plan must be developed by the student and approved by his/her advisor (appointed by the department) within the first semester after being admitted to the program.

EAS GRADUATE CERTIFICATES

The College of Engineering and Applied Science offers Graduate Certificates in Engineering Management, Systems Engineering, and Space Operations to qualified students. The programs have been designed to provide employees of engineering companies and space related industries with an opportunity to enhance their knowledge and skills. These potential students may not wish to pursue an in-depth rigorous Master of Engineering program but nonetheless desire to increase their professional capability and enhance career advancement opportunities.

ENGINEERING MANAGEMENT CERTIFICATE

The College of Engineering and Applied Science offers a Graduate Certificate in Engineering Management to qualified students. The program has been designed to provide employees of engineering companies with an opportunity to build on their technical education foundation. These potential students may not wish to pursue an in-depth rigorous Master of Engineering program but nonetheless desire to increase their professional capability and enhance career advancement opportunities. All courses are offered online and can be completed entirely via distance. The certificate content is consistent with the Engineering Management Body of Knowledge developed by the American Society for Engineering Management (ASEM).

Required Prerequisite Knowledge

- Bachelor of Science (BS) degree in engineering, mathematics, physics or a closely related field from an accredited university and two years of experience in a related field.
- Undergraduate coursework in:
    - Engineering Economics
    - Statistics

Certificate Completion

A grade of B or better in each course must be achieved. Certificate courses must be completed within two (2) years from start of courses.

For more information on the Certificate or applications procedures, please contact the College of Engineering and Applied Science Distance Program Office, enonline@uccs.edu or call 719-255-3246.

Course Requirements

- EMGT 5010 - Introduction to the Systems Perspective
- EMGT 5020 - Finance and Accounting for Engineering Managers
- EMGT 5050 - Engineering Project Management
- EMGT 5510 - Leadership for Engineers

SPACE OPERATIONS CERTIFICATE

The College of Engineering and Applied Science offers a Graduate Certificate in Space Operations to qualified students. The program has been designed to provide employees of space-related industries with an opportunity

to enhance their knowledge and skills. These potential students may not wish to pursue an in-depth rigorous Master of Engineering program but nonetheless desire to increase their professional capability and enhance career advancement opportunities. All courses are offered online and can be completed entirely via distance.

Required Prerequisite Knowledge

Bachelor's degree in engineering, mathematics, physics or a closely related field from an accredited university and two years of experience working in a related field.

Evidence of mathematical maturity equivalent to completion of the following university-level coursework:

- Calculus I
- Linear Algebra
- Physics I (calculus-based)

Certificate Completion

A grade of B or better in each course must be achieved. Certificate courses must be completed within two (2) years from start of courses.

For more information on the Certificate or application procedures, please contact the College of Engineering and Applied Science Distance Program Office, enonline@uccs.edu or call 719-255-3246.

Course Requirements

- SPCE 5025 - Fundamentals of Astronautics
- SPCE 5085 - Space Communications
- SPCE 5105 - Remote Sensing in Space
- SPCE 5645 - Space Policy
- SPCE 5665 - Systems Engineering Processes

SYSTEMS ENGINEERING CERTIFICATE

The College of Engineering and Applied Science offers a Graduate Certificate in Systems Engineering to qualified students. The program has been designed to provide employees of engineering companies with an opportunity to enhance their systems engineering knowledge and skills consistent with guidelines established by the International Council on Systems Engineering (INCOSE). These potential students may not wish to pursue an in-depth rigorous Master of Engineering program but nonetheless desire to increase their professional capability and enhance career advancement opportunities. All courses are offered online and can be completed entirely via distance.

Required Prerequisite Knowledge

Bachelor of Science (BS) degree in engineering, mathematics, physics or a closely related field from an accredited university and two years of experience working in a related field.

Evidence of mathematical maturity equivalent to completion of the following university-level coursework:

- Three semesters of Calculus
- Differential Equations
- Linear Algebra

- Probability and Statistics

Certificate Completion

A grade of B or better in each course must be achieved. Certificate courses must be completed within two (2) years from start of courses.

For more information on the Certificate or application procedures, please contact the College of Engineering and Applied Science Distance Program Office, enonline@uccs.edu or call 719-255-3246.

Course Requirements

- SYSE 5010 - Introduction to the System Perspective
- SYSE 5050 - Engineering Project Management
- SYSE 5110 - Systems Engineering Processes
- SYSE 5210 - Systems Architecture

ENGINEERING, PHD

The College of Engineering and Applied Science offers the PhD in Engineering degree. The degree has its roots in the successful PhD program in Electrical Engineering offered in the College, and allows a broad range of research areas including Electrical, Mechanical, and Computer Engineering, as well as Computer Science and Security. The interdisciplinary nature of this program enables our students to devise programs of study that better suit their interests and needs.

For general information about this program, students are encouraged to contact the College Dean's Office at (719) 255-3543 or by email at dean@eas.uccs.edu.

Students interested in research areas with an emphasis in Computer Science or Security should directly contact the Department of Computer Science at (719) 255-3544.

Students interested in research areas with an emphasis in Electrical or Computer Engineering should directly contact the Department of Electrical and Computer Engineering at (719) 255-3548.

Students interested in research areas with an emphasis in Mechanical and Aerospace Engineering should directly contact the Department of Mechanical and Aerospace Engineering at (719) 255-3243.

OBJECTIVES

- The candidate must have a broad knowledge of science, math and engineering.
- The candidate must have in-depth knowledge of the specific area in which the thesis research will be conducted.
- The candidate must be able to read, understand, and evaluate professional literature on advanced topics in engineering and applied science.
- The candidate must be able to write technical reports and project documentation.
- The candidate must be able to make oral presentations of technical information.
- The candidate must demonstrate the capability to make fundamental and significant contributions in the area of engineering and applied science using basic and advanced knowledge of science, mathematics,

and engineering disciplines, along with the tools of research to perform analysis and synthesis and to visualize potential areas of application.

ENGINEERING PHD PROGRAMS

Computer Science

- Concentration in Computer Science
- Concentration in Security

Electrical and Computer Engineering

- Concentration in Electrical Engineering

Mechanical and Aerospace Engineering

- Concentration in Mechanical and Aerospace Engineering

MASTER OF ENGINEERING IN ENERGY ENGINEERING, ME ENE

The Master of Engineering - Energy Engineering is a practical graduate degree for working engineers and technical professionals tasked with developing, maintaining, and enhancing energy systems in the built environment. Available exclusively online, the ME ENE degree program can be completed entirely via distance.

ADMISSION REQUIREMENTS

The minimum requirements for regular admission into the Master of Engineering Energy Engineering program are as follows:

- Bachelor of Science degree (BS) in engineering or a related science discipline from an accredited institution.
- An undergraduate grade point average of 3.0 or higher on a scale of 4.0 in all college level academic work attempted.
- Undergraduate coursework in:
    - Engineering Economics
    - Basic Thermodynamics or Thermal Engineering
    - Introductory Fluid Mechanics
- Two or more years of experience in mechanical, industrial, civil or government engineering or technical professional position.

Students are required to request official transcripts from all academic institutions attended (including UCCS if applicable) as well as three letters of recommendation, submitted by the issuing institution or recommender.

Applicants who do not meet the requirements for regular admission may be admitted on a provisional basis subject to the recommendation of the Program Director. Currently enrolled UCCS undergraduate engineering students with exceptional academic records and previous work experience may qualify for guaranteed early admission to the graduate program. Please contact the College for more information.

DEGREE REQUIREMENTS

The ME ENE degree program consists of 30 semester hours of coursework in 9 prescribed core courses. All courses are delivered in a distance learning (online) format.

Deviations from the predefined curriculum (including requests for transfer credit) must be approved by the graduate faculty advisor and reflected in the Plan of Study. Coursework must be completed with a 3.0 GPA or better, and all coursework applied to the program (including any transfer credit) must have been completed no earlier than six years prior to degree completion.

COURSE REQUIREMENTS (30 REQUIRED HOURS)

- ENE 5020 - Introduction to Energy Management
- ENE 5030 - Introduction to Alternative Energy Systems
- ENE 5040 - Introduction to Commercial HVAC Design
- ENE 5045 - Automatic Controls
- ENE 5060 - Energy Systems I
- ENE 5065 - Energy Systems II
- ENE 5070 - Quantifying Energy Use I
- ENE 5075 - Quantifying Energy Use II
- ENE 5080 - Energy Engineering Capstone Project

Capstone Project
The ME ENE program requirements include successful completion of a capstone project. The project is administered through ENE 5080, which is part of the prescribed course sequence. ENE 5080 is a 2 semester hour course and is normally scheduled during the Summer semester. The capstone course should be the final course of the student's degree program.

MASTER OF ENGINEERING IN ENGINEERING MANAGEMENT, ME EM

The Master of Engineering-Engineering Management degree is a practical graduate degree designed to prepare early and mid-career engineers to manage and lead in 21st century technology-driven organizations. The program provides the most up-to-date concepts and skills in engineering management based on the Engineering Management Body of Knowledge developed by the American Society for Engineering Management (ASEM). Available exclusively online, the ME EM program can be completed entirely via distance.

ADMISSION REQUIREMENTS

The minimum requirements for regular admission into the Master of Engineering-Engineering Management program are as follows:

- Bachelor of Science (BS) in engineering or a related science discipline from an accredited institution.
- An undergraduate grade point average of 3.0 or higher on a scale of 4.0 in all college level academic work attempted.
- Undergraduate coursework in engineering economics and statistics
- Two or more years of experience in industrial, civil or government engineering or technical professional position.

Students are required to request official transcripts from all academic institutions attended (including UCCS if applicable) as well as three letters of recommendation, submitted by the issuing institution or recommender.

Applicants who do not meet the requirements for regular admission may be admitted on a provisional basis subject to the recommendation of the Program Director.

Currently enrolled UCCS undergraduate engineering students with exceptional academic records and previous work experience may qualify for guaranteed early admission to the graduate program-please contact the College for more information.

DEGREE REQUIREMENTS

The degree program consists of 30 semester hours of coursework comprising 21 hours of core courses and 9 hours of specified emphasis courses in Engineering Health or Business. MEEM courses are offered in a distance learning (online) format.

Deviations from the predefined curriculum (including requests for transfer credit) must be approved by the graduate faculty advisor and reflected in the Plan of Study. Coursework must be completed with a 3.0 GPA or better, and all coursework applied to the program (including any transfer credit) must have been completed no earlier than six years prior to degree completion.

Core Courses (21 Required Credit Hours)
Students must take the following seven core courses:

- EMGT 5010 - Introduction to the Systems Perspective
- EMGT 5020 - Finance and Accounting for Engineering Managers
- EMGT 5050 - Engineering Project Management
- EMGT 5110 - Systems Engineering Processes
- EMGT 5310 - Project Estimation and Risk Analysis
- EMGT 5510 - Leadership for Engineers
- EMGT 5610 - Case Studies in Engineering Management

Students are required to complete a capstone course to demonstrate mastery of the overall program content. The project is administered through EMGT 5610, which is part of the prescribed course sequence. EMGT 5610 is a 3 semester hour course which can be taken in either the Fall or Spring semester. The capstone course should be the final course of the student's degree program.

Specialization Areas (9 Credit Hours)
Students must take the following three courses within their chosen emphasis area:

Engineering Health

- ENHL 5010 - Introduction to Engineering Health Systems
- ENHL 5020 - Healthcare Analytics
- ENHL 5030 - Information Technology in Healthcare

Business

- MKTG 6090 - Marketing Strategy
- OPTM 6090 - Operations: Competing Through Capabilities
- QUAN 5590 - Fundamentals of Business Statistics

MASTER OF ENGINEERING IN SPACE OPERATIONS, ME SO

The Master of Engineering - Space Operations is an applied, non-thesis graduate degree program ideally suited for working professionals involved in military, civil or commercial space operations, payload and mission support, space systems analysis, space systems engineering, and design. Available exclusively online, the ME SO degree program can be completed entirely via distance.

ADMISSION REQUIREMENTS

The minimum requirements for regular admission into the Master of Engineering Space Operations program are as follows**:**

- Bachelor of Science degree (BS) in engineering or a related science discipline from an accredited institution.
- An undergraduate grade point average of 3.0 or higher on a scale of 4.0 in all college level academic work attempted.
- Evidence of mathematical maturity equivalent to the completion of the following university level coursework:
    - One semester of calculus
    - One semester of calculus-based Physics
    - Linear Algebra
- Two years experience in a commercial, civil or government engineering/science career field

Students are required to request official transcripts from all academic institutions attended (including UCCS if applicable) as well as three letters of recommendation, submitted by the issuing institution or recommender.

Applicants who do not meet the requirements for regular admission may be admitted on a provisional basis subject to the recommendation of the Program Director. Currently enrolled UCCS undergraduate engineering students with exceptional academic records and previous work experience may qualify for guaranteed early admission to the graduate program. Please contact the College for more information.

DEGREE REQUIREMENTS

The ME SO degree program consists of 30 credit hours of coursework comprising 24 hours of core courses and 6 hours of specialization electives.

Deviations from the predefined curriculum (including requests for transfer credit) must be approved by the graduate faculty advisor and the Graduate Committee and reflected in the Plan of Study. Coursework must be completed with a 3.0 GPA or better, and all coursework applied to the program (including any transfer credit) must have been completed no earlier than six years prior to degree completion.

Required Courses (24 credit hours)

- SPCE 5005 - Engineering Analysis for Space Applications
- SPCE 5025 - Fundamentals of Astronautics
- SPCE 5045 - Space Mission Analysis
- SPCE 5065 - Spacecraft Environment Interactions
- SPCE 5085 - Space Communications
- SPCE 5105 - Remote Sensing in Space

- SPCE 5125 - Spacecraft Dynamics and Control
- SPCE 5595 - Space Mission Design

Elective Courses (6 credit hours)
Students will select two Master's level courses from the program courses below to fulfill the elective requirement.

- SPCE 5605 - Engineering Simulation
- SPCE 5625 - Global Positioning System (GPS)
- SPCE 5645 - Space Policy
- SPCE 5665 - Systems Engineering Processes

Capstone Project
The ME SO program requirements include successful completion of a capstone project. The project is administered through SPCE 5595, which is part of the prescribed course sequence. SPCE 5595 is a 3 semester hour course and is normally scheduled during the Fall semester. The capstone course should be the final course of the student's degree program.

MASTER OF ENGINEERING IN SYSTEMS ENGINEERING, ME SYE

The ME SYE program is designed for working professionals who design, develop, field, operate and maintain today's complex engineering systems. The program provides a broad understanding of the roles of a systems engineer and a thorough understanding of process implementation-from needs analysis and system requirements to trade off studies and system design consistent with guidelines established by the International Council on Systems Engineering (INCOSE). Offered courses stress the system life-cycle approach and the underlying systems engineering process. Other courses offer the quantitative basis for conducting trade-off studies, computer simulation and risk management. Available exclusively online, the MESYE degree program can be completed entirely via distance.

ADMISSION REQUIREMENTS

The minimum requirements for regular admission into the Master of Engineering-Systems Engineering program are as follows:

- Bachelor of Science (BS) degree in engineering, mathematics, physics or a closely related field from an accredited institution
- An overall undergraduate grade point average of 3.0 or higher on a scale of 4.0 in all college level academic work attempted
- Evidence of mathematical maturity equivalent to the completion of the following university-level coursework:
    - Three semesters of calculus
    - At least one semester beyond calculus (advanced calculus or ordinary differential equations)
    - Linear algebra
    - Probability and statistics
- Two or more years of experience with commercial, civil or government systems engineering practice or a closely related field

Students are required to request official transcripts from all academic institutions attended (including UCCS if applicable) as well as three letters of recommendation, submitted by the issuing institution or recommender.

Applicants who do not meet the requirements for regular admission may be admitted on a provisional basis subject to the recommendation of the Program Director.

Currently enrolled UCCS undergraduate engineering students with exceptional academic records and previous work experience may qualify for guaranteed early admission to the graduate program-please contact the College for more information.

DEGREE REQUIREMENTS

The degree program consists of 30 credit hours of course work comprising 24 hours of prescribed program courses and 6 hours of electives.

ME SYE courses are offered in a distance learning (online) format.

Deviations from the predefined curriculum (including requests for transfer credit) must be approved by the graduate faculty advisor and the Graduate Committee and reflected in the Plan of Study. Course work must be completed with a 3.0 GPA or better, and all course work applied to the program (including any transfer credit) must have been completed no earlier than six years prior to degree completion.

Core Courses (24 credit hours)

- SYSE 5010 - Introduction to the System Perspective
- SYSE 5050 - Engineering Project Management
- SYSE 5110 - Systems Engineering Processes
- SYSE 5150 - System Analysis
- SYSE 5210 - Systems Architecture
- SYSE 5310 - Project Estimation and Risk Analysis
- SYSE 5350 - Engineering Modeling and Simulation
- SYSE 5450 - Systems Engineering Project

Elective Courses (6 credit hours)

Students will select two Master's level courses to fulfill the elective requirement from the list of courses below.

- EMGT 5020 - Finance and Accounting for Engineering Managers
- EMGT 5510 - Leadership for Engineers
- SPCE 5025 - Fundamentals of Astronautics
- SPCE 5045 - Space Mission Analysis
- SPCE 5065 - Spacecraft Environment Interactions
- SPCE 5085 - Space Communications

Capstone Project

All ME SYE students are required to accomplish a capstone systems engineering project to demonstrate mastery of the overall program objectives. The project is administered through SYSE 5450, which is part of the prescribed course sequence. SYSE 5450 is normally scheduled in two parts: a 2-credit-hour class during Fall term, followed by a 1-credit-hour class during Spring term which is devoted to project documentation and final presentation. Project topics are decided between the student and the advisor and will normally reflect a real world industry or community need and/or interest.

COMPUTER SCIENCE

Engineering Building, Room 199
(719) 255-3325 Fax: (719) 255-3369
http://cs.eas.uccs.edu/

FACULTY

- **Professors:** Terrance Boult (El Pomar Chair of Innovation and Security), Ching-Hua Chow, Jugal Kalita, Sudhanshu Semwal, and Xiaobo Zhou (Chair)
- **Professors Emeriti:** Maria Augusteijn, Dushan Badal, Lewis Pinson, Robert Sebesta, Charles Shub, and Richard Wiener
- **Associate Professors:** Tim Chamillard and Qing Yi
- **Assistant Professors:** Rory Lewis, Jia Rao, Jonathan Ventura, and Kristen Walcott-Justice
- **Instructors:** Pam Carter, Albert Glock, and Dana Wortman

PROGRAMS COORDINATED BY THE DEPARTMENT

- Computer Science Minor
- Game Design Minor
- Game Programming Minor
- Bachelor of Science in Computer Science
- Bachelor of Innovation in Computer Science
- Bachelor of Innovation in Computer Science Security
- Bachelor of Innovation in Game Design and Development
- Software Engineering Certificate
- Information Assurance Certificate
- Secure Software Systems Certificate
- Master of Engineering in Information Assurance
- Master of Engineering in Software Engineering
- Master of Science in Computer Science
- Master of Science in Computer Science - Media Convergence, Games and Media Integration
- PhD Program in Engineering, Computer Science concentration or Security Concentration

COMPUTER SCIENCE STUDY

Computer science encompasses a relatively new body of knowledge that treats both theoretical foundations and practical applications of computers. Since the 1950s, significant human, financial, and physical resources have been directed toward the design and development of both less expensive and more powerful computers. These efforts have resulted in a wide variety of computers, ranging from microcomputers costing a few hundred dollars to multi-million dollar parallel processors.

Computer science has applications in virtually every major field, including banking, business administration and management, engineering, applied and pure mathematics, physics, chemistry, biology, word-processing, database management, simulation, numerical analysis, statistics, games, robotics, medicine, animation, automobile and aviation industry, personal communication, and security.

The application of digital computers in all phases of our lives has created many career opportunities. The job market for graduates having a degree in computer science is strong and supported by clear trends for continued growth.

The UCCS curriculum in computer science presented in this Catalog is modern and rigorous. The Department of Computer Science takes great pride in emphasizing quality teaching supported by modern computer facilities. The UCCS curriculum in computer science also requires a concentration of related courses chosen by the student. This requirement is intended to insure that the graduates of the program will have a base of knowledge embracing a field where computers are applied.

BI DEGREE

UCCS offers the unique BI™ (Bachelor of Innovation) degree in Computer Science, Computer Science Security and Game Design and Development. See http://innovation.uccs.edu for more information and sample degree plans in the Bachelor of Innovation.

BS DEGREE

UCCS offers a complete four-year program of study leading to a BS degree in computer science. The undergraduate curriculum provides students with theoretical foundations and practical experience in both hardware and software aspects of computers. The curriculum in computer science is integrated with courses in the sciences and the humanities to offer an education that is broad, yet of sufficient depth and relevance to enhance student employment opportunities upon graduation. As a degree program within a professional school of the university, the curriculum is based on the criterion that graduates are expected to function successfully in a professional employment environment immediately upon graduation.

JOINT BS DEGREE

The Departments of Computer Science and Electrical and Computer Engineering jointly offer a BS Degree in Computer Engineering. This program is described in detail in the Electrical and Computer Engineering section.

MINOR PROGRAM

UCCS also offers a flexible minor in computer science. The minor provides students the ability to formally supplement their study in other fields with a rigorous computer science background that will enhance employment opportunities after graduation.

GENERAL COURSES

Students who do not intend to major or minor in computer science may take computer science courses to broaden their backgrounds and complement their degree curricula. Introductory courses CS 1000, 1010, 1020, 1030, 1040, 1050, 1060,1070 and 1090 are intended to make computer literacy and programming available to a broad class of students. CS1150 and 1450 are recommended for those who anticipate doing extensive computing in their student or professional careers.

ACCREDITATION

The BSCS degree at UCCS is accredited by the Computing Accreditation Commission of ABET:

111 Market Place, Suite 1050
Baltimore, MD 21202-4012
(410) 347-7700

COMPUTER SCIENCE, BI™

Please see http://innovation.uccs.edu.

COMPUTER SCIENCE: SECURITY (CS S), BI™

Please see http://innovation.uccs.edu.

GAME DESIGN AND DEVELOPMENT (GDD), BI™

The Bachelor of Innovation™ in Game Design and Development (GDD) is a degree within the Bachelor of Innovation family. It is a rigorous technical curriculum based heavily on programming and game design topics with important cross-disciplinary breadth in art, music and other fields. The program as a whole will let students build the foundational knowledge and develop the skills necessary to form their own independent game development companies or to pursue employment in the games industry. In addition to traditional games for entertainment, the game industry includes Serious Games (games designed for simulation and training, educational games, games for health care, and so on) and Casual Games (small, short games played in a Web browser or on a cell phone, for example).

The Bachelor of Innovation family requires an innovation core, a cross-discipline core, and a set of general education courses in addition to the rigorous technical degree. The combination of the GDD-specific coursework and the core Bachelor of Innovation™ topics and experiences will position students form a new small company to develop entertainment and serious games; pursue a career at a traditional entertainment game development company; join a company that develops or utilizes Serious Games; or use the critical thinking, design, programming and teaming skills developed throughout the curriculum to pursue employment outside the games industry.

LEARNING OUTCOMES

- Understand and apply game design principles in various domains
- Understand and apply programming fundamentals
- Understand and apply advanced software development techniques
- Understand and apply Innovation Core concepts in a team-based business environment

DEGREE REQUIREMENTS

The Bachelor of Innovation in Game Design and Development degree requires the following:

- completion of at least 120 credit hours
- a minimum 2.0 grade point average in all computer science courses, GDD courses, and courses taken at the University of Colorado.

COURSE REQUIREMENTS

The courses for the degree are as follows:

- **Innovation Core** (24 semester hours)
- **Cross-discipline Core** (15 semester hours)
- **Creative Communication Core, Business Core, or Globalization Core**

(Note: GDD students who select the Business Core or Globalization Core are required to take one Visual Arts and one Music course as free electives.)

GDD Core (30 Credit Hours)

- GDD 1100 - Introduction to Game Development
- GDD 1200 - Introductory Programming for Game Developers
- GDD 2100 - Game Design for Diverse Populations
- GDD 2150 - Fundamental Game Design Concepts
- GDD 2200 - Object-Oriented Analysis, Design, and Implementation
- GDD 3400 - Artificial Intelligence for Games
- GDD 4900 - Commercial Game Development Practicum
- CS 2250 - Advanced Data Structures in C++
- CS 3350 - Introduction to Game Design and Development
- CS 4800 - Computer Graphics

GDD Concentration Requirements (15 Credit Hours)

Students select 15 hours of concentration courses in any 3000 level or above CS or GDD course not used to meet other GDD degree requirements.

Composition Courses (3 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- PORT 3000 - Writing Portfolio Assessment (0 credit hours)

Mathematics (7 Credit Hours)

- MATH 1350 - Calculus I

Natural Science (11 Credit Hours)

- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I

  Remaining 6 credit hours selected from the classes below:

  Biology, Chemistry, Geography and Environmental Studies, Geology, and Physics & Energy Science.

Compass Curriculum (12 Credit Hours)

- GPS 1010 - Gateway Program Seminar

  Explore courses must be completed outside the major and Area Requirements. All other CC requirements can be completed within the degree requirements above.

Free Electives (12 Credit Hours)

Students select 12 hours of free electives from all the courses offered at UCCS EXCEPT MATH courses numbered below 1350.

The Bachelor of Innovation students are required to participate in research/innovation projects. Most of these will be industry-sponsored projects. Students employed full-time who wish to pursue a degree in this program will be required to sign IP agreements and have such agreements executed by their employer, or arrange for their employer to be one of the industry-sponsored projects.

COMPUTER SCIENCE, BS

LEARNING OUTCOMES

- An ability to apply mathematical foundations, algorithmic principles, and computer science theory and practice
- An ability to model, design, implement and test software systems in a way that demonstrates comprehension of the trade-offs involved in design and implementation choices
- An ability to learn to use new design methodologies, operating systems, languages, and other software development tools within reasonable time constraints
- An ability to function effectively on teams related to software development
- An ability to communicate with others, both orally and in writing, about technical subjects
- An understanding of professional, ethical and social responsibilities
- Preparation to do continual learning throughout alumni careers, to include such things as pursuing advanced degrees, attending short courses, reading technical or trade journals, participating in sabbaticals, etc.
- Preparation to pursue careers in all branches of computer science including technical development, project management, and technical sales

OBJECTIVES

Illuminate - lifelong learning in computer science

- Alumni will be prepared to learn on their own whatever is required to stay current in their chosen profession, for example, learning new programming languages, algorithms, developmental methodologies, etc.
- Alumni should be prepared to do continual learning throughout their careers, to include such things as pursuing advanced degrees, attending short courses, reading technical or trade journals, participating in sabbaticals, etc.
- Alumni will be prepared to pursue careers in all branches of computer science including technical development, project management, and technical sales.

Investigate - demonstration of computer science principles

- Alumni should have the ability to find and access information relevant to an application under development.
- Alumni should have the ability to model various problem domains and convert them into software solutions.
- Alumni should have the ability to apply techniques of algorithm design and automata theory to new problem solving situations.

- Alumni should demonstrate the ability to draw upon the expertise of others and negotiate solutions to a problem as a productive technical team member.
- Alumni should demonstrate an understanding of the impact of computer problem solutions in a global, economic, environmental, and societal context.

Innovate - creative application of computer science principles

- Alumni should be able to generate new and innovative solutions to solve problems or meet requirements in their discipline.
- Alumni should be able to integrate global, economic, environmental, and societal considerations into their problem solutions.

The Department of Computer Science has established the following **Student Outcomes** for the Bachelor of Science in Computer Science. By the time of graduation, students are expected to demonstrate:

1. An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
2. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
3. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
4. An ability to function effectively on teams to accomplish a common goal.
5. An understanding of professional, ethical, legal, security and social issues and responsibilities.
6. An ability to communicate effectively with a range of audiences.
7. An ability to analyze the local and global impact of computing on individuals, organizations, and society.
8. Recognition of the need for and an ability to engage in continuing professional development.
9. An ability to use current techniques, skills, and tools necessary for computing practice.
10. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer- based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
11. An ability to apply design and development principles in the construction of software systems of varying complexity.

DEGREE REQUIREMENTS

A minimum of 128 hours must be completed with a cumulative CU grade point average of 2.0; at least 45 of these hours must be at the upper-division level (courses numbered 3000+).

The last 30 hours of the degree must be completed while registered in the College of Engineering and Applied Science at UCCS.

Courses numbered below 1000 do not count towards degree completion.

This guide is provided for student use only. It does not represent an official documentation of a student's progress towards completion of their degree program. The CS program requires a minimum 2.0 GPA in all CS coursework

taken in order to graduate. Students must also complete an Exit Interview with the CS Department during their final semester to graduate.

COURSE REQUIREMENTS

Computer Science Core (38 Credit Hours)

- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms
- CS 2060 - Programming with C
- CS 2080 - Programming with UNIX
- CS 2160 - Computer Organization and Assembly Language Programming
- CS 3020 - Advanced Object Technology Using C#/.Net

  or

- CS 3060 - Object-Oriented Programming Using C++

  ALL COMPUTER SCIENCE MAJORS ARE REQUIRED TO TAKE EITHER CS 3020 OR CS 3060 AS A REQUIREMENT FOR GRADUATION. IF BOTH COURSES ARE TAKEN, ONE WILL COUNT AS A TECHNICAL ELECTIVE.

- CS 3160 - Concepts of Programming Languages
- CS 3300 - Software Engineering I
- CS 4100 - Compiler Design I
- CS 4200 - Computer Architecture I
- CS 4500 - Operating Systems I
- CS 4700 - Computability, Automata and Formal Languages
- CS 4720 - Design and Analysis of Algorithms

Computer Science Electives (9 Credit Hours)

CS 4000-5999 that are NOT being used for the CS core (9 credit hours)

Technical Electives (9 Credit Hours)

Select from the following:

- COMPUTER SCIENCE (3000 level or above not being used for CS core or CS electives)
- GAME DESIGN and DEVELOPMENT courses 3000+
- ELECTRICAL AND COMPUTER ENGINEERING (2000 level or above, except ECE 2400)
- MATHEMATICS (3000 level or above, except MATH 4650)
- SCIENCE (additional courses from the list above or courses with prerequisites from above list)
- BUSINESS (3000 level or above, except 3010, 3020 or 3030)

Composition Courses (6 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing

  OR

- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- ENGL 2090 - Technical Writing and Presentation
- PORT 3000 - Writing Portfolio Assessment

Mathematics (21 Credit Hours)

- MATH 1350 - Calculus I

- MATH 1360 - Calculus II
- MATH 2150 - Discrete Math
- MATH 2350 - Calculus III
- MATH 3810 - Introduction to Probability and Statistics
- MATH 3130 - Introduction to Linear Algebra

Basic Science (14 Credit Hours)

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 1150 - General Physics Lab I Algebra Based

Remaining Hours

Select from classes below (5 credit hours):

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- GEOL 1010 - Physical Geology
- GEOL 1020 - Historical Geology or additional physics courses that require PES 1110 as a prerequisite.

Humanities and Social Science (24 Credit Hours)

- GPS 1010 Gateway Seminar Experience, 3 credit hours
- CS 3050 Social and Ethical Implications of Computing, 1 credit hour, REQUIRED.

The remaining 20 credit hours involve study in humanities, social sciences, arts, and other disciplines that serve to broaden the background of the student.

Courses in the following departments and programs satisfy this requirement:

- Anthropology (except 1030, 2300, 3000, 3200, 3210, 3240, 3320, 3340, 3370, 3410, 4200, 4300), Art History, Communication, Economics, English (1500 or above except 2080, 3010, and 3070-3160), Film, Foreign Culture Studies, Foreign Languages, History, Humanities, Music (except 1310, 1500, and 2250), Philosophy, Political Science, Psychology (except 2100, 2110, 3100, 3110, and 4110), Sociology, and Women's Studies. Students may also petition to include selected other courses in Interdepartmental Studies, Theater, or other departments.

Free Electives (7 Credit Hours)

Students need to complete 7 hours of Free Electives. The chosen course(s) can be selected from any discipline, but may not include MATH 1040, 1050, 1100 or 1130. Only 3 credit hours of CS coursework numbered below CS 1150 may count towards Free Electives.

Sample Schedule

FRESHMAN YEAR

Fall Semester (16 credit hours)	Spring Semester (17 credit hours)

- CS 1100 - Introduction to Game Development or Free Elective
- CS 1150 - Principles of Computer Science
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 Gateway Program Seminar
- MATH 1350 - Calculus I
- CS 1450 - Data Structures and Algorithms
- CS 2060 - Programming with C
- MATH 1360 - Calculus II
- PES 1110 - General Physics I - Calculus Based
- Humanities/Social Science Elective (3cr)

SOPHOMORE YEAR

Fall Semester (17 credit hours)

- CS 2080 - Programming with UNIX
- CS 2160 - Computer Organization and Assembly Language Programming
- ENGL 2090 - Technical Writing and Presentation
- MATH 2350 - Calculus III
- PES 1120 - General Physics II
- PES 1160 Advanced Physics Lab I

Spring Semester (16 credit hours)

- CS 3020 - Advanced Object Technology Using C#/.Net
- CS 3060 - Object-Oriented Programming Using C++
- MATH 2150 - Discrete Math
- Free Elective (2cr)
- Science Elective CHEM 1401 /CHEM 1402 (recommended) (5cr)
- Humanities/Social Science Elective (3cr)

JUNIOR YEAR

Fall Semester (16 credit hours)

- CS 3160 - Concepts of Programming Languages
- CS 4720 - Design and Analysis of Algorithms
- CS 1300 - Computational Linear Algebra **or**
- MATH 3130 - Introduction to Linear Algebra
- Technical Elective (3cr)
- Humanities/Social Science Elective (4cr)

Spring Semester (16 credit hours)

- CS 3050 - Social and Ethical Implications of Computing
- CS 3300 - Software Engineering I
- CS 4200 - Computer Architecture I
- MATH 3810 - Introduction to Probability and Statistics
- Computer Science Elective (CS 4000-5990) (3cr)
- Humanities/Social Science Elective (3cr)
- PORT 3000 Writing Portfolio Assessment

SENIOR YEAR

Fall Semester (15 credit hours)

Spring Semester (15 credit hours)

- CS 4500 - Operating Systems I
- CS 4700 - Computability, Automata and Formal Languages
- Computer Science Elective (CS 4000-5990) (3cr)
- Technical Elective (3cr)
- Humanities/Social Science Elective (3cr)
- CS 4100 - Compiler Design I
- Computer Science Elective (CS 4000-5990) (3cr)
- Technical Elective (3cr)
- Humanities/Social Science Elective (4cr)
- Free Elective (2cr)

Total Hours: 128

GRADUATE CERTIFICATES

INFORMATION ASSURANCE CERTIFICATE

The UCCS Computer Science Department offers a set of four graduate courses on campus leading to a certificate in Information Assurance. These courses prepare individuals (who engineer computer-based systems or develop policy and doctrine for systems where information assurance is an objective) with knowledge of the methods, techniques, and tools used in information assurance.

The four courses are certified by the National Security Agency's (NSA) Committee on National Security Systems (CNSS) and meet the Information Assurance Professional (4011) Training Standards. These courses can count towards the MEIA degree, the Master of Science in Computer Science degree, the PhD in Engineering/Security concentration degree or the PhD in Engineering/Computer Science concentration degree. UCCS is one of NSA/DHS-designated Centers of Academic Excellence in Information Assurance and Cyber Defense (CAE IA/CD).

Certificate Requirements

- CS 5220 - Computer Communication
- CS 5910 - Fundamentals of Computer/Network Security
- CS 5920 - Applied Cryptography for Secure Communication
- CS 6910 - Advanced System Security Design

Related Degree Programs

- Master of Engineering - Information Assurance, MEIA
- PhD in Engineering Security concentration, PhDSec
- PhD in Engineering Computer Science concentration, PhDCS

SECURE SOFTWARE SYSTEMS CERTIFICATE

The UCCS Computer Science Department offers a set of graduate courses on campus which leads to a Certificate in Secure Software Systems. Students completing the four courses will receive a Graduate Certificate in Secure Software Systems from UCCS. These courses can count as credits towards one of the following programs: Master of Science in Computer Science, Master of Engineering, Information Assurance (MEIA), Master of Engineering, Software Engineering (MESE), PhD in Engineering Security concentration (PhDSec), or PhD in Engineering Computer Science concentration (PhDCS).

The MEIA degree program and curriculum are certified by the National Security Agency's (NSA) Committee on National Security Systems (CNSS) and meet the Information Assurance Professional (4011) Training Standards.

Required Courses

- CS 5310 - Software Requirements Analysis and Specification
- CS 5320 - Software Design
- CS 5910 - Fundamentals of Computer/Network Security
- CS 5920 - Applied Cryptography for Secure Communication

SOFTWARE ENGINEERING CERTIFICATE

The College of Engineering and Applied Science offers a Certificate in Software Engineering to qualified students. The program has two purposes: (1) to provide employees of local companies with an opportunity to enhance their software engineering skills and their chances for career advancement, and (2) to provide students currently enrolled in the Master of Science in Computer Science (MSCS) with more in-depth knowledge in software engineering to enhance employ ability and career advancement. These courses can count towards the MSEE degree, the Master of Science in Computer Science degree or the PhD in Engineering/Computer Science concentration degree. Click here for more information.

Required Courses

- CS 5310 - Software Requirements Analysis and Specification
- CS 5320 - Software Design
- CS 5340 - Software Maintenance
- CS 5350 - Software Project Management
- One other Graduate level CS course numbered 5000 or above

ENGINEERING - CONCENTRATION IN SECURITY, PHD

The Department of Computer Science supports the PhD in Engineering program with a concentration in security. Students who are interested in research areas with an emphasis in security, and would like to pursue the PhD in Engineering degree should view the program guidelines.

ENGINEERING - CONCENTRATION IN COMPUTER SCIENCE, PHD

The Department of Computer Science supports the PhD in Engineering program with a concentration in computer science. Students who are interested in research areas with an emphasis in computer science, and would like to pursue the PhD in Engineering degree should view the program guidelines.

MASTER OF ENGINEERING IN INFORMATION ASSURANCE, MEIA

Network and system security has become very critical and increasingly urgent in today's network and information systems. Information Assurance deals with operations that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. The Information Assurance curriculum includes courses designed to prepare individuals who engineer computer/network systems or develop policy for these systems with knowledge of methods, techniques, and tools used in information assurance.

These courses are regularly offered in the late afternoon and evening to provide a more ideal time slot for the working professional.

The MEIA degree program and curriculum are certified by the National Security Agency's (NSA) Committee on National Security Systems (CNSS and meet the Information Assurance Professional (4011) Training Standards).

ADMISSION REQUIREMENTS

- A Bachelor of Science or a Bachelor of Arts degree in mathematics, computer science, engineering information systems, or equivalent.
- An overall undergraduate grade point average of 3.0 (on a scale of 4.0; awarded within the past five years). Applicants with a grade point average of less than 3.0 or with degrees awarded greater than five years ago may be required to take the GRE or may be admitted on a case-by-case basis. Applicants with a grade point average between 2.75 and 3.0 awarded within the past five years may be admitted provisionally.
- It is recommended the applicant have two years experience with commercial, industrial or government software development or system/network administration.
- A completed online application, including official transcripts, three letters of recommendation, and a concise statement of experience and career goals.

PROGRAM PREREQUISITES

- Knowledge of a modern programming language, e.g., Java, C++, C#
- CS 1450 - Data Structures and Algorithms
- CS 2080 - Programming with UNIX
- CS 2160 - Computer Organization and Assembly Language Programming

DEGREE REQUIREMENTS (30 CREDIT HOURS TOTAL)

Required Core Courses (15 credit hours, common to all options)

- CS 5200 - Computer Architecture I
- CS 5220 - Computer Communication
- CS 5500 - Operating Systems I
- CS 5910 - Fundamentals of Computer/Network Security
- CS 5920 - Applied Cryptography for Secure Communication

Degree Completion Courses (15 credit hours)

Three options are available: Thesis, Non-Thesis or Portfolio.

1. Thesis Option

- Complete CS 7000 Master Thesis (6 credit hours)
- Complete three courses from the approved list of courses. The Graduate Studies Committee must approve the courses selected.

2. Non-Thesis Option

- Complete CS 7010 Master Project (3 credit hours).
- Complete four courses from the approved list of courses. The Graduate Studies Committee must approve the courses selected.

3. Portfolio Option

- Submit a 5-8 page paper that describes at least one, and at most four, projects in which the student has been engaged. For each project it will describe the overall project objectives, the team, the student's role on the team, the formal information assurance/development methodology used, and the lifecycle stages in which the student was engaged. It should explicitly relate the project(s) to at least two of the MEIA courses which the student has completed. It should also include examples - at least one example work artifact from the information assurance process, with the artifact not counting toward the 5-page minimum length. The document should be a formal technical paper. It is recommended that students include appropriate references to relevant information assurance sources, such as books, papers and blogs.

Transfer Credit

Up to 9 hours of graduate work may be transferred from an accredited graduate program, provided:

- The coursework has not been used for any other degree.
- Grade earned for the course(s) is B or better.
- The coursework has been taken within the past six years.
- The course coverage is equal in level, content, and depth to the course for which it is being substituted.

Additional Graduate Degree Requirements

See also Graduate Degree Requirements for EAS and the Graduate School Requirements.

MASTER OF ENGINEERING IN SOFTWARE ENGINEERING, MESE

Complex software-intensive systems permeate every aspect of our lives. These systems are among the most complex products humankind has ever tackled. Software engineering is the disciplined application of proven principles, techniques, and tools to the creation and maintenance of cost-effective, user friendly software systems that solve real problems.

To accommodate the demand for well-educated software engineers in almost all industries today, UCCS has established the Master of Engineering degree in Software Engineering (MESE). UCCS offers a unique environment to study, learn, and share experiences surrounding this special engineering discipline. Our faculty comes from a broad spectrum of backgrounds. Many have had years of experience in industry prior to joining the faculty. The result is a diverse melting pot of ideas, technologies, and experiences.

Courses at the graduate level (and the undergraduate courses required for admission to the graduate program) are regularly offered in the late afternoon and evening to enable students from local industry to continue their studies.

ADMISSION REQUIREMENTS

1. A Bachelor of Science or a Bachelor of Arts degree in mathematics, computer science, engineering, information systems or equivalent.
2. An overall undergraduate grade point average of 3.0 (on a scale of 4.0; awarded within the past five years). Applicants with a grade point average of less than 3.0 awarded more than five years ago may be requested to take the GRE or may be admitted on a case-by-case basis. Applicants with a grade point average between 2.75 and 3.0 awarded within the past five years may be admitted provisionally.

3. It is recommended that the applicant have two years experience with commercial, industrial or government software development or maintenance.
4. A concise statement of experience and career goals.
5. Completed online application, including official transcripts and letters of recommendation.

PROGRAM PREREQUISITES

- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms
- CS 3300 - Software Engineering I
- MATH 2150 - Discrete Math

Note: Some of these courses may have prerequisites. Any comparable course from another approved university will suffice.

COURSE REQUIREMENTS (30 CREDIT HOURS TOTAL)

Required Core Courses (12 credit hours)

- CS 5310 - Software Requirements Analysis and Specification
- CS 5320 - Software Design
- CS 5340 - Software Maintenance
- CS 5350 - Software Project Management

Degree Completion Courses (18 credit hours)

Three options are available: Thesis, Non-Thesis or Portfolio.

1. Thesis Option

- CS 7000 Masters Thesis (6 credit hours)
- Plus four elective graduate computer science courses

2. Non-Thesis Option

- CS 7010 Masters Project (3 credit hours)
- Plus five elective graduate computer science courses

Students will not be allowed to enroll in CS 5320 or CS 5340 without the following:

a) passing the proficiency test, or
b) completing the additional required courses at UCCS (or another program as approved by the MESE program director).

3. Portfolio Option

- **Portfolio** - Submit a 5-8 page paper that describes at least one, and at most four, projects in which the student has been engaged. For each project it will describe the overall project objectives, the team, the student's role on the team, the formal software engineering/development methodology used, and the lifecycle stages in which the student was engaged. It should explicitly relate the project(s) to at least two of the MESE courses which the student has completed. It should also include examples - at least one example work artifact from the software engineering process, with the artifact not counting toward the

5-page minimum length. The document should be a formal technical paper. It is recommended that students include appropriate references to relevant software engineering sources, such as books, papers and blogs.

- Plus six elective graduate computer science courses.

Additional Graduate Degree Requirements
See also Graduate Degree Requirements for EAS and the Graduate School Requirements.

MASTER OF SCIENCE IN COMPUTER SCIENCE, MS

The Department of Computer Science offers a program leading to the Master of Science in Computer Science. Courses at the graduate level and the undergraduate courses required for admission to the graduate program are regularly offered in the late afternoon or evening to enable students from local industry to continue their studies.

LEARNING OUTCOMES

The candidate must have a broad knowledge of computer science, covering a variety of fundamental areas (like operating systems, design and analysis of algorithms and theoretical aspects of computability). This broad background can be a result of a combination of undergraduate and graduate coursework.

- The candidate must be able to read, understand, and evaluate professional literature in computer science.
- The candidate must be able to write technical reports and software project documentation
- The candidate must be able to make oral presentations of technical information.
- The candidate is expected to have in-depth knowledge of at least one area of computer science, including the topic of the candidate's thesis or project.

ADMISSION REQUIREMENTS

1. An overall undergraduate grade point average of 3.0 on a scale of 4.0. In special cases a student may be admitted with a lower grade point average as a provisional degree student. Students with an average below 3.0 who completed their undergraduate degree a significant number of years ago will also be considered on an individual basis. Students with grade point average deficiencies who take several undergraduate courses to meet entrance background requirements will have their performance in those courses considered in making the admission decision. Students who recently earned an undergraduate degree in computer science with a grade point average below 3.0 may be asked to take the general GRE before they can be considered for admission. The Graduate Studies Committee will make the admissions decision on an individual basis.
2. Four semesters of mathematics courses: two semesters of university calculus, a course in discrete mathematics and one additional course of a mathematical nature.
3. Courses in computer science equivalent to the following courses: Principles of Computer Science (Java or C++), Data Structures and Algorithms, Programming in UNIX, Programming in C, Computer Organization and Assembly Language Programming, Concepts of Programming Languages, and Software Engineering. A student who has completed the requirements for Principles in Computer Science and Data Structures and Algorithms but not the other computer science prerequisites could be admitted, but would still be

required to take the unfulfilled prerequisites after admission. Students lacking four or more courses should register as an unclassified student until the courses are completed.

4. Additional requirements may be specified by the Graduate School.

DEGREE REQUIREMENTS

Total Program: 30 Credit Hours

- Graduate coursework must include CS 5500 (Operating Systems), CS 5700 (Computability, Automata, and Formal Languages) and CS 5720 (Design and Analysis of Algorithms), if they have not been taken previously as upper division undergraduate courses.
- Up to 6 semester hours of graduate courses can be taken from other departments if first approved by the student's MS Advisory Committee.
- At most four computer science courses may be taken that are cross-listed. Note that the three required courses are cross-listed; if taken, they are counted among the four. A student has a maximum of six years to complete the program.

See also Graduate Degree Requirements for EAS and the Graduate School requirements.

TRANSFER CREDIT

Up to 9 hours of graduate work may be transferred from an accredited graduate program, provided:

- The coursework has not been used for any other degree.
- Grade earned for the course(s) is B or better.
- Institutions from which the courses are recommended for transfer are accredited.
- The coursework has been taken within the past six years.
- The course coverage is equal in level, content, and depth to the course for which it is being substituted.

Additional Graduate Degree Requirements
See also Graduate Degree Requirements for EAS and the Graduate School Requirements.

MASTER OF SCIENCE IN COMPUTER SCIENCE - MEDIA CONVERGENCE, GAMES AND MEDIA INTEGRATION, MSCS-GM

One of the most exciting aspects of the GMI degree program is the combination of a set of required courses that ensure that all students develop a firm foundation in the basics of design and development of games and media integration products, and the opportunity for students to pursue their special interests through several elective courses and portfolio development.

OBJECTIVES

Program graduates will demonstrate and be able to perform to professional standards in the following areas:

- A broad understanding of the entire spectrum of media convergence, games and media integration (GMI)
- A thorough understanding of the process of creating, designing, product development and deployment of a game, animation and movie, or a wearable computing product

- Proficiency with many of the tools and techniques for implementing game and media integration product for the industry.

ADMISSION REQUIREMENTS

1. A Bachelor of Science, Bachelor of Arts, or Bachelor of Fine Arts degree.
2. Considerable computing experience and promise of ability to pursue advanced study and research.
3. An overall undergraduate grade point average of 3.0 on a scale of 4.0. Applicants with a grade point average of less than 3.0 may be provisionally admitted on a case-by-case basis.
4. Completed Admission Forms, including two copies of official transcripts and three references sent to the Computer Science Department.

PROGRAM PREREQUISITES

The equivalent of the following UCCS courses:

- CS 1450 - Data Structures and Algorithms
- CS 3060 - Object-Oriented Programming Using C++

  or
- CS 3020 - Advanced Object Technology Using C#/.Net

  or
  Knowledge of Maya Embedded Language (MEL)
- MATH 2150 - Discrete Math
- MATH 3130 - Introduction to Linear Algebra

Note: A student who lacks one or more of the above courses may be admitted, but would still be required to satisfy the above requirements after admission. Students with considerable knowledge of programming and/or mathematical experience in the industry are encouraged to apply.

DEGREE REQUIREMENTS

A student will earn a Master of Science degree in Computer Science - Media Convergence, Games and Media Integration (GMI) - after completing 30 hours of graduate work, as follows:

Required Core Courses (9 Credit Hours)
The following three courses or their equivalents are required (if they were not previously taken as upper division undergraduate courses):

- CS 5800 - Computer Graphics
- CS 5720 - Design and Analysis of Algorithms
- CS 5780 - Advanced 3D Games and Digital Content Creation

Note: GMI students considering PhD program in Computer Science are also encouraged to consider:

- CS 5700 - Computability, Automata, and Formal Languages
- CS 5500 - Operating Systems I
- CS 5200 - Computer Architecture I

Required Portfolio (Up to 6 Credit Hours)
GMI students are required to develop an industrial portfolio with an interdisciplinary focus. Through the portfolio, the student shows an ability to completely realize their individual contributions, resulting in possibly a high quality exhibit, movie, or game.

The interdisciplinary nature of the GMI program provides all students with extensive knowledge in the widely-varied aspects of Games and Media integration. In turn, this provides students with the chance to integrate technical and artistic ideas in their portfolio. With the portfolio requirement, students carry out a concept to completion: a story would be conceived and then animated; a quest imagined and then fulfilled; or a wearable computing product imagined and implemented, for example.

Suggested applications with strong GMI emphasis areas include but are not limited to the following: applications integrated in TheatreWorks Productions, Digital Animation Movie Production and/or Production of Games, applications coordinating with the Center on Aging, work with visual and performing arts, and disability applications.

The student's portfolio advisory committee will consist of three faculty members, including at least one CS graduate faculty member and, if applicable, one faculty member from LAS. The third member should preferably come from a local industry, representing for example the SigGraph, IGDA community with major portfolio development experience. Dr. Semwal initially would be the CS portfolio advisor.

Completed works are expected to be submitted to SigGraph Animation and Film Festival, International Symposium on Wearable Computing, a variety of virtual reality and HCI interaction conferences, Game Developers Conference, or other related venues around the world.

Thesis or Project (3 - 6 Credit Hours)
Students are required to complete a project (three credit hours) or a thesis (six credit hours). A maximum total of nine credit hours of thesis or project, and portfolio is allowed, ensuring that students have sufficient coursework in the games and media integration areas. Students will be expected to work with an advisor in the GMI area of concentration following the guidelines of MS Thesis or Project work in the CS Department.

Elective Courses
The remaining credit hours will be from the following set of 3 credit hour elective courses. Note that some courses have prerequisites as noted.

- CS 5770 - Computer Graphics Animation & Scientific Visualization Techniques
- CS 6770 - Virtual Reality and Computer-Human Interaction
- CS 5710 - Evolutionary Computation
- CS 5750 - Computational Geometry
- CS 5810 - Topics in Computer Graphics
- CS 5790 - Wearable Computing and Complex Systems
- CS 5890 - Computational Linguistics (prerequisites)
- CS 5250 - Multimedia Computing and Communications
- CS 5260 - Advanced Internet and Web Systems
- CS 5840 - Computer Vision (prerequisites)
- CS 5050 - Selected Topics in Computer Science (prerequisites)
- ECE 5530 - Multivariable Control Systems II (prerequisites)
- ECE 5520 - Multivariable Control Systems I (prerequisites)
- CS 5870 - Introduction to Artificial Neural Networks
- CS 5510 - Distributed Systems (requires CS550—Operating Systems)

- CS 5220 - Computer Communication
- CS 5500 - Operating Systems I
- CS 5700 - Computability, Automata, and Formal Languages

Transfer Credit
Up to 9 hours of graduate work may be transferred from an accredited graduate program, provided:

- Coursework has not been used for any other degree.
- Grade earned for the course(s) is B or better.
- The coursework has been taken within past six years.
- The course coverage is equal in level, content, and depth to the course for which it is being substituted.

Additional Graduate Degree Requirements
See also EAS Graduate Degree Requirements and the Graduate School Requirements.

Further Information
Call (719) 255-3544, visit http://www.eas.uccs.edu/cs/megmi.shtml or e-mail prea@uccs.edu.

COMPUTER SCIENCE MINOR

GENERAL REQUIREMENTS

- At least 20 credit hours of coursework
- Every course in the minor must be completed with a grade of C or better.

The student will be responsible for any prerequisites to required courses. At most, 9 credit hours of transfer work may be applied to the minor.

COURSE REQUIREMENTS

6 credit hours:

- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms

5 credit hours:

- CS 2060 - Programming with C
- CS 2080 - Programming with UNIX

9 credit hours:
Any three CS 3000 or 4000 level courses

Note:
GDD Majors can substitute GDD 1200 and GDD 2200 for CS 1150 and CS 1450.

The three CS 3000 or 4000 level courses can include CS 3020 or CS 3060 but not both.

GAME DESIGN MINOR

GENERAL REQUIREMENTS

- 21 hours of coursework
- All coursework toward the minor must be completed with a grade of C or better.
- The student will be responsible for any prerequisites to required courses.
- At most, 9 credit hours of transfer work may be applied to the minor.

COURSE REQUIREMENTS

- CS 1100 - Introduction to Game Development
- GDD 2100 - Game Design for Diverse Populations
- GDD 2150 - Fundamental Game Design Concepts
- GDD 3100 User Interface Design for Games
- GDD 3400 - Artificial Intelligence for Games

Two other courses selected from design-intensive GDD 3000 or 4000 level courses.

GAME PROGRAMMING MINOR

GENERAL REQUIREMENTS

- 21 credit hours of coursework
- All coursework toward the minor must be completed with a grade of C or better.
- The student will be responsible for any prerequisites to required courses.
- At most, 9 credit hours of transfer work may be applied to the minor.

COURSE REQUIREMENTS

- CS 1450 - Data Structures and Algorithms

  or

- GDD 2200 - Object-Oriented Analysis, Design, and Implementation
- CS 3350 - Introduction to Game Design and Development
- CS 4800 - Computer Graphics
- CS 4780 - Advanced 3D Games and Digital Content Creation

  Graduate-level Games and Media Integration courses may also be used for these three courses.

- MATH 3130 - Introduction to Linear Algebra

  Three other courses selected from programming-intensive GDD 3000 or 4000 level courses or above.

Note: Many of these courses required significant programming. Students pursuing the minor will need to have programming experience from formal coursework or personal experience.

ELECTRICAL AND COMPUTER ENGINEERING

Engineering Building, Room 299
(719) 255-3548
Fax: (719) 255-3589
http://www.uccs.edu/~eas
email: ewynhors@uccs.edu

FACULTY

- **Professors Emeriti:** Michael Ciletti, Richard Kwor, John Norgard, Gerald Oleszek, and Rodger Ziemer
- **Professors:** Carlos Paz de Araujo, T. Subramanya Kalkur (Chair), Gregory Plett, Chia-Jiu Wang, and Mark Wickert
- **Associate Professor:** Heather Song
- **Assistant Professors:** Willie Harrison, Darshika G. Perera, and Scott Trimboli
- **Instructors:** John Lindsey and Leslie Tekamp

PROGRAMS COORDINATED BY THE DEPARTMENT

- Electrical Engineering Minor
- Bachelor of Innovation in Electrical Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Concurrent Bachelor/Master of Science in Electrical Engineering
- Master of Science in Electrical Engineering
- Master of Science in Electrical Engineering in Battery Controls
- PhD Program in Engineering, Electrical Engineering Concentration

ELECTRICAL AND COMPUTER ENGINEERING STUDY

Electrical and computer engineering harnesses the properties of electricity and materials to make possible a variety of devices and systems used for communication, computation, robotic control, navigation, remote sensing, medical imaging, and power generation and transmission.

In today's world, engineers are involved in a host of design activities. They design complex integrated circuits used in computers and communications equipment, as well as the processes that fabricate arrays of transistors in materials such as silicon and gallium arsenide. They develop the control logic that determines how industrial robots operate and they create sophisticated computer programs that allow computers and robots to behave as though they have vision. Electrical engineers play a key role in the design of radar equipment used for navigation in virtually all spacecraft, aircraft, and ships, as well as the brains found in microwave ovens and automobile engines. Some specialize in the engineering of modern, high speed, digital computers. Many also function effectively in management, marketing and sales efforts of corporations that create technical products. Others pursue advanced studies and participate in the education of other engineers.

The department of Electrical and Computer Engineering (ECE) offers coursework leading to the undergraduate (BSEE) and graduate (MSEE and PhD) degrees in electrical engineering and an undergraduate degree in computer engineering. The BS degree in computer engineering (BS CpE) is offered jointly with the Computer Science department.

Accreditation: The BSEE and BS CpE degrees at UCCS are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

ELECTRICAL ENGINEERING, BI™

OBJECTIVES

The Bachelor of Innovation™ in Electrical Engineering will provide students with both the technical and business background to work on innovative electrical engineering-related projects, including the ability to:

- recognize the broader issues in electrical engineering technology-related problems
- understand the technological, business, legal and societal constraints affecting this technology
- communicate the key issues, needs, potential options, and final solution to a challenge

The program seeks to prepare students for successful careers and lifelong learning. In addition to the technical competence to be expected of a graduate with a bachelor's degree in electrical engineering, students will develop the critical thinking skills, multi-faceted team oriented skills and basic business background to ensure that they can effectively compete in the changing technological career landscape for positions that are unlikely to be out-sourced.

Please visit Bachelor of Innovation™ (BI) Degree for more information about this program.

DEGREE REQUIREMENTS

The Bachelor of Innovation degree in Electrical Engineering requires the following:

- completion of at least 128 credit hours
- participation in the Exit Interview
- a minimum of 2.0 grade point average in all ECE courses and all courses taken at the University of Colorado
- a minimum of 2.0 in ECE 1411, ECE 2205 and ECE 2411

COURSE REQUIREMENTS

The courses for the degree are outlined as follows:

- **Innovation Core** (27 credit hours, 15 of which are HSS)
- **Business Core** (15 credit hours, 6 of which are HSS)
  or
- **Globalization Core** (15 credit hours, all of which are HSS)

Mathematics (18 Credit Hours)

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3400 - Introduction to Differential Equations
- ECE 3610 - Engineering Probability and Statistics

Science (11 Credit Hours)

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 2130 - General Physics III

English (3 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing

EE Core (39 Credit Hours)

- ECE 1001 - Introduction to Robotics
- ECE 1021 - Computer-Based Modeling and Methods of Engineering
- ECE 1411 - Logic Circuits I
- ECE 2050 - Introduction to Physical Electronics
- ECE 2610 - Introduction to Signals and Systems
- ECE 3020 - Semiconductor Devices I
- ECE 3110 - Electromagnetic Fields I
- ECE 3210 - Electronics I
- ECE 3230 - Electronics Laboratory I
- ECE 3420 - Microprocessor Systems Laboratory
- ECE 3430 - Introduction to Microcomputer Systems

Electives (9 Credit Hours)

Technical Electives: Select from Electrical and Computer Engineering (3000 level or above) and Computer Science (3000 level or above).

COMPUTER ENGINEERING, BS

LEARNING OUTCOMES

The Department of Electrical and Computer Engineering has established the following educational outcomes for the Bachelor of Science degree program in Computer Engineering (BSCpE). By the time of graduation, students are expected to demonstrate:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments as well as to analyze and interpret data
- An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multi-disciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively

- The acquisition of the broad education necessary to understand the impact of engineering solution in a global, economic, environmental and social context
- A recognition of the need for, and an ability to engage in lifelong learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

OBJECTIVES

The educational objectives of the Bachelor of Science degree program in Computer Engineering are statements that describe the accomplishments of graduates 3-5 years post-graduation:

Illuminate - lifelong learning in computer engineering
Alumni are expected to track state-of-the-art technology in computer engineering, to learn new processes, tools and device technologies, and to apply this knowledge in pursuit of graduate work and/or technology careers-including but not limited to technical development, project management and technical sales.

Investigate - demonstration of computer engineering principles
Alumni should have the ability to find and access information relevant to an application under development, be able to model various problem domains, and to apply techniques of algorithm, hardware and system design to new problem solutions as a productive technical team member.

Innovate - creative application of computer engineering principles
Alumni should be able to apply the general principles of computer engineering to innovative real-world problem solutions that demonstrate consideration for aesthetics, economics, ergonomics, ethics, safety, and sustainability.

DEGREE REQUIREMENTS

The Bachelor of Science Degree in Computer Engineering requires the following:

- completion of at least 128 hours
- participation in the Exit Interview
- a minimum 2.0 average in all ECE, CS and CU courses taken
- a minimum 2.0 in CS 1150, CS 1450, ECE 1411, ECE 2411, and ECE 2610.

COURSE REQUIREMENTS

Mathematics (18 credit hours)

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2150 - Discrete Math
- MATH 2350 - Calculus III
- MATH 3400 - Introduction to Differential Equations

Basic Science (14 credit hours)

Required science courses (8 credit hours):

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II

Select at least 6 credit hours from the following list:

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- GEOL 1010 - Physical Geology
- GEOL 1020 - Historical Geology

Students may also complete any other PES courses with a prerequisite of PES 1110. Please talk with an advisor to make sure the courses are approved in the program prior to completion.

Social Sciences and Humanities (15 credit hours)
Studies in the humanities and social sciences serve not only to meet the objectives of a broad education, but also to meet the objectives of the engineering profession.

College of Engineering and Applied Science students are required to take at least 15 credit hours of social sciences and humanities to be more aware of social responsibilities and able to consider related factors in the decision-making process. To ensure this, a minimum of nine (9) credit hours in social sciences and six (6) credit hours in humanities, or vice versa, must be taken; at least six (6) of these credit hours must be beyond the introductory level (2000 level or higher courses).

In place of 3 credit hours of social sciences and humanities, GPS 1010 - Gateway Program Seminar may be taken during the fall semester of the first year in the program. The balanced adjustment between social science and humanities for students completing GPS 1010 is six (6) credit hours and six (6) credit hours, respectively, with the 2000 level or higher course requirement unchanged.

SOCIAL SCIENCE DEPARTMENTS: Anthropology, Communications, Economics, Geography and Environmental Studies, Gerontology, Political Science, Psychology, Sociology, and Women's and Ethnic Studies

HUMANITIES DEPARTMENTS: Art History, English (1500 or higher classes), History, Humanities, Music (except choir or lessons), and Philosophy

Communication Skills (6 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing

  or

- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- ENGL 2090 - Technical Writing and Presentation

Computer Background (6 credit hours)

- ECE 1001 - Introduction to Robotics
- CS 2060 - Programming with C

Computer Engineering Core (Lower Division - 20 Credit Hours)

- ECE 1411 - Logic Circuits I
- ECE 2411 - Logic Circuits II
- ECE 2610 - Introduction to Signals and Systems

- ECE 2205 - Circuits and Systems I
- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms
- CS 2080 - Programming with UNIX

Computer Engineering Core (Upper Division - 36 Credit Hours)

- ECE 3210 - Electronics I
- ECE 3420 - Microprocessor Systems Laboratory
- ECE 3430 - Introduction to Microcomputer Systems
- ECE 3440 - Microcomputer Systems Laboratory
- ECE 3610 - Engineering Probability and Statistics
- ECE 4242 - Advanced Digital Design Methodology
- ECE 4330 - Embedded Systems Design
- ECE 4480 - Computer Architecture and Design

  or

- CS 4200 - Computer Architecture I
- CS 3060 - Object-Oriented Programming Using C++
- CS 3300 - Software Engineering I
- CS 4500 - Operating Systems I
- CS 4720 - Design and Analysis of Algorithms
- ECE 4890 - Senior Seminar
- ECE 4899 - Senior Design Project

Technical Electives (10 Credit Hours)

Select at least 10 hours from the following (students must meet course prerequisites):

- ECE 2050 - Introduction to Physical Electronics
- ECE 3020 - Semiconductor Devices I
- ECE 3110 - Electromagnetic Fields I
- ECE 3120 - Electromagnetic Fields II
- ECE 3205 - Circuits and Systems II
- ECE 3220 - Electronics II
- ECE 3230 - Electronics Laboratory I
- ECE 3240 - Electronics Laboratory II
- ECE 4200 - Advanced Digital Design Laboratory
- ECE 4211 - Rapid Prototyping with FPGAs
- ECE 4220 - Analog IC Design
- ECE 4320 - Fault Detection & Design for Testability
- CS 3010 - Web Programming
- CS 3020 - Advanced Object Technology Using C#/.Net
- CS 3160 - Concepts of Programming Languages
- CS 3350 - Introduction to Game Design and Development
- CS 4100 - Compiler Design I
- CS 4220 - Computer Networks
- CS 4420 - Database Systems I
- CS 4600 - Numerical Computing
- CS 4700 - Computability, Automata and Formal Languages

- CS 4800 - Computer Graphics
- CS 4820 - Functional and Logical Programming for Artificial Intelligence
- MATH 3130 - Introduction to Linear Algebra

Note: Other courses in CS, ECE, MAE, MATH, and PES numbered 3000+ (except MATH 3010 and 3020) may be accepted with a petition completed prior to taking the course.

Free Electives (3 Credit Hours)

Sample Schedule

The following sample schedule represents the suggested order and semesters in which students should take courses to graduate within four (4) years. Since each student is different, this listing should only be considered a guide. All course prerequisites and co-requisites must be completed by the student.

FRESHMAN YEAR

Fall Semester (17 credit hours)

- CS 1150 - Principles of Computer Science (3cr)
- ECE 1001 - Introduction to Robotics (3cr)
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing (3cr) or
- GPS 1010 - Gateway Program Seminar (3cr)
- PES 1110 - General Physics I - Calculus Based (4cr)

Spring Semester (17 credit hours)

- CS 1450 - Data Structures and Algorithms (3cr)
- CS 2060 - Programming with C (3cr)
- MATH 1360 - Calculus II (4cr)
- PES 1110 - General Physics I - Calculus Based (4cr)
- Social Science/Humanities Elective (3cr) or ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing (3cr)

SOPHOMORE YEAR

Fall Semester (15 credit hours)

- CS 2080 - Programming with UNIX (2cr)
- CS 3060 - Object-Oriented Programming Using C++ (3cr)
- ECE 1411 - Logic Circuits I (2cr)
- ECE 2610 - Introduction to Signals and Systems (4cr)
- MATH 2350 - Calculus III (4cr)

Spring Semester (15 credit hours)

- ECE 2205 - Circuits and Systems I (4cr)
- ECE 2411 - Logic Circuits II (2cr)
- MATH 2150 - Discrete Math (3cr)
- MATH 3400 - Introduction to Differential Equations (3cr)
- Social Science/Humanities Elective (3cr)

JUNIOR YEAR

Fall Semester (16 credit hours)

- ECE 3210 - Electronics I (3cr)

Spring Semester (16-18 credit hours)

- CS 3300 - Software Engineering I (3cr)

- ECE 3420 - Microprocessor Systems Laboratory (1cr)
- ECE 3430 - Introduction to Microcomputer Systems (3cr)
- ECE 4242 - Advanced Digital Design Methodology (3cr)
- ENGL 2090 - Technical Writing and Presentation (3cr)
- Social Science/Humanities Elective (3cr)

- ECE 3440 - Microcomputer Systems Laboratory (1cr)
- ECE 3610 - Engineering Probability and Statistics (3cr)
- ECE 4480 - Computer Architecture and Design (3cr)
  or CS 4200 - Computer Architecture I
- Basic Science Course with lab content (3, 4 or 5cr)
- Social Science/Humanities Elective (3cr)

SENIOR YEAR

Fall Semester (14-16 credit hours)

- CS 4500 - Operating Systems I (3cr)
- CS 4720 - Design and Analysis of Algorithms (3cr)
- ECE 4330 - Embedded Systems Design (3cr)
- ECE 4890 - Senior Seminar (1cr)
- Technical Elective (3cr)
- Basic Science Course (1, 2 or 3cr)

Spring Semester (16 credit hours)

- ECE 4899 - Senior Design Project (3cr)
- Technical Electives (7cr)
- Distribution Course (3cr)
- Free Elective (3cr)

Total Credit Hours: 128

ELECTRICAL ENGINEERING, BS

LEARNING OUTCOMES

The Department of Electrical and Computer Engineering has established the following educational outcomes for the Bachelor of Science degree program in Electrical Engineering (BSEE).

By the time of graduation, students are expected to demonstrate:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments as well as to analyze and interpret data
- An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multi-disciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively

- The acquisition of the broad education necessary to understand the impact of engineering solution in a global, economic, environmental and social context
- A recognition of the need for, and an ability to engage in, lifelong learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

OBJECTIVES

The educational objectives of the Bachelor of Science degree program in Electrical Engineering are statements that describe the accomplishments of graduates 3-5 years post graduation:

1. **Illuminate**-lifelong learning in electrical engineering. Alumni are expected to learn new engineering technologies as needed and pursue graduate school to technology careers, including but not limited to technical development, project management and technical sales.
2. **Investigate**-demonstration of electrical engineering principles. Alumni should have the ability to find and access information relevant to an application under development and have the ability to understand and approach various engineering problems and convert them into engineering products.
3. **Innovate**-creative application of electrical engineering principles. Alumni should be able to apply the theory and techniques of electrical engineering to innovate real-world solutions.

DEGREE REQUIREMENTS

The Bachelor of Science degree in Electrical Engineering requires the following:

- completion of at least 128 credit hours
- participation in the Exit Interview
- a minimum of 2.0 average in all ECE and CU courses taken
- a minimum of 2.0 in ECE 1411, ECE 2610, and ECE 2411

COURSE REQUIREMENTS

Mathematics (18 Credit Hours)

Required mathematics courses (15 credit hours)

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3400 - Introduction to Differential Equations

Mathematics elective (3 credit hours)

- Select one course numbered 3110 or above (except MATH 3810)

Basic Science (16 Credit Hours)

Required science courses (11 credit hours)

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II

- PES 2130 - General Physics III
- GEOL 1010 - Physical Geology
- GEOL 1020 - Historical Geology

Students may also complete any other PES courses with a prerequisite of PES 1110. Please talk with an advisor to make sure the courses are approved in the program prior to completion.

Computer Background (6 Credit Hours)

- ECE 1001 - Introduction to Robotics
- ECE 1021 - Computer-Based Modeling and Methods of Engineering

Social Sciences and Humanities (15 Credit Hours)

Studies in the humanities and social sciences serve not only to meet the objectives of a broad education, but also to meet the objectives of the engineering profession.

College of Engineering and Applied Science students are required to take at least 15 credit hours of social sciences and humanities to be more aware of social responsibilities and able to consider related factors in the decision-making process. To ensure this, a minimum of nine (9) credit hours in social sciences and six (6) credit hours in humanities, or vice versa, must be taken; at least six (6) of these credit hours must be beyond the introductory level (2000 level or higher courses).

In place of 3 credit hours of social sciences and humanities, GPS 1010 - Gateway Program Seminar may be taken during the fall semester of the first year in the program. The balanced adjustment between social science and humanities for students completing ID 1010 is six (6) credit hours and six (6) credit hours, respectively, with the 2000 level or higher course requirement unchanged.

SOCIAL SCIENCE DEPARTMENTS: Anthropology, Communications, Economics, Geography and Environmental Studies, Gerontology, Political Science, Psychology, Sociology, and Women's and Ethnic Studies

HUMANITIES DEPARTMENTS: Art History, English (1500 or higher classes), History, Humanities, Music (except choir or lessons), and Philosophy

Communication Skills (6 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 2090 - Technical Writing and Presentation

Electrical Engineering Core (44 Credit Hours)

- ECE 1411 - Logic Circuits I
- ECE 2411 - Logic Circuits II
- ECE 2050 - Introduction to Physical Electronics
- ECE 2205 - Circuits and Systems I
- ECE 3205 - Circuits and Systems II
- ECE 2610 - Introduction to Signals and Systems
- ECE 3020 - Semiconductor Devices I
- ECE 3110 - Electromagnetic Fields I
- ECE 3210 - Electronics I
- ECE 3220 - Electronics II
- ECE 3230 - Electronics Laboratory I
- ECE 3240 - Electronics Laboratory II

- ECE 3420 - Microprocessor Systems Laboratory
- ECE 3430 - Introduction to Microcomputer Systems
- ECE 3610 - Engineering Probability and Statistics
- ECE 4890 - Senior Seminar
- ECE 4899 - Senior Design Project

Electrical Engineering Technical Electives (14 Credit Hours)
Select any four of the following 3-credit-hour courses (students must meet course prerequisites):

- ECE 3120 - Electromagnetic Fields II
- ECE 4020 - Semiconductor Devices II
- ECE 4242 - Advanced Digital Design Methodology
- ECE 4340 - VLSI Circuit Design I
- ECE 4480 - Computer Architecture and Design
- ECE 4510 - Feedback Control Systems
- ECE 4625 - Communication Systems I
- ECE 4650 - Modern Digital Signal Processing
- ECE 4910 - Power Systems II

Total Specified Technical Electives: 12 Credit Hours

Select any two of the following 1-credit-hour specialty labs (students must meet course prerequisites):

- ECE 3440 - Microcomputer Systems Laboratory
- ECE 4040 - Introductory VLSI Fabrication Laboratory
- ECE 4150 - Microwave Measurements Laboratory
- ECE 4200 - Advanced Digital Design Laboratory
- ECE 4530 - Control Systems Laboratory
- ECE 4560 - Digital Control Laboratory
- ECE 4670 - Communications Laboratory
- ECE 4680 - Signal Processing Laboratory

Total Specialty Labs: 2 Credit Hours

Other Technical Electives (9 Credit Hours)
Additional technical electives may be chosen from the list below, as well as ECE courses at 3000 or 4000 level.

Other courses in BIOL, CHEM, CS, MAE, MATH and PES numbered 4000+ may be accepted with a petition completed prior to taking the course.

- BIOL 3000 - Biostatistics
- BIOL 3020 - Cell Biology
- BIOL 3100 - Microbiology: Bacteriology/Mycology
- BIOL 3140 - Microbiology: Virology
- BIOL 3220 - Animal Physiology
- BIOL 3300 - Exercise Physiology
- BIOL 3610 - Developmental Biology
- BIOL 3700 - General Ecology
- BIOL 3830 - Genetics
- BIOL 3910 - Immunology
- CHEM 3001 - Organic Chemistry

- CHEM 3002 - Organic Chemistry Laboratory
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II
- CHEM 3203 - Organic Chemistry Lab for Majors I
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- CHEM 4521 - Environmental Chemistry
- CS 3010 - Web Programming
- CS 3060 - Object-Oriented Programming Using C++
- CS 3160 - Concepts of Programming Languages
- CS 3300 - Software Engineering I
- MAE 3130 - Fluid Mechanics
- MAE 3201 - Strength of Materials
- MAE 3401 - Modeling and Simulation of Dynamic Systems
- MATH 3110 - Theory of Numbers
- MATH 3130 - Introduction to Linear Algebra
- MATH 3410 - Introduction to Analysis
- MATH 3500 - Graph Theory
- MATH 3510 - Topics in Combinatorial Analysis
- PES 3060 - Astrophysics
- PES 3130 - Modern Physics
- PES 3210 - Classical Mechanics I
- PES 3410 - Thermodynamics and Statistical Mechanics
- PES 3650 - Nuclear Physics and Energy Technology
- PES 3670 - Exotic Energy Sources

Sample Schedule

FRESHMAN YEAR

Fall Semester (16 credit hours)

- ECE 1001 - Introduction to Robotics
- ECE 1411 - Logic Circuits I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
  or
  GPS 1010 - Gateway Program Seminar
- MATH 1350 - Calculus I
- PES 1110 - General Physics I - Calculus Based

Spring Semester (16 credit hours)

- ECE 1021 - Computer-Based Modeling and Methods of Engineering
- MATH 1360 - Calculus II
- PES 1120 - General Physics II
- Social Science/Humanities Elective (3cr)
  or
  ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing

SOPHOMORE YEAR

Fall Semester (16 credit hours)

- ECE 2610 - Introduction to Signals and Systems
- MATH 2350 - Calculus III
- Basic Science course with Laboratory (5cr)
- Social Science/Humanities Elective (3cr)

Spring Semester (16 credit hours)

- ECE 2050 - Introduction to Physical Electronics
- ECE 2205 - Circuits and Systems I
- ECE 2411 - Logic Circuits II
- ENGL 2090 - Technical Writing and Presentation
- MATH 3400 - Introduction to Differential Equations
- PES 2130 - General Physics III

JUNIOR YEAR

Fall Semester (15 credit hours)

- ECE 3020 - Semiconductor Devices I
- ECE 3205 - Circuits and Systems II
- ECE 3210 - Electronics I
- ECE 3230 - Electronics Laboratory I
- ECE 3420 - Microprocessor Systems Laboratory
- ECE 3430 - Introduction to Microcomputer Systems

Spring Semester (17 credit hours)

- ECE 3110 - Electromagnetic Fields I
- ECE 3220 - Electronics II
- ECE 3240 - Electronics Laboratory II
- ECE 3610 - Engineering Probability and Statistics
- Technical Electives (4cr)
- Social Science/Humanities Elective (3cr)

SENIOR YEAR

Fall Semester (16 credit hours)

- ECE 4890 - Senior Seminar
- Technical Electives (9cr)
- Mathematics Elective (3cr)
- Social Science/Humanities Elective (3cr)

Spring Semester (16 credit hours)

- ECE 4899 - Senior Design Project
- Technical Electives (10cr)
- Social Science/Humanities Elective (3cr)

Total Credit Hours: 128

CONCURRENT BACHELOR/MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

The Concurrent Bachelor's/Master's degree program in the Electrical and Computer Engineering (ECE) department offers the opportunity of pursuing the Bachelor of Science (BS) in Electrical Engineering and Master of Science (MS) in Electrical Engineering, leading to award of both degrees at the completion of the joint program. The main benefit of the program is that it allows for up to six (6) credit hours to be used for both the BS and MS. The program is normally a 5-6 year program designed for currently enrolled University of Colorado at Colorado Springs (UCCS) students.

The requirements for the concurrent program are equivalent to aggregate of the BS and MS degrees, except that up to six (6) credits hours can be applied toward both the BS and MS requirements. Students admitted to the

concurrent degree program will maintain their undergraduate standing until the mid-program review which will determine the student's eligibility to continue in the concurrent degree program. The mid-program review will be conducted the semester in which the student will complete the BS requirements. A student will be considered eligible to continue upon meeting the following minimum standards and criteria: completion of the requirements for a Bachelor of Science in Electrical Engineering, maintenance of a minimum cumulative G.P.A. of 3.25 or better, and maintenance of full-time status (defined below).

Upon determination of eligibility to continue, the student will be recommended for formal admission to the Graduate School. Such a recommendation must be made by the ECE Graduate Committee. Upon approval of the recommendation, the office of the Dean of the Graduate School will complete the necessary procedures to admit the candidate as a graduate student for the completion of their program. Any students not recommended for continuation in the concurrent degree program will be eligible to complete their Bachelor's degree. Upon successful completion of the concurrent degree program, both the Bachelor of Science in Electrical Engineering and Master of Science in Electrical Engineering will be awarded simultaneously.

ADMISSION AND PROGRAM REQUIREMENTS

1. Students in the concurrent degree program must be full-time continuously enrolled students (average 24 undergraduate credits or more per year, or 18 graduate credits per year, or equivalent combinations thereof such as 12 undergraduate and 9 graduate credits). Students must maintain a minimum cumulative G.P.A. of 3.25 throughout their enrollment.
2. Only currently enrolled UCCS students in the Electrical Engineering program may be considered for admission to the program. Transfer students must complete at least 24 credit hours in the BS in EE program before applying to the concurrent program.
3. Students may apply for the concurrent program after they have completed a minimum of 30 credit hours of the Electrical Engineering core courses. Applications will be accepted up until the graduate school admissions deadline for the department for the final semester of the undergraduate program. Minimum standards for admission require a cumulative G.P.A. of 3.25. The ECE Graduate Studies Committee will be responsible for admissions procedures and decisions.
4. Issues of satisfactory academic progress, petition/appeal, transfer credit and grievance will be the responsibility of the concurrent program administrator with participation by the ECE Chair, EAS Dean, and Graduate Dean as appropriate. The concurrent program administrator will be responsible for dismissing or placing on probation those students who do not maintain the minimum requirements stated above.
5. Students who drop out or are dismissed from the concurrent program and have not yet had their mid-program review will be eligible to complete their Bachelor's degree, subject to the normal rules of that program. Students who drop out or are dismissed from the concurrent program after having had a successful mid-program review will be awarded the Bachelor of Science. They will be eligible to apply to the ECE Master's program and transfer credits (subject to normal limitations) that were not used toward the Bachelor of Science.
6. Students who are admitted to the concurrent program may not pursue a double degree or double major. Minor programs may be pursued.
7. Concurrent degree students may not be admitted to a Ph.D. program prior to completion of both the Bachelor's and the Master's degrees.

Students in the concurrent degree program may be eligible for RA/TA appointments at the discretion of their department. Undergraduate students are eligible, under the normal rules of appointment or eligibility, for RA/TA

appointments, scholarships, fellowships or other types of support or recognition which would normally be available to undergraduate students. Likewise, students who have been approved and admitted to graduate student status will be eligible for RA/TA appointments, scholarships, fellowships or other types of support or recognition which would normally be available to graduate students.

ELECTRIC DRIVETRAIN TECHNOLOGY GRADUATE CERTIFICATE

The College of Engineering and Applied Science offers a Graduate Certificate in Electric Drivetrain Technology to qualified students. The program has been designed to provide professionals involved in power electronics, battery controls, and/or automotive industries the capability and motivation to continue with post-graduate education. These potential students may not wish to pursue an in-depth rigorous Master of Science program but nonetheless desire to increase their professional capability and enhance career advancement opportunities.

REQUIRED PREREQUISITE KNOWLEDGE

1. *Technical undergraduate degree:* Bachelor's degree in Electrical Engineering, Computer Engineering, or Mechanical Engineering from an accredited university, or Bachelor's degree in a closely related engineering discipline from an accredited university plus completion of all necessary course prerequisites to the certificate courses with a grade of "B" or better.

2. *Evidence of mathematical maturity equivalent to completion with a grade of "B" or better for the all of the following college-level coursework:*

- Calculus III, Linear Algebra, and Differential Equations
- Physics III (calculus based) and General Chemistry I
- Circuits II, Electronics I, and Linear Systems

3. *An undergraduate grade point average (GPA) of 2.75/4.0 or better.*

CERTIFICATE COMPLETION

A grade of "B" or better in each course must be achieved. Certificate courses must be completed within two (2) years from the start of coursework.

COURSE REQUIREMENTS

Students must complete the following four courses in the graduate certificate either at the campus listed or through online study:

- ECE 5710 - Modeling, Simulation, and Identification of Battery Dynamics (UCCS)
- ECE 5720 - Battery Management and Control (UCCS)
- ECEN 5017 - Power electronics for Electric Drive Vehicles (CU-Boulder)
- ECEN 5737 - Adjustable Speed AC Drives (CU-Boulder)

CONTACT INFORMATION

For more information on the Certificate or application procedures, please contact the office of Online Graduate Programs at enonline@uccs.edu or call 719-255-3246.

ENGINEERING - CONCENTRATION IN ELECTRICAL ENGINEERING, PHD

The Department of Electrical and Computer Engineering supports a PhD program in Electrical Engineering as part of the PhD in Engineering degree. Students who are interested in research areas in electrical engineering and would like to pursue the PhD in Engineering degree should contact the ECE Department at (719) 255-3548. Further information is also available here.

LEARNING OBJECTIVES

- The candidate must have a broad knowledge of science, math and engineering.
- The candidate must have in-depth knowledge of the specific area in which the thesis research will be conducted.
- The candidate must be able to read, understand, and evaluate professional literature on advanced topics in engineering and applied science.
- The candidate must be able to write technical reports and project documentation.
- The candidate must be able to make oral presentations of technical information.
- The candidate must demonstrate the capability to make fundamental and significant contributions in the area of engineering and applied science, mathematics, and engineering disciplines, along with the tools of research, to perform analysis and synthesis and to visualize potential areas of application.

ADMISSION REQUIREMENTS

Regular admission to the PhD program requires the following:

1. A 3.3 grade point average (GPA) on all previous college work, including both graduate and undergraduate.
2. The Graduate Record Examinations (GRE) may be required if the applicant falls below this GPA or is not a graduate of an ABET accredited undergraduate program in electrical engineering. The verbal reasoning and quantitative reasoning portions of the GRE are required of all foreign applicants.
3. Graduates of foreign universities are required to take the TOEFL exam: A score of 550-600 on the paper-based exam or, 79 or 80 on the Internet based exam is required.

Students not admitted on a regular basis may be admitted on a provisional basis depending on their over-all application file, including GPA, GRE, letters of recommendation, etc.

Students admitted on a provisional basis are often required to take remedial courses (these are specified in the letter of acceptance). Registration for such remedial courses must commence with the first semester of a student's program with at least three credits completed per semester until all remedial requirements are satisfied.

APPLICATION DEADLINES

To apply, prospective students should contact the ECE Department.

Applications are reviewed on a continual basis, but need to be received by April 1 (fall admission) or October 1 (spring admission) for students who are applying for assistantships. It is recommended that international students apply at least three months prior to the start of the semester to allow time to request a visa. Limited fellowships and assistantships are available.

CURRENT RESEARCH AREAS OF ECE DEPARTMENT FACULTY

Dr. Carlos A. Paz de Araujo—Microelectronics
Dr. T.S. Kalkur—Microelectronics, VLSI Circuit Design
Dr. Gregory L. Plett—Adaptive Signal Processing and Control
Dr. Hoyoung (Heather) Song—Electromagnetics
Dr. Chia-Jiu (Charlie) Wang—Computer Engineering
Dr. Mark A.Wickert—Communications, Signal Processing

DEGREE REQUIREMENTS

The PhD degree is awarded to students who have satisfied the requirements of duration of program, who have submitted an acceptable dissertation, and who have passed all prescribed examinations.

Requirements for students entering with a Master's Degree:

- Complete 24 semester hours of coursework
- At least 12 semester hours must be ECE courses
- At most 6 semester hours may be independent study courses.
- All 24 semester hours must be numbered 5000 and above whether ECE or non-ECE.

Requirements for students entering without a Master's Degree:

- Must complete 48 semester hours of coursework.
- At least 24 semester hours must be ECE courses.
- At most 12 semester hours may be independent study courses.
- All 48 semester hours must be numbered 5000 and above whether ECE or non-ECE.

IN ALL CASES: CROSS-LISTED COURSES WHICH ARE OFFERED AT THE 5000/6000 LEVELS MUST BE TAKEN AT THE 6000 LEVEL. ALL COURSEWORK MUST BE NUMBERED 5000 AND ABOVE.

Requirements for all students:

- Complete 30 semester hours of dissertation research in addition to coursework.
- Have an overall graduate GPA of 3.0 in order to graduate.
- Have a grade of B- or better in all courses applied toward the PhD degree.
- Pass the Preliminary Examination, the Comprehensive Examination, and the final Defense of Dissertation.

No foreign language is required.

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING, MSEE

The Department of Electrical and Computer Engineering offers coursework and thesis supervision leading to the degree Master of Science in Electrical Engineering (MSEE).

LEARNING OUTCOMES

- Be able to read, interpret, and critically assess literature in specialized fields of electrical engineering and to evaluate its impact on current issues on engineering and society.
- Be able to write acceptable technical reports and other documentation.

- Be able to give acceptable oral presentations of a technical nature.
- Be able to apply basic and advanced knowledge in science, mathematics, and engineering disciplines to perform analysis and synthesis of engineering problems.

ADMISSION REQUIREMENTS

Guaranteed Early Admission

A student who is in his or her final semester studying toward either a BSEE or BSCpE at UCCS is guaranteed admission to the MSEE program if he or she satisfies the following criteria:

1. The student must have completed a maximum of 45 semester hours at UCCS at the time of graduation with the BS degree.
2. The student must be registered in his or her final undergraduate semester (in either the BSEE or BSCpE programs) at the time of application to the MSEE program.
3. The student must have a minimum undergraduate GPA of 3.25.
4. The student must submit a letter of recommendation from the current department chairperson.

Early admission is not available to students who are not residents of the United States of America.

Fast-track Admission

The fast-track admission process is designed to offer a more efficient admission process to former undergraduate students who have graduated from UCCS no more than four years prior to the time of application to a graduate program. A student applying under the fast-track admission rules must submit the following to the Department:

- The Fast-Track Admission application form, accurately and completely filled out
- A completed residency form(back of application form), if the student claims in-state-tuition eligibility
- A check or money order (for the appropriate amount) nonrefundable application fee
- Official transcripts for any university level studies attempted after graduation from UCCS
- A statement giving permission to the ECE graduate program office to obtain an internal transcript from SIS for the applicant. These forms are available from the ECE office, and must be signed by the student
- A letter of recommendation (which may consist of a signed letter from the chairperson of the student's former undergraduate department). Any student with a record that will only allow provisional admission must provide a minimum of two letters of recommendation, using the forms available from the ECE office.

Fast-track admission is only available to graduates of the College of EAS.

Regular Admission

Regular admission to the MSEE program requires the following:

- A 3.0 undergraduate grade point average (GPA)
- The Graduate Record Examinations (GRE) may be required of any student whose GPA falls below this average or is not a graduate of an ABET accredited undergraduate program in electrical engineering. The verbal reasoning and quantitative reasoning portions of the GRE are required of all foreign applicants.

Graduates of foreign universities are required to take the TOEFL exam: A score of 550-600 on the paper-based exam or, 79 or 80 on the Internet-based exam is required.

Note that units completed before admission may not all be transferable into a graduate degree program.

Provisional Admission
Students not admitted on a regular basis may be admitted on a provisional basis depending on their overall application file, including GPA, GRE, letters of recommendation, etc. Students admitted on a provisional basis are often required to take remedial courses (these are specified in the letter of acceptance). Registration for such remedial courses must commence with the first semester of a student's program with at least three credits completed per semester until all remedial requirements are satisfied.

APPLICATION DEADLINES

Applications are reviewed on a continual basis, but need to be received by April 1 (fall admission) or October 1 (spring admission) for students who are applying for assistantships. It is recommended that international students apply at least three months prior to the start of the semester to allow time to request a visa.

For more information about these programs, contact the Department of Electrical and Computer Engineering, Graduate Program, Engineering Bldg. Room 299, or call (719) 255-3548. Send an e-mail to ecedept@eas.uccs.edu or visit our website for application materials and more information.

DURATION OF PROGRAM

The completion of the MSEE degree is normally accomplished in one to three years, and should be accomplished in six years, commencing with the beginning of coursework. A student who is not continuously enrolled (missing three consecutive semesters) becomes inactive and is subject to them rules governing READMISSION OF FORMER STUDENTS outlined in the Graduate School procedures.

COURSE REQUIREMENTS

Thesis Option

- 30 semester hours total; 24 semester hours of coursework; 6 hours of thesis credit.
- At least 18 semester hours must be ECE courses. The remaining 6 semester hours may be replaced by allied department courses (e.g., computer science, mathematics, physics, mechanical and aerospace engineering, etc.).
- At most 6 semester hours may be independent study courses.

Non-Thesis Option

- 30 semester hours total; all 30 semester hours are coursework.
- At least 24 semester hours must be ECE courses.
- The remaining 6 semester hours may be replaced by allied department courses (e.g., computer science, mathematics, physics, mechanical and aerospace engineering, etc.).
- At most 6 semester hours may be independent study courses.
- The student must choose an Advisory Committee with the same composition as a Thesis Committee; choose a subject for his/her Master's Report that must be approved by his/her academic advisor; and make an oral presentation and submit a written report to the advisory committee. Both must be approved by the committee.

In either case: Cross-listed courses which are offered at the 4000/5000 levels must be taken at the 5000 level. All coursework must be numbered 5000 and above if ECE, or 4000 and above if non-ECE. Up to 9 semester hours

of accepted coursework may be transferred from another university (including other universities of the CU system) or from coursework taken as an unclassified student.

Grades
The student must have an overall graduate GPA of 3.0 in order to graduate. The student must have a grade of C or better in all courses applied toward the MSEE degree.

Defined Master's Option
The defined MSEE provides options leading toward a MSEE in two years by taking two courses per semester. This program has been designed for graduate students who work full-time. Most courses listed in the defined master's are offered in the evening and will generally be scheduled after 4:30 p.m. See our web page for current program options.

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING IN BATTERY CONTROLS, MSEE-BC

The Department of Electrical and Computer Engineering offers coursework and thesis supervision leading to the degree Master of Science in Electrical Engineering with an option in Battery Controls (MSEE-BC).

ADMISSION REQUIREMENTS

Students who desire admission to the MSEE-BC degree must additionally request, in writing, entrance to the Battery Controls option. Entrance to the Battery Controls option may be requested either at the time of application to the MSEE, or subsequent to admission to the MSEE, but prior to conferral of the degree.

Standard admission to the MSEE-BC requires, in addition to standard MSEE requirements, evidence of academic maturity equivalent to completion with a grade of "B" or better of the following university-level coursework:

- Mathematics: Calculus III, Linear Algebra, Differential Equations
- Science: Physics III - calculus based, General Chemistry I
- Engineering: Circuits II, Electronics I, Linear Systems

Guaranteed Early Admission
A student who is in his or her final semester studying toward either a BSEE or BSCpE at UCCS is guaranteed admission to the MSEE-BC program if he or she satisfies the following criteria:

1. The student must have completed a maximum of 45 semester hours at UCCS at the time of graduation with the BS degree.
2. The student must be registered in his or her final undergraduate semester (in either the BSEE or BSCpE programs) at the time of application to the MSEE program.
3. The student must have a minimum undergraduate GPA of 3.25.
4. The student must submit a letter of recommendation from the current department chairperson.

Early admission is not available to students who are not residents of the United States of America.

Fast-track Admission
The fast-track admission process is designed to offer a more efficient admission process to former undergraduate students who have graduated from UCCS no more than four years prior to the time of application to a graduate program. A student applying under the fast-track admission rules must submit the following to the Department:

- The Fast-Track Admission application form, accurately and completely filled out
- A completed residency form(back of application form), if the student claims in-state-tuition eligibility
- A check or money order (for the appropriate amount) nonrefundable application fee
- Official transcripts for any university level studies attempted after graduation from UCCS
- A statement giving permission to the ECE graduate program office to obtain an internal transcript from SIS for the applicant. These forms are available from the ECE office, and must be signed by the student
- A letter of recommendation (which may consist of a signed letter from the chairperson of the student's former undergraduate department). Any student with a record that will only allow provisional admission must provide a minimum of two letters of recommendation, using the forms available from the ECE office.

Fast-track admission is only available to graduates of the UCCS College of Engineering & Applied Sc.

Regular Admission
Regular admission to the MSEE program requires the following:

- A 3.0 undergraduate grade point average (GPA)
- The Graduate Record Examinations (GRE) may be required of any student whose GPA falls below this average or is not a graduate of an ABET accredited undergraduate program in electrical engineering. The verbal reasoning and quantitative reasoning portions of the GRE are required of all foreign applicants.

Graduates of foreign universities are required to demonstrate proficiency in English with the TOEFL, IELTS or other methods approved by the ECE Graduate Studies Committee.

Note that units completed before admission may not all be transferable into a graduate degree program.

Provisional Admission
Students not admitted on a regular basis may be admitted on a provisional basis depending on their overall application file, including GPA, GRE, letters of recommendation, etc. Students admitted on a provisional basis are often required to take remedial courses (these are specified in the letter of acceptance). Registration for such remedial courses must commence with the first semester of a student's program with at least three credits completed per semester until all remedial requirements are satisfied.

APPLICATION DEADLINES

Applications are reviewed on a continual basis, but need to be received by April 1 (fall admission) or October 1 (spring admission) for students who are applying for assistantships. It is recommended that international students apply at least three months prior to the start of the semester to allow time to request a visa.

For more information about these programs, contact the Department of Electrical and Computer Engineering, Engineering Bldg. Room 299, or call (719) 255-3548. Send an e-mail to Eva Wynhorst at ewynhors@uccs.edu or visit our website for application materials and more information.

DURATION OF PROGRAM

The completion of the MSEE-BC degree is normally accomplished in one to three years, and should be accomplished in six years, commencing with the beginning of coursework. A student who is not continuously enrolled (missing three consecutive semesters) becomes inactive and is subject to them rules governing Readmission of Former Students outlined in the Graduate School procedures.

COURSE REQUIREMENTS

Required Core Courses

Student completes the following six 3-credit-hour core courses:

- ECE 5710 - Modeling, Simulation, and Identification of Battery Dynamics
- ECE 5720 - Battery Management and Control
- ECE 5550 - Applied Kalman Filtering
- ECE 5560 - System Identification
- ECE 5570 - Optimization Methods in Systems and Control
- ECE 5590 - Model Predictive Control

Elective Courses

Student chooses two three-semester-hour elective courses from the following list if receiving an MSEE-BC with thesis track; otherwise student chooses four three-semester-hour elective courses from the following list:

- ECEN 5007 (CU-Boulder)
- ECEN 5737 (CU-Boulder)

- ECE 5510 - Feedback Control Systems
- ECE 5520 - Multivariable Control Systems I
- ECE 5530 - Multivariable Control Systems II
- ECE 5540 - Digital Control Systems
- ECE 5580 - Multivariable Control Systems: Analysis and Design in the Frequency Domain

Substitutions/Exceptions

Student may substitute up to two different relevant graduate courses from the Electrical and Computer Engineering or affiliated departments for elective courses with approval of the MSEE-BC program director. Student may not substitute any core course unless already taken by the student and applied to another degree. In that case, student may substitute from the elective course list.

Acceptable Grades

The student must have an overall graduate GPA of 3.0 in order to graduate. The student must have a grade of "C" or better in all courses applied toward the MSEE-BC degree option.

SAMPLE PROGRAM

Full-Time Students (One-Year Plan)

Fall semester (15 credit hours)

- Course from elective list
- Course from elective list (non-thesis track), or determine thesis topic (thesis track)
- ECE 5710
- ECE 5550
- ECE 5570

Spring Semester (15 credit hours)

- ECE 5720
- ECE 5560

- ECE 5590
- Course from elective list
- Course from elective list (non-thesis track), or determine thesis topic (thesis track)

Summer Semester

- MSEE project and Master's report (non-thesis track) or Thesis (thesis-track)

Part-Time Students (Two-Year Plan)

Year 1

Fall Semester (6 credit hours)

- ECE 5710
- ECE 5570

Spring Semester (6 credit hours)

- ECE 5720
- ECE 5590
- Determine thesis topic/background research (thesis track)

Summer Semester (3-6 credit hours)

- Two courses from elective list (non-thesis option) or thesis research (thesis track)

Year 2

Fall Semester (6 credit hours)

- ECE 5550
- Course from elective list

Spring Semester (6 credit hours)

- ECE 5560
- Course from elective list

Summer Semester (0-3 credit hours)

- MSEE project and Masters Report (non-thesis track) or Thesis (thesis track)

COMPUTER ENGINEERING MINOR

GENERAL REQUIREMENTS

The minor in Computer Engineering requires the following:

- at least 25 credit hours of coursework (The student will be responsible for any prerequisites to required courses.)
- a 2.0 minimum is required on all coursework.

COURSE REQUIREMENTS

- ECE 1001 - Introduction to Robotics
- ECE 1021 - Computer-Based Modeling and Methods of Engineering
- ECE 1411 - Logic Circuits I
- ECE 2411 - Logic Circuits II
- ECE 3420 - Microprocessor Systems Laboratory

- ECE 3430 - Introduction to Microcomputer Systems
- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms
- CS 2080 - Programming with UNIX
- CS 3300 - Software Engineering I

ELECTRICAL ENGINEERING MINOR

GENERAL REQUIREMENTS

The minor in Electrical Engineering requires the following:

- at least 22 credit hours of coursework (The student will be responsible for any prerequisites to required courses.)
- every course in the minor must be completed with a grade of C or better.

At most, 9 credit hours of transfer work may be applied to the minor.

Required Core Courses (10 Credit Hours)

- ECE 1001 - Introduction to Robotics
- ECE 1021 - Computer-Based Modeling and Methods of Engineering
- ECE 2610 - Introduction to Signals and Systems

Choose one of the following areas:

Computers (14 Credit Hours)

- ECE 1411 - Logic Circuits I
- ECE 2411 - Logic Circuits II
- ECE 3420 - Microprocessor Systems Laboratory
- ECE 3430 - Introduction to Microcomputer Systems
- ECE 3440 - Microcomputer Systems Laboratory
- ECE 4480 - Computer Architecture and Design

Electronics (15 Credit Hours)

- ECE 2050 - Introduction to Physical Electronics
- ECE 2205 - Circuits and Systems I
- ECE 3210 - Electronics I
- ECE 3220 - Electronics II
- ECE 3230 - Electronics Laboratory I
- ECE 3240 - Electronics Laboratory II

Electromagnetics (13 Credit Hours)

- ECE 2205 - Circuits and Systems I
- ECE 3110 - Electromagnetic Fields I
- ECE 3120 - Electromagnetic Fields II
- ECE 4110 - Electromagnetic Theory and Applications

Systems (14 Credit Hours)

- ECE 2205 - Circuits and Systems I
- ECE 3205 - Circuits and Systems II
- ECE 3610 - Engineering Probability and Statistics

And one of the following:

- ECE 4510 - Feedback Control Systems
- ECE 4625 - Communication Systems I

MECHANICAL AND AEROSPACE ENGINEERING

Osborne Center for Science & Engineering, Room A-437
(719) 255-3243
Fax: (719) 255-3042
http://eas.uccs.edu/MAE/
email: mae@uccs.edu

FACULTY

- **Professors:** Andrew Ketsdever (Chair), Michael Larson, and James Stevens
- **Professor Emeritus:** David Schmidt
- **Associate Professors:** Peter Gorder, Ken Lauderbaugh, Steven Tragesser, and Rebecca Webb
- **Assistant Professors:** Michael Calvisi and Bret Windom
- **Senior Instructor:** Julie Albertson
- **Instructors:** John Adams and Edward McBride

PROGRAMS COORDINATED BY THE DEPARTMENT

- Minor in Mechanical Engineering
- Minor in Aerospace Engineering
- Bachelor of Science in Mechanical Engineering
- Master of Science in Mechanical Engineering
- Concurrent Bachelor/Master of Science in Mechanical Engineering
- Doctor of Philosophy in Engineering

MECHANICAL AND AEROSPACE ENGINEERING STUDY

Mechanical Engineering is a core discipline, encompassing mechanics, materials science, thermal science, dynamics and controls, design, and manufacturing. Career opportunities are open to mechanical engineers in industry, government, and universities, as well as in other professions including business, law, and medicine. Mechanical engineers are employed in a wide range of industries including aerospace, automotive, chemical, computing, electronics, industrial machinery, manufacturing, mining, oceanography, petroleum, pharmaceuticals, power, printing, publishing, and textiles. Mechanical engineers usually engage in research, development, design, testing, manufacturing, operations and maintenance, marketing and sales, and administration.

The undergraduate curriculum in mechanical engineering incorporates mathematics, physics and chemistry; humanities/ social sciences; business; engineering science; electrical theory; measurement science; mechanical

engineering core courses (computer-aided drafting, dynamics and controls, solid and fluid mechanics, thermodynamics, materials science, and heat and mass transfer); and selected technical elective courses. These electives are designed to meet the needs of the industrial, commercial, governmental, and military communities, and to serve students' professional objectives.

Undergraduate students can participate in internship and cooperative educational programs with a variety of high-tech companies along the Front Range.

Undergraduate students also have many opportunities to become involved in discipline-related activities outside the classroom. The MAE Department has active chapters in the American Society of Mechanical Engineers (ASME), the American Institute of Aeronautics and Astronautics (AIAA), and the Society of Automotive Engineers (SAE).

Further, currently enrolled undergraduate students with exceptional academic records may obtain guaranteed early enrollment in mechanical and aerospace engineering graduate programs.

MECHANICAL ENGINEERING, BS

OBJECTIVES

The Department of Mechanical and Aerospace Engineering has established the following set of program educational objectives for the Bachelor of Science in Mechanical Engineering:

- Graduates will be able to use mechanical engineering principles, proficiencies, and technical information to pursue graduate school or engineering careers, including but not limited to design, development, project management, and technical sales.
- Graduates will be equipped to pursue continued lifelong growth and development in mechanical engineering, including learning and applying new engineering processes, tools, and technologies.
- Graduates will be able to contribute to the state-of-the-art in engineering design, research and problem solving, including consideration of professional responsibilities.

LEARNING OUTCOMES

Program outcomes describe what students are expected to know and be able to do by the time of graduation. These are as follows:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multi-disciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively

- The acquisition of the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for, and an ability to engage in lifelong learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills and modern engineering tools necessary for engineering practice
- An ability to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations); to model, analyze, design, and realize physical systems, components or processes
- An ability to work professionally in both the thermal and mechanical systems

The objectives are regularly reviewed by the constituents of the department's programs, including industrial representatives, students in the program, and the faculty of the department.

The objectives are used to focus the undergraduate degree program and assure the best possible education to our students.

ACADEMIC POLICIES

It is the responsibility of each student to know and follow all Academic policies established by the University and the College of Engineering and Applied Science (EAS) that are set forth in the Catalog.

Course Prerequisites
Students are responsible for knowing and completing all course prerequisites. Course prerequisites are strictly enforced for all classes at UCCS.

Restrictions and Limitations
Students must be admitted into the degree major in the College of Engineering and Applied Science at least 30 credit hours prior to graduation. Only three hours of Independent Study may count toward the degree. Work Experience/Military Science/ROTC credit will not apply toward fulfillment of the requirements for a degree from the College of Engineering.

Compass Curriculum
Compass Curriculum is the campus-wide general education program at UCCS. The Compass Curriculum has multiple components many of which will coincide with the degree requirements listed in this guide.

DEGREE REQUIREMENTS

The Bachelor of Science degree in Mechanical Engineering requires the following:

- A minimum of 127 hours must be completed with a cumulative CU grade point average of 2.0; at least 45 of these hours must be at the upper-division level (courses numbered 3000+).
- The last 30 hours of the degree must be completed while registered in the College of Engineering and Applied Science at UCCS.
- Courses numbered below 1000 do not count towards degree completion
- This guide is provided for student use only. It does not represent an official documentation of a student's progress towards completion of their degree program.

- Students must complete an Exit Interview with the MAE Department to graduate.

REQUIRED COURSES

Mechanical Engineering Core Courses (57 Credit Hours)

- MAE 1502 - Principles of Engineering
- MAE 1503 - Introduction to Engineering Design
- MAE 2055 - Mech-Etronics I
- MAE 2103 - Engineering Mechanics I
- MAE 2104 - Engineering Mechanics II
- MAE 2200 - Materials Engineering
- MAE 2301 - Engineering Thermodynamics I
- MAE 3005 - Engineering Measurement Laboratory
- MAE 3130 - Fluid Mechanics
- MAE 3201 - Strength of Materials
- MAE 3302 - Engineering Thermodynamics II
- MAE 3401 - Modeling and Simulation of Dynamic Systems
- MAE 3501 - Machine Design I
- MAE 4000 - Mechanical and Aerospace Engineering Seminar
- MAE 4120 - Machine Design II
- MAE 4310 - Heat Transfer
- MAE 4421 - Automatic Control of Aerospace and Mechanical Systems
- MAE 4510 - Engineering Design I
- MAE 4511 - Engineering Design II

Technical Electives (12 Credit Hours)

Complete 12 credit hours of technical electives. All courses must be numbered 3000 or higher and at least 6 hours must be completed from courses numbered 4000 or higher. At least 6 hours of the Technical Electives must be taken from MAE courses. The remaining Technical Electives should be chosen from CS, ECE, MAE, MATH (with at least MATH 1350 as a prerequisite) and PES (with at least MATH 1350 or PES 1110 as a prerequisite). PES 2130 General Physics III may be taken as a technical elective. MAE 3342 Engineering Economy can count either as a business or a technical elective.

Computing Requirement (3 Credit Hours)

- CS 1090 - Introduction to Programming Using MATLAB

Composition Courses (6 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 2090 - Technical Writing and Presentation
- PORT 3000 - Writing Portfolio Assessment

Mathematics (21 Credit Hours)

Math courses require a grade of C or better to progress through the Math sequence.

Complete all of the following courses:

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II

- MATH 2350 - Calculus III
- MATH 3130 - Introduction to Linear Algebra
- MATH 3400 - Introduction to Differential Equations
- MATH 3810 - Introduction to Probability and Statistics **or**
- ECE 3610 - Engineering Probability and Statistics

Basic Science (13 Credit Hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II

Compass Curriculum (9 Credit Hours)

Complete 6 hours of Humanities/Social Science electives from the following departments: AH, ANTH, COMM, ECON, ENGL (except ENGL 99, 1310, 1350, and 1410), FILM, GRNT, GES 1980 or GES 1990 only, HIST, ID 2000 or 4090, Languages, MUS (except choir or lessons), PHIL, PSC, PSY, SOC, VA, and WEST. At least 3 hours must be taken at the 2000+ level.

GPS 1010 Gateway Program Seminar must be completed by all students.

To see a list of all Compass Curriculum courses, please visit: www.uccs.edu/compasscurriculum.

Business (6 Credit Hours)

- MAE 3342 - Engineering Economy

  Complete one of the following courses:

- BUAD 1000 - Introduction to Business
- ENTP 1000 - Introduction to Entrepreneurship
- INOV 1010 - The Innovation Process
- ACCT 2010 - Introduction to Financial Accounting
- BLAW 2000 - Business Law
- BLAW 2010 - Business and Intellectual Property Law
- MKTG 3000 - Principles of Marketing
- MGMT 3300 - Introduction to Management and Organization

Sample Schedule

FRESHMAN YEAR

Fall Semester (17 Credit Hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- MAE 1502 Principles of Engineering
- GPS 1010 Gateway Program Seminar
- MATH 1350 Calculus I

Spring Semester (16 Credit Hours)

- MATH 1360 - Calculus II
- MAE 1503 - Introduction to Engineering Design
- PES 1120 - General Physics II
- CHEM 1401 General Chemistry I

- PES 1110 - General Physics I - Calculus Based
- CHEM 1402 General Chemistry Laboratory I

SOPHOMORE YEAR

Fall Semester (16 Credit Hours)

- MAE 2200 - Materials Engineering
- CS 1090 - Introduction to Programming Using MATLAB
- MATH 2350 - Calculus III
- MAE 2055 - Mech-Etronics I
- MAE 2103 - Engineering Mechanics I

Spring Semester (15 Credit Hours)

- MATH 3400 - Introduction to Differential Equations
- MATH 3810 - Introduction to Probability and Statistics **or** ECE 3610 - Engineering Probability and Statistics
- MAE 2104 - Engineering Mechanics II
- MAE 2301 - Engineering Thermodynamics I

JUNIOR YEAR

Fall Semester (18 Credit Hours)

- ENGL 2090 - Technical Writing and Presentation
- MATH 3130 - Introduction to Linear Algebra
- MAE 3005 - Engineering Measurement Laboratory
- MAE 3201 - Strength of Materials
- MAE 3302 - Engineering Thermodynamics II
- MAE 3401 - Modeling and Simulation of Dynamic Systems

Spring Semester (16 Credit Hours)

- MAE 3130 - Fluid Mechanics
- MAE 3131 - Fluid Mechanics Laboratory
- MAE 3501 - Machine Design I
- MAE 4421 - Automatic Control of Aerospace and Mechanical Systems
- Technical Elective (3 cr)
- Compass Curriculum Course (3 cr)

SENIOR YEAR

Fall Semester (16 Credit Hours)

- MAE 3310 - Heat and Mass Transfer
- MAE 3311 - Heat Transfer Laboratory
- MAE 4120 - Machine Design II
- MAE 4000 Mechanical and Aerospace Engineering Seminar
- MAE 4510 - Engineering Design I
- Business Elective (3cr)
- Technical Elective (3 cr)

Spring Semester (15 Credit Hours)

- MAE 4511 - Engineering Design II
- Compass Curriculum (3 cr)
- Business Elective (3 cr)
- 2 Technical Electives (6 cr)

Total Credit Hours: 129

CONCURRENT BACHELOR/MASTER OF SCIENCE IN MECHANICAL ENGINEERING

The Concurrent Bachelor's/Master's degree program in the Mechanical and Aerospace Engineering department (MAE) offers the opportunity of pursuing the Bachelor of Science (BS) in Mechanical Engineering and Master of Science (MS) in Mechanical Engineering, leading to award of both degrees at the completion of the joint program. All the normal requirements for both degrees must be satisfied, except that 6 credit hours can be used for both the BS and MS. The program is normally a 5-6 year program designed for currently enrolled University of Colorado at Colorado Springs (UCCS) students.

Students admitted to the concurrent degree program will maintain their undergraduate standing until completing the BS requirements. Students in the concurrent degree program must be full-time continuously enrolled students (average 24 undergraduate credits or more per year, or 18 graduate credits per year, or equivalent combinations thereof such as 12 undergraduate and 9 graduate credits). Students must maintain a minimum cumulative G.P.A .of 3.25 throughout their enrollment. Any student not satisfying these requirements may be dismissed from the concurrent degree program, but will be eligible to complete their Bachelor's degree.

ADMISSION REQUIREMENTS

1. Only currently enrolled UCCS students in the Mechanical Engineering program may be considered for admission to the program. Transfer students must complete at least 24 credit hours in the Mechanical Engineering BS program before applying to the concurrent program.
2. Students may apply for the concurrent program after they have completed a minimum of 30 credit hours of the mechanical engineering core courses. Applications will be accepted until the graduate school admissions deadline for the department for the final semester of the undergraduate program.
3. Minimum standards for admission require a cumulative G.P.A. of 3.25.

ENGINEERING - CONCENTRATION IN MECHANICAL AND AEROSPACE ENGINEERING, PHD

The Department of Mechanical and Aerospace Engineering supports a PhD program in Mechanical and Aerospace Engineering as part of the PhD in Engineering degree. Students who are interested in research areas in mechanical and aerospace engineering, and would like to pursue the PhD in Engineering degree should contact the Department at (719) 255-3243.

LEARNING OUTCOMES

- Demonstrate an ability to interpret and critically assess literature on advanced topics in engineering
- Be able to write coherent technical reports and other documentation reporting the results of fundamental investigations
- Be able to give professional oral presentations of the procedures used and conclusions reached in investigations
- Demonstrate the capacity to make fundamental and significant contributions to engineering using knowledge of science, mathematics, and engineering along with the tools of research to perform analysis and synthesis, and to envision potential areas of application

DEGREE REQUIREMENTS

The PhD degree is awarded to students who have satisfied the requirements of duration of program, who have submitted an acceptable dissertation, and who have passed all prescribed examinations.

Students entering with a master's degree must:

- Complete 30 semester hours of coursework-at least 15 semester hours must be MAE courses, at most 9 semester hours may be independent study courses.
- All 30 semester hours must be numbered 5000 and above.
- Cross-listed courses which are offered at the 5000/6000 levels must be taken at the 6000 level.
- Complete 30 semester hours of dissertation research in addition to coursework.
- Have an overall graduate GPA of 3.0 in order to graduate.
- Have a grade of B- or better in all courses applied toward the PhD degree.
- Pass Preliminary Examination, Comprehensive Examination

No foreign language is required.

MASTER OF SCIENCE - MECHANICAL ENGINEERING, MS ME

LEARNING OUTCOMES

- Prepare the student to perform independent research in their field of specialization
- Provide students with an understanding of the advanced engineering tools and concepts that apply to their field of specialization, with particular emphasis on the mathematical development of those tools
- Prepare students to practice engineering at an advanced level
- Prepare the student to pursue doctoral studies in mechanical/aerospace engineering
- Develop student's communication skills and professionalism

The Department of Mechanical and Aerospace Engineering offers a program leading to the Master of Science in Mechanical Engineering (MS ME). This research-oriented academic degree is appropriate either as a terminal degree or in preparation for doctoral studies in mechanical and aerospace engineering. Courses at the graduate level are often offered in the late afternoon or evening to enable students from local industry to complete their studies.

The Graduate Curriculum Includes:

- Aerospace Engineering
- Analysis and Control of Dynamic Systems
- Space Systems
- Thermal Systems
- Fluid Mechanics

Interdisciplinary research programs are available to graduate students. Graduate students can participate in ongoing research programs through independent study projects or as research assistants on sponsored research projects. See the Graduate Admission Requirements below.

PROGRAM PREREQUISITES

- Two semesters of calculus-based physics
- A programming course in a higher order language; linear systems theory; engineering probability; linear algebra; and differential equations are required for admission to the program.

ADMISSION REQUIREMENTS

The minimum requirements for regular admission into the MS ME or Master of Engineering programs are as follows:

1. Baccalaureate degree (BS) in engineering, applied mathematics, or physics from an accredited institution. Currently enrolled undergraduate engineering students with exceptional academic records may qualify for guaranteed early admission to the MS ME graduate program-please contact the MAE department for more information.
2. An undergraduate grade point average of 3.0 or higher on a scale of 4.0 in all college level academic work attempted.
3. Evidence of mathematical maturity equivalent to the completion of the following university-level coursework
4. Three semesters of calculus
5. At least one semester beyond calculus (advanced calculus or ordinary differential equations)
6. Linear algebra, Dynamics, Strength of Materials, Fluid Mechanics and Thermodynamics
7. Two copies of official transcripts from all academic institutions attended, including UCCS itself if applicable.
8. Three letters of recommendation (with at least one from a former instructor), mailed to the MAE Department Office.
9. All Applicants must take the GRE general test.

Applicants who do not meet these requirements for regular admission may be admitted on a provisional basis subject to the recommendations of the MAE graduate committee.

For more information about these programs and application materials, contact the Department of Mechanical and Aerospace Engineering, Graduate Programs, Osborne Center A-437, or call (719) 255-3243. Send e-mail to mae@uccs.edu or see our Web page.

Students are encouraged to submit program application materials promptly.

TRANSFER CREDIT

Course credit between the CU-Boulder, CU-Denver, and UCCS courses in mechanical or aerospace engineering will be fully transferable. A table of University of Colorado System course equivalencies is contained in the CU-Boulder Course Catalog.

Up to 9 hours of graduate work may be approved for transfer from other established graduate programs, subject to the following conditions:

- The course has not been used for any other degree.
- The grade earned for each course is B (3.0) or better.

- The course is equivalent in level and content to the course for which it is being substituted.

PLAN OPTIONS

Plan I (Thesis Option)
At least 24 hours of graduate coursework and up to 6 hours of thesis/research credit is necessary to satisfy the 30 credit hour requirement. The thesis/research credit will be provided for research and preparation of the student's thesis, and defense of the thesis is required for completion of the program. The thesis defense will be based on the thesis and related materials and will be open to the public. Any student who does not pass the thesis defense may attempt the examination a second time. The second failure of the defense will result in dismissal from the MS ME program.

Please see the course descriptions for a complete list of graduate courses in mechanical and aerospace engineering.

Plan II (Coursework Option)
30 hours of graduate coursework.

DEGREE REQUIREMENTS

The MS ME degree requires the following:

- 30 semester hours of graduate study, with a minimum of 6 hours of coursework in graduate-level pure or applied mathematics.
- Each MS ME student may complete the thesis option (Plan I) or the coursework option (Plan II).
- The coursework requirements will be met with a combination of the “core” courses and additional electives selected from the list approved for that specialization.
- Any deviation from the predefined curricula (including transfer credit) must be approved by a graduate faculty advisor in the MAE Department.
- Coursework must be completed with a 3.0 GPA or better.
- All coursework (including transfer credit) must have been completed no earlier than 6 years prior to degree completion.
- A graduate advisor selected in the first semester of the program.

During the first semester of enrollment, each student will prepare a Plan of Study, which must be approved by the student’s graduate advisor and MAE Graduate Affairs Committee. The plan will specify the student’s selected area of interest and list courses related to that area. Any subsequent changes to the Plan of Study must also be approved by the student’s advisor and the MAE Graduate Affairs Committee.

The student and advisor will select an advisory committee, which will provide assistance in formulating and executing the student’s graduate program. The committee shall consist of at least three full-time faculty members selected from the College of Engineering and Applied Science at UCCS; the advisor must be a tenured or tenure-track faculty member of the Department of Mechanical and Aerospace Engineering. Eligibility to serve on the graduate committee shall be determined by the policies and procedures of the Graduate School.

AEROSPACE ENGINEERING MINOR

GENERAL REQUIREMENTS

The minor in Aerospace Engineering requires the following:

- at least 23 credit hours of coursework
- a minimum overall GPA of 2.0 in all courses

The student will be responsible for any prerequisites to required courses. Only 6 hours of transfer work may be applied to the minor.

REQUIRED COURSES

- MAE 3401 - Modeling and Simulation of Dynamic Systems
- MAE 4135 - Aerodynamics
- MAE 4410 - Fundamentals of Astrodynamics
- MAE 4421 - Automatic Control of Aerospace and Mechanical Systems
- MAE 4510 - Engineering Design I
- MAE 4511 - Engineering Design II

Select two classes from the following list:

- MAE 4000 - Mechanical and Aerospace Engineering Seminar
- MAE 4130 - Intermediate Fluid Mechanics
- MAE 4316 - Propulsion
- MAE 4402 - Intermediate Dynamics
- MAE 4415 - Flight Dynamics
- MAE 4425 - Space Environment

  OR

- MAE 5091 - Space Environment
- MAE 5125 - Advanced Dynamics
- MAE 5130 - Incompressible Flow
- MAE 5131 - Computational Fluid Dynamics
- MAE 5140 - Compressible Flow
- MAE 5145 - Hypersonics
- MAE 5391 - Rocket Propulsion
- MAE 5419 - Trajectory Optimization
- MAE 5424 - Spacecraft Attitude Dynamics and Control
- MAE 9510 - Special Topics: Graduate

MECHANICAL ENGINEERING MINOR

GENERAL REQUIREMENTS

The minor in Mechanical Engineering requires the following:

- at least 22 credit hours of coursework

- a 2.0 minimum GPA on all coursework

The student will be responsible for any prerequisites to required courses. Only 6 credit hours of transfer work may be applied to the minor. This minor is for non-mechanical engineering majors. Minor courses are as follows:

Required Courses

- MAE 2103 - Engineering Mechanics I
- MAE 2104 - Engineering Mechanics II
- MAE 2301 - Engineering Thermodynamics I
- MAE 3130 - Fluid Mechanics
- MAE 3201 - Strength of Materials
- MAE 3501 - Machine Design I

Upper Division MAE Electives

Complete 3 hours of upper-division (3000+ level) MAE courses.

ENGINEERING PROGRAMS OF STUDY

Discipline/Department	Minor	Bachelor of Science	Bachelor of Innovation*	Certificate	Master of Science	Master of Engineering	Doctor of Philosophy**
Aerospace Engineering—MAE	Minor						
Computer Engineering—CS, ECE	Minor	BS					
Computer Science—CS	Minor	BS	BI*		MS		PhD**
Computer Security—CS			BI*				
Electrical Engineering—ECE	Minor	BS	BI*		MS		PhD**
Engineering Management—EAS Dean						ME	
Game Design and Development— CS	Minor		BI*				
MSCS-GMI—CS					MS		
Information Assurance—CS				Certificate		ME	

Mechanical Engineering—MAE		BS			MS		PhD**
Security—CS				Certificate			PhD**
Software Engineering— CS				Certificate		ME	
Space Operations — EAS Dean						ME	
Systems Engineering - EAS Dean				Certificate		ME	
Space Operations -EAS Dean				Certificate			

College of Letters, Arts, and Sciences

GENERAL INFORMATION

Peter A. Braza, Dean
Columbine Hall, Room 2025
Phone: (719) 255-4550
Fax: (719) 255-4200
http://www.uccs.edu/~las/

The College of Letters, Arts, and Sciences at UCCS provides breadth of instruction for all students of the UCCS campus, including those in professional schools and colleges. This breadth exposes all students to the challenge, excitement and demands of clear self-expression, analysis, reasoning, comparison, experimentation, and awareness of alternative perspectives. Students within the College gain skills, perspectives, knowledge, and the keys to success in subsequent education and careers.

The college offers bachelors degrees in a full range of traditional liberal arts majors and minors, selected masters graduate programs, and several PhD programs. The college also offers pre-professional programs, certificate programs, and cooperative degree options (with the College of Education) for students seeking licensure in elementary teaching, secondary teaching or special education.

MISSION

The College of Letters, Arts, and Sciences at the University of Colorado Colorado Springs is a community of teaching scholars whose mission is to advance an understanding of the human condition and the natural world, and to communicate this understanding to the people of Colorado, and the world at large.

VISION

We will position our graduates for success in their professional and personal lives through innovative and collaborative teaching, scholarship, and connections with the community and the broader world.

ADVISING

Academic Advising assists students with developing academic plans, discussing and evaluating educational goals, explaining degree programs, clarifying University and College policies, advice on appropriate course selection, connecting to campus resources, and completing senior audits. Academic Advising also provides summary sheets of program requirements. Students can call (719) 255-3260 to make an appointment, or walk in to the office of Academic Advising in Main Hall.

Individual Department Chairs & Departmental Faculty are responsible for advising students on the requirements for their majors. Consult the departmental websites for contact information.

PROGRAMS OF STUDY

The programs at the academic level that are available for completion through College of Letters, Arts, and Sciences at the University of Colorado Colorado Springs are listed on the Letters, Arts, and Sciences Programs of Study table at the end of this chapter, and can also be found on this catalog's Programs page.

PRE-PROFESSIONAL PROGRAMS

Pre-professional programs are a group of courses which meet specified professional school requirements, but by themselves do not meet degree requirements for a major. Pre-professional programs of two to four years which may be completed at UCCS are Pre-Dentistry, Pre-Medicine, Pre-Pharmacy, Pre-Physical Therapy, Pre-Child Heath Associate/Physician Assistant, and Pre-Veterinary. For more information please visit the Pre-Professional Curricula page.

EXTENDED STUDIES

Brian Glach, Program Director
Heidi Wardell, Enrollment & Student Services
Columbine Hall 1007
Phone: (719) 255-4071
Email: lases@uccs.edu
http://www.uccs.edu/lases/index.html

The Extended Studies Program for the College of Letters, Arts, and Sciences (LAS/ES) provides a variety of accessible educational opportunities in traditional and nontraditional formats with a focus on career preparation and advancement, enhancement of personal knowledge and experience, and the acquisition of additional university credit for licensure and certification purposes. Most LAS/ES credit classes are transferable to UCCS degree programs.

LAS/ES serves as an educational outreach arm to the community, with on-campus credit courses, video and cable credit courses, online credit courses, third-party accreditation programs, certificate programs and individualized study programs. Students benefit from outstanding instruction and the experience of participating in a university environment, whatever their educational background or experience. LAS/ES also administers the campus preparatory courses in Math (90 & 99) in cooperation with the Math Department.

LAS/ES is a self-funded program and part of the Colorado Statewide Extended Campus. Please see the contact information given above for additional program information and a list of current courses.

CERTIFICATES

The College of Letters, Arts, and Sciences offers a number of undergraduate and graduate certificates to degree and non-degree seeking students. The following departments offer the following certificates. For further information about particular certificates, please follow the given links. Please see the Letters, Arts, and Sciences Programs of Study table for a comprehensive picture of offerings per department.

Cognitive Archaeology
Undergraduate Certificate in Cognitive Archaeology
Graduate Certificate in Cognitive Archaeology

Economics
Economic Education Graduate Certificate

English
English Professional and Technical Writing Minor and Certficate
English Undergraduate Certificate in Professional and Technical Writing - User Experience

Geography and Environmental Studies
Geographic Information Science Undergraduate Certificate

Psychology
Professional Advancement in Gerontology (Professional)

Sociology
Graduate Certificate in Advanced Research Methods
Graduate Certificate in Disability Studies
Graduate Certificate in Sociology of Diversity
Graduate Certificate in Teaching Sociology
Undergraduate Certificate in Criminology and Justice Studies
Undergraduate Certificate in Disability Studies
Undergraduate Certificate in Social Dimensions of Health and Health Care
Undergraduate Certificate in Sociology of Diversity

Women's and Ethnic Studies
Gender and Sexuality Studies Undergraduate Certificate (WEST)
Global Studies Undergraduate Certificate (WEST)
Latino/a Studies Undergraduate Certificate (WEST)
Native American and Indigenous Studies Undergraduate Certificate (WEST)

LAS SPECIAL STUDY PROGRAMS

GATEWAY PROGRAM SEMINAR

http://www.uccs.edu/~gps/

GPS 1010 - Gateway Program Seminar is a three-credit interdisciplinary learning experience to help freshmen succeed in college. Students refine their skills in speaking, critical thinking, writing, teamwork, and technology. Students also examine a topic based on the fundamentals of various disciplines, and work closely with faculty and peer mentors. The course emphasizes faculty coaching, collaborative learning, and campus resources through a variety of assignments. Gateway Program Seminar is an early start-up class. It meets from 9:00a.m. to 5:00p.m. on Thursday, August 18 and Friday, August 19. After these two full days, Gateway Program Seminar courses continue to meet once a week at their listed time for the first 12 weeks of the semester, ending in late November. Gateway Program Seminar is a course designed to introduce students to academic life at UCCS. As students pursue a topic, they will be introduced to a wide range of disciplines and campus resources that can make them more successful in their academic work. Topic groups break into sections of 15 students. For more information, please visit the website at www.uccs.edu/~gps/.

ACADEMIC FITNESS

GPS 1110 - Academic Fitness is a one-credit course to help students refine their academic skills. Small groups of students meet with an instructor on a weekly basis to discuss practical topics that apply to academic success in

all their courses: resilience, goal-setting, learning styles, time management, academic skills, test-taking, speaking, writing, group work, and wellness.

EDUCATION ABROAD PROGRAMS AT THE GLOBAL ENGAGEMENT OFFICE

Copper House 9202
Phone: (719) 255-5018
Email: international@uccs.edu
Website: uccs.edu/geo

Opportunities for studying in another country are available to UCCS students through faculty-led, exchange, affiliate, and direct enrollment programs. Internships and volunteer programs are also available. Program length ranges from short-term (2-4 weeks) to semester and year-long. The Global Engagement Office (GEO) can help students identify appropriate programs and offer comprehensive advising on all aspects of studying abroad. Most programs carry full credit toward graduation from UCCS. To find out more, please use the contact information given above.

NATIONAL STUDENT EXCHANGE PROGRAM (NSE)

Columbine Hall 1020
Phone: (719) 255-4502 or 4552
Email: nse@uccs.edu
www.uccs.edu/nse

The National Student Exchange (NSE) is an exchange program in the U.S., U.S. Virgin Islands, Puerto Rico, Guam, and Canada. By offering an affordable exchange to partner universities (students can pay UCCS tuition or pay the in-state tuition of their host campuses), students can spend one or two semesters learning from new professors and colleagues as they immerse themselves in new cultures. NSE opportunities are open to all sophomores, juniors, and seniors with a minimum GPA of 2.5. Some restrictions apply for certain majors, but most programs carry full credit toward graduation from UCCS. To find out more, please use the contact information given above.

RESEARCH CENTERS, PROGRAMS, AND FACILITIES

AGING CENTER

Sara Qualls, Director
Lane Center for Academic Health Sciences, 4863 N. Nevada Ave., Suite 321
Phone: (719) 255-8002
Email: cuaging@uccs.edu
http://www.uccs.edu/agingcenter/index.html

The Aging Center is a psychology training clinic and a community mental health agency affiliated with the UCCS doctoral program in clinical psychology. The center provides professional training for UCCS psychology students and comprehensive psychological and wellness services for older adults and their families, as well as consultation to community agencies that assist them.

BIOTECHNOLOGY CENTER

Thomas Wolkow, Director
Osborne Center for Science and Engineering B-339

Phone: (719) 255-3663
Email: twolkow@uccs.edu
http://www.uccs.edu/biology/centers.html

The mission of the Biotechnology Center is to advance local biotechnology enterprises by supporting collaborative research endeavors. Current research projects utilize techniques of molecular genetics, biochemistry, and fluorescence microscopy.

CENTER FOR ADVANCED TECHNOLOGIES & OPTICAL MATERIALS

Anatoliy Glushchenko, Director
Engineering Building, Room 210
Phone: (719) 255-3130
Email: aglushch@uccs.edu

The mission of the Center is to provide a state of the art platform for cutting edge research and development in the areas of applied optics and advanced materials. The Center also provides research opportunities for scholars and the academic community, and strong education and training for current professionals, graduates and undergraduates students.

CENTER FOR COGNITIVE ARCHAEOLOGY

Thomas Wynn, Certificate Program Director
Phone: (719) 255-3126
Email: twynn@uccs.edu
http://www.uccs.edu/cca/index.html

Cognitive archaeology is an interdisciplinary field that applies the theories and methods of several academic domains (cognitive psychology, neuropsychology, archaeology, linguistics, philosophy of mind, philosophy of consciousness, etc.) to the tangible evidence for human evolution-non-human primate anatomy and behavior, human neuroanatomy, hominid paleontology, and archaeology. It studies the origins and adaptive purposes of such cognitive processes and capabilities as concept formation, spatial cognition, social cognition, language, symbolic structures, and working memory.

The mission of the Center for Cognitive Archaeology (CCA) is to provide graduate and undergraduate students at UCCS and throughout the world the opportunity to study the evolutionary development of cognition in humans and other primates through the lenses of psychology, anthropology, and philosophy.

The center offers an undergraduate and graduate certificate in Cognitive Archaeology. To find out more about the certificates and the Center, please use the contact information given above.

CENTER FOR ECONOMIC EDUCATION

John Brock, Director
Academic Office Building 214
Phone: (719) 255-4033
Email: jbrock@uccs.edu
http://www.uccs.edu/economics/centers/center_for_economic_education.html

This center, established in 1978, is sponsored by and affiliated with the Council for Economic Education (New York City) and the statewide Colorado Council for Economic Education (Denver). The Center engages in programs

and activities designed to raise the general level of economic understanding, with special emphasis given to K-12 school teachers and school districts in Colorado, including international economics study tour travel opportunities for teachers. The Center also conducts additional economic education programs that involve educators in other states and countries. The Council for Economic Education is an independent, nonprofit, nonpartisan, educational organization incorporated in 1949 to encourage, improve, coordinate and service the economic education efforts in the United States. There are 47 state councils and 250 Centers for Economic Education in the U.S. To find out more, please use the contact information given above.

CENTER FOR LEGAL STUDIES

Raphael Sassower, Director
Columbine Hall, Room 1003
Phone: (719) 255-4090
Email: rsassowe@uccs.edu

The Legal Studies Center coordinates the pre-law minor and organizes programs and events for students considering a legal career.

CENTER FOR MAGNETISM AND MAGNETIC NANOSTRUCTURES

Robert Camley, Director
Engineering Building, Room 208
Phone: (719) 255-3512
Email: rcamley@uccs.edu
http://www.uccs.edu/physics/magnetism_and_magnetic.html

The Center for Magnetism and Magnetic Nanostructures does both fundamental and applied research in the general field of magnetism and magnetic materials. Specific topics include: signal processing in the 10-100 GHz range using magnetic materials, development of new magnetic materials, on-wafer magnetic inductors, and magnetic nanoparticles and their use in biotechnology, drug delivery, and microwave devices.

CENTER FOR RELIGIOUS DIVERSITY AND PUBLIC LIFE

Jeff Scholes, Director
Columbine Hall, Room 4057
Phone: (719) 255-8113
Email: jscholes@uccs.edu
http://www.uccs.edu/~rdpl/

The Center for Religious Diversity and Public Life aims to foster a healthy and fruitful relationship between UCCS students and religion, as well as the university and the surrounding community, through educational programs and outreach. The Center does so primarily by providing a needed platform for guest speakers, religious leaders, students, and citizens to present scholarly efforts, create space for open dialogue, and motivate future action.

CENTER FOR THE STUDY OF GOVERNMENT AND THE INDIVIDUAL

Joshua Dunn, Executive Director
Phone: (719) 255-3941
Email: csgi@uccs.edu
http://www.uccs.edu/~csgi/

The Center for the Study of Government and the Individual was established in 2000. Its purpose is twofold:

- To provide a vehicle for the candid and open exploration of the relationship between citizens and government in a free society.
- To stimulate the study of the role of government in the American economy and society.

The general public and any of the faculty and students of the schools and colleges at UCCS interested in research and teaching activities related to government and the individual may participate in its activities. Among its activities are the following:

- Public Forums: designed to bring the academic and public community together
- Seminars: by specialists in the subject areas
- Publications: of the proceedings of public forums, papers, books
- Research: funded to provide in-depth analysis of Center's areas of interest
- Faculty Fellows: participate in the Center Roundtable, act as editors for publications, serve as mentors to students and take on special roles in the Center's program development
- Funded development courses: focused on the role of government and the individual
- Student Fellows: attached to the Center who will receive scholarships; will be in a field relevant to the topic of the Center; and will work with faculty mentor and participate in Center activities
- Student Interns: work with faculty mentors on research projects related to the Center's mission.

COLORADO CENTER FOR POLICY STUDIES

Daphne Greenwood, Director
Phone: (719) 255-4031
Email: dgreenwo@uccs.edu
http://www.uccs.edu/~ccps/

The Colorado Center for Policy Studies addresses issues important to state and local governments such as:

- What can states and localities do to improve the standard of living?
- How can community-developed indicators be used to measure quality of life and sustainability?
- How can economic development strategies be restructured to be more cost effective and to create more broadly based benefits?
- How does outsourcing public jobs to private contractors impact community economic development? How can cities or states know when it is in the best interest of their citizens to shift to private contractors?
- Does local or state population growth "pay its own way"? What groups benefit from growth? What groups bear most of the costs?
- Does tax policy affect our ability to practice "smart growth"?
- Has school funding been equalized within states? How different is it between them?
- How do schools fit into urban redevelopment and revitalization plans?
- What are the best ways to deal with potential water shortages?
- How do TABOR and other aspects of Colorado tax policy affect revenues and services?

Selected faculty and students at UCCS, as well as scholars from across the country, participate in research papers and policy briefs on these and other subjects. Grants and contracts fund some of this work, while the remainder is underwritten by the Elizabeth Cushman Public Policy Fund and Student Internship Fund at the University of Colorado. The Center sponsors periodic public talks, meetings and conferences. To find out more, please use the contact information given above.

GERONTOLOGY CENTER

Sara Qualls, Director
Lane Center for Academic Health Sciences, 4863 N. Nevada Ave.
Phone: (719) 255-8005
Email: geron@uccs.edu
http://www.uccs.edu/~geron/

The Gerontology Center has a threefold purpose:

- To foster research about aging processes and their effects on humans and societies
- To provide students an opportunity to study the processes of aging and the problems of the aged
- To be a community resource for dealing with social policy issues and programs for the aged.

Students may earn a minor in gerontology in preparation for a career working with older adults, or take courses as a way of understanding both their own future and that of an aging society. Students gain an understanding about aging as a process, about problems of the elderly, and about ways to address these problems in meaningful and effective ways. Studies include classroom-based instruction in a variety of academic disciplines and work in the field with older adults.

The Gerontology Center fosters collaborative projects among disciplines and across organizations, especially those that create and test integrated care approaches. Faculty Affiliates in the Center collaborate with community partners to create and test innovative models in long term care, primary care, and social service settings. Faculty also maintain active research in basic and applied sciences on a variety of topics within their discipline.

Continuing education offerings are also available through the Gerontology Center, including the Professional Advancement Certificate in Gerontology. To find out more, please use the contact information given above.

THE HELLER CENTER FOR ARTS AND HUMANITIES

Rhonda Goodman-Gaghan, Curator
Minette Church, Faculty Director
Phone: (719) 255-3898, (719) 255-3064
Email: rgoodma2@uccs.edu; mchurch@uccs.edu
www.uccs.edu/~heller/

The Heller Center for Arts & Humanities is three minutes north of the main UCCS campus, off Nevada Avenue, on 65 secluded acres, surrounded by an additional 900 acres of open space. The historic adobe compound provides spaces for working artists, small meetings, classes, exhibitions, concerts, and performances. The Heller property functions as an open-air studio for photography, painting, and other creative endeavors. It also serves as an outdoor laboratory for environmental studies. The hiking and biking trails provide outstanding recreational opportunities with unsurpassed views of Pikes Peak. Given the nature of the facility and its historical importance, the Heller Center offers a unique venue for programs that engage significant constituencies of the Pikes Peak region.

The Heller Center for Arts & Humanities was founded in 2003, at the bequest of Mrs. Dorothy Heller, as an interdisciplinary center combining educational, research, and creative activities in the fields of arts and humanities. As a place where artists gathered for weekend retreats throughout the nineteen thirties, forties, and fifties, the Heller Center preserves and extends an important part of the rich cultural heritage of Colorado Springs. The Main House of the Heller property was rehabilitated in 2010, with assistance from the State Historical Fund. Historic renovation of the Guest House was completed in 2012.

THE MATRIX CENTER FOR THE ADVANCEMENT OF SOCIAL EQUITY AND INCLUSION

Dena Samuels, Director
Phone: (719) 255-4117
Email: dsamuels@uccs.edu
Pamela Weisman, Program Manager
Phone: (719) 255-4764
Email: pweisman@uccs.edu
http://www.uccs.edu/~matrix/
General inquiries: matrix@uccs.edu

The award-winning Matrix Center is a resource for the study of privilege and oppression from an intersectional perspective. Our mission is to examine and challenge systems of oppression and privilege in society, and implement effective solutions through comprehensive educational programming, literature, institutes, and workshops locally, nationally, and beyond. Our work is based on the premise that an inclusive and equitable community will improve life and benefit all citizens.

The Matrix Center has gained a national reputation as a leader in the field of intersectional studies and our programs are attended by educators, students, and activists from around the U.S. and internationally. We offer workshops and training, both on and off campus, facilitated by national experts, authors, and educators involved in shaping the national discourse around diversity and contributing to the development of best practices.

The Matrix Center coordinates with a Community Advisory Board, a diverse group of leaders who work together to address the needs of the community. Collaborations have been formed with community organizations to present a wide variety of events benefiting the Pikes Peak Region.

Our programs and projects include:

- **The Knapsack Institute: Transforming Teaching and Learning**, an annual three-day intensive workshop that provides participants with the tools and strategies needed to build diversity and inclusiveness in classrooms and organizations. Educators from across the nation come to learn about privilege, oppression, and intersectionality and how to integrate these concepts into their schools, businesses, and nonprofits. Find more information at http://www.uccs.edu/knapsack.
- **Understanding and Dismantling Privilege**, an online peer-reviewed journal, creates a forum for interdisciplinary dialogue about privilege and oppression. Available at http://www.wpcjournal.com/.
- **Graduate Certificate in Diversity, Social Justice, and Inclusion**, a comprehensive and innovative certificate program that provides relevant coursework applicable to careers in educational, corporate, and nonprofit sectors.
- Symposia, lectures, films and events throughout the year, serving the campus and the community.

SERVICE-LEARNING INTERNSHIP AND COMMUNITY ENGAGEMENT CENTER (SLICE)

Professor Sandy Wurtele, Director
Margie Oldham, Associate Director
LAS Dean's Office, Columbine Hall, Room 2025
Phone: (719) 255-4150, (719) 255-4552
Email: slice@uccs.edu
http://www.uccs.edu/slice/index.html

Founded in 2013, the mission of the Service-Learning Internship and Community Engagement Center (SLICE) is to foster quality experiential learning opportunities for students, support faculty community-based outreach activities, and facilitate campus-community partnerships. These partnerships significantly contribute to student learning, advance faculty teaching and research, support UCCS programs, and positively contribute to the Colorado Springs community.

Service-learning courses and Internships are types of high-impact educational practices (HIPs) and have become increasingly common forms of experiential learning.

- Service-learning combines community service with explicit learning objectives, preparation, and reflection to enrich the learning experience and strengthen communities. Service-learning offers a balance between service and learning objectives, addresses community-identified concerns, and involves community in the design and implementation.
- An Internship is a form of experiential learning that integrates knowledge and theory learned in a classroom with practical application and skills development in a professional setting. Internships give students opportunities to gain valuable applied experience and make connections in professional fields--usually related to their career interests.
- Community-engagement activities engage faculty with the community in ways that benefit the community and advance the faculty member's teaching, scholarship, and service responsibilities. Community-based learning (CBL) and community-based research (CBR) are two types of community-engagement activities.

To find out more about eligibility and current opportunities, please use the contact information given above.

UCCS CENTER OF THE UNIVERSITY OF COLORADO BIOFRONTIERS INSTITUTE

Distinguished Professor Robert Camley, Director
Engineering Building, Room 208
Phone: (719) 255-3512
Email: rcamley@uccs.edu
http://www.uccs.edu/~biofrontiers/

Biofrontiers-UCCS is devoted to collaborations between scientists across disciplines to advance biotechnology. The initial focus of Biofrontiers-UCCS will be to do research at the border between biology and physics.

WESTERN REGIONAL RADON TRAINING CENTER

Professor James Burkhart, Director
Engineering Building, Room 207
Phone: (719) 255-3214

Email: jburkhar@uccs.edu
http://www.wrrtc.net/

The Western Regional Radon Training Center, founded by the U.S. EPA, is charged with training, curriculum development and public outreach on matters concerning radon testing, radon mitigation and radon health effects. Appropriate classes are held at the UCCS campus periodically and at various locations around the western United States, including Tribal Lands.

LAS UNDERGRADUATE ACADEMIC POLICIES

ACADEMIC ADVISING

Students are expected to assume responsibility for planning their academic programs in accordance with college rules, policies and major requirements. Academic advisors can answer questions about college policies and graduation requirements, including those regarding college requirements and the Compass Curriculum, and will assist students in course selection. Students expecting to graduate within one or two semesters should schedule a senior audit appointment by calling (719) 255-3260 or by walking in to the office of Academic Advising in Main Hall.

Although academic advisors provide summary sheets of major requirements, major advising is the responsibility of the faculty. It is the responsibility of students to know who their faculty advisors are, and to arrange such faculty consultations for questions involving major requirements and graduate school applications. Students should schedule appointments to discuss their questions well in advance of registration.

ACADEMIC PROGRESS

GRADING POLICIES

Students should familiarize themselves with the Academic Policies, Registration, and Records section of this catalog, as well as with the introductory pages of each semester's official Registration Handbook, for information about the university grading system, and current procedures for registering on a pass/fail basis, for dropping and adding classes, and for withdrawing from the university.

Pass/Fail Option
Students in the College of Letters, Arts, and Sciences may not use the pass/fail option for courses taken to fulfill the area requirements, the composition requirement, the quantitative and qualitative reasoning requirement, or the major requirements. Students may take up to 15 credit hours of elective coursework on a pass/fail basis. Transfer students may take 1 credit hour of pass/fail credit for every 8 credit hours of credit attempted at the University of Colorado. For full-time students, maximum pass/fail hours per semester are as follows:

- Fall-6 credit hours
- Spring-6 credit hours
- Summer-3 credit hours

For part-time students, no more than 50 percent of total credit hours may be taken pass/fail in a given semester. If only one course is taken in a semester, it may be taken pass/fail. The P grade is not included in the student's grade point average; the F grade is included. A pass/fail designation may not be reversed. For further information concerning the pass/fail option, see the Academic Policies, Registration, and Records section of this catalog.

Repetition of Course

When a student takes a credit course more than once, all grades are used in determining the grade point average. However, if a student has passed the same course more than one time, the College will count that course only once when calculating the student's credit hours earned toward graduation. The only exception to this rule will be in cases where a course is designated in this Catalog as "may be repeated for credit."

LATIN HONORS

In order to graduate with Latin honors, a student must complete a minimum of 60 credit hours at the University of Colorado, and achieve a University of Colorado grade point average of: 3.5-3.69 for cum laude, 3.7-3.89 for magna cum laude, or 3.9 or higher for summa cum laude.

President's and Dean's List Criteria

The criteria for the president's and dean's lists are as follows:

- President's list: 4.0 grade point average.
- Dean's list: 3.75-3.99 grade point average.
- Students must complete a minimum of 12 credit hours during a regular semester (fall or spring).

The dean notifies awarded students by letter.

STATEMENT OF ACADEMIC STANDARDS-UNDERGRADUATE

Students are held to basic standards of performance established for their classes with respect to attendance, active participation in coursework, promptness in completion of assignments, correct English usage both in writing and in speaking, accuracy in calculation, and general quality of scholastic workmanship. In general, examinations are required in all courses and for all students including seniors. To be in academic good standing, students must have a cumulative CU grade point average of not less than 2.0 (C=2.0) for all coursework attempted. This applies to work taken at all University of Colorado campuses.

ACADEMIC PROBATION

Students who have attempted at least 12 credit hours at UCCS and whose University of Colorado cumulative grade point averages fall below 2.0 will be placed on academic probation. While on probation, students will be required to achieve a minimum acceptable grade point average each term (determined by the individual academic record) or be subject to academic suspension. Students placed on probation will be informed in writing concerning their academic status and the conditions of continued attendance. A more comprehensive statement on the academic probation policy is available in Academic Advising in Main Hall.

ACADEMIC SUSPENSION

The normal suspension period in the College of Letters, Arts, and Sciences is one academic year, excluding the summer semester. Students suspended for the first time will be reinstated after the normal suspension period has been served, upon reapplying for admission to the university. Students suspended for the first time may be reinstated before the end of the normal suspension period by the following measures:

- Achieving a 2.5 grade point average on all summer, extended studies, or correspondence work attempted at the University of Colorado since suspension. A minimum of 6 credit hours must be completed.
- Raising the cumulative University of Colorado grade point average to at least 2.0 by completing summer, correspondence, or extended studies coursework at the University of Colorado.

- Achieving a cumulative grade point average of at least 2.0 by attending another institution. The cumulative grade point average in this instance is the grade point average at the University of Colorado combined with coursework taken at all other institutions.
- Successfully appealing the suspension in writing to the dean.
- Being recommended for reinstatement by the coordinator of academic probation and suspension for the College of Letters, Arts, and Sciences in Academic Advising, Main Hall.

Students eligible for reinstatement before serving the normal suspension period must notify Academic Advising. Reinstated students absent for either fall or spring semesters or who complete 12 or more credit hours at another institution must reapply for admission to the university. Students suspended for the first time will be reinstated on probation and will be informed in writing of their academic status and the conditions of continued attendance. Students not meeting conditions of continued attendance will again be subject to academic suspension. Reinstatement after a second suspension requires approval of the dean of Letters, Arts, and Sciences. Requests for reinstatement must be made in writing. A more comprehensive statement on the academic suspension policy is available in Academic Advising, Main Hall.

COMMITTEE ON ACADEMIC PROGRESS

The Committee on Academic Progress (CAP) is a review board that handles student petitions for exceptions to the academic policies and requirements of the college. The committee is made up of faculty of the college and makes recommendations to the dean. The committee evaluates, for example, petitions for exceptions to the residency requirement, acceptance of more than the maximum number of major credit hours, and substitution of courses fulfilling the area requirement. It also considers certain requests for reinstatement from suspension and matters of academic honesty. Petition forms may be obtained from Academic Advising in Main Hall.

COURSE CREDIT

CORRESPONDENCE STUDY AND THE LAS EXTENDED STUDIES

A maximum of 30 credit hours taken through the Colorado Statewide Extended Studies program, from courses indicated as CU-Boulder and CU-Denver, may carry resident credit. No more than nine credit hours of regular coursework may be taken from LAS Extended Studies and applied towards the degree. MATH 90, MATH 99, and other courses numbered below 1000 will not count towards the required 120 credit hours for graduation, nor will they count in the College of Letters, Arts, and Sciences grade point average.

ELECTIVES FROM THE UCCS PROFESSIONAL COLLEGES

Students may apply a maximum of 30 credit hours toward the bachelor's degree from coursework taken outside the College of Letters, Arts, and Sciences. Coursework taken from the professional colleges at UCCS and transfer coursework labeled "non-LAS electives" will be included in the 30 credit hour maximum.

INDEPENDENT STUDY

Students who have completed a considerable portion of their undergraduate studies with distinction may register for independent study with the approval of the appropriate department. The amount of credit to be given for an independent study project shall be arranged with the instructor. Not more than 8 credit hours of independent study may be credited toward the major, and not more than 16 credit hours toward the bachelor's degree. No student may register for more than eight credit hours of independent study in any one term (summer, fall, or spring).

ORGANIZATIONAL LEADERSHIP AND PROFESSIONAL DEVELOPMENT/ROTC CREDIT

Students may apply a maximum of 24 credit hours of ROTC credit toward elective requirements and toward the 120 credit hour total degree requirements for the BA degree in the College of Letters, Arts, and Sciences.

SPECIAL SOURCES OF CREDIT

For Advanced Placement (AP), College Level Examination Program (CLEP), International Baccalaureate (IB), and DANTES Subject Standardized Tests (DSST), see the Admissions section of this Catalog for placement score requirements, course equivalencies and credit hour values. See an academic advisor for information on how these exams might apply to a major.

COURSE LOAD

The minimum full-time course load is 12 credit hours. The normal maximum is 18 credit hours. If a student wishes to take more than 18 credit hours per semester, special permission must be obtained from the dean of the college, through Academic Advising. These totals include all courses taken for credit at any of the university's three campuses, but do not include correspondence courses, noncredit courses, or courses taken at other institutions. To receive credit, the student must be officially registered for each course. Students who hold or expect to hold full or part-time employment while enrolled in the college must register for course loads they can expect to complete without unusual difficulty. Recommended course loads are given below, but students must weigh their own abilities and assess the demands of each course in determining an appropriate schedule.

Employed	Enrolled Semester Hours
40 hours per week	6-9
30 hours per week	8-11
20 hours per week	10-13

COURSE NUMBERING

Course numbers are an approximate reflection of academic level. Freshman courses are indicated as 1000-1999, sophomore courses as 2000-2999, etc. Students are strongly urged to consult with the department prior to registration before registering for any upper-division course (3000 or 4000 level) in a field in which they have not had lower-division (1000 or 2000 level) preparation.

GRADUATION REQUIREMENTS

SENIOR AUDIT

Students expecting to graduate within one or two semesters must schedule a senior audit appointment with academic advisors to determine status with respect to the curricular requirements and give notice of intention to complete graduation requirements. Failure to complete the senior audit process in time may delay a student's graduation.

RESIDENCY REQUIREMENTS

A candidate for a degree from the College of Letters, Arts, and Sciences (LAS) must earn the last 30 credit hours in residence in the College. During these 30 credit hours, the student must be registered in LAS. All 30 credit hours must be taken on the Colorado Springs campus. Students wishing to attend another university or college simultaneously with UCCS during the last 30 credit hours must have prior approval of the dean of LAS in order to count these transfer credit hours as part of the last 30 credit hours.

LAS UNDERGRADUATE ADMISSION

Candidates for regular admission to the College of Letters, Arts, and Sciences are expected to meet the general requirements for admission to the university as described in the Admissions section of this catalog. The catalog that governs a student's graduation requirements is the one in effect at the time of a student's most recent admission into the college of the student's degree program.

FRESHMEN

TEST SCORES

Freshmen must rank in the upper 40 percent of their high school graduating class, must have 15 units of acceptable high school work (referred to as the Minimum Academic Preparation Standards, or MAPS), and have the following minimum test scores: American College Test (ACT) 24 or Scholastic Aptitude Test (SAT) 1080.

HIGH SCHOOL COURSEWORK

Freshman applicants for admission will normally be required to present the following high school units:

English (2 units of the 4 must be composition)	4
Foreign language (in one language)	2
Natural Science	3
Mathematics	3
Social Science	2
Academic electives	1
Total	**15**

Acceptable high school courses in each academic field are as follows:

English: courses in the history and appreciation of literature, composition (including all composition given as part of a basic English course), grammar, speech, and journalism are acceptable as English units.

Mathematics: courses in algebra, plane and solid geometry, trigonometry, analytic geometry, calculus, and other courses designed for college preparation and emphasizing basic concepts and principles of deductive reasoning are acceptable as mathematical units. Courses designed for other purposes (e.g., consumer mathematics, business mathematics, many courses entitled general mathematics) are not acceptable as mathematics units.

Natural Science: courses in physics, chemistry, biology, zoology, anatomy, physiology, general science, astronomy and geology are acceptable as natural science units.

Social Science: courses in American government, civics, economics, general sociology, geography, history, problems of democracy, psychology, social science and social problems are acceptable units.

Students seeking admission who do not meet the normal admission requirements may receive consideration for admission by the dean of the College of Letters, Arts, and Sciences. Inquiries concerning such admissions should be made to the Office of Admissions and Records.

COMMUNITY/JUNIOR COLLEGE TRANSFER STUDENTS

Effective for students who enter UCCS from the fall 2003 semester forward, Colorado public four-year higher education institutions will honor the transfer of an associate of science (AS) degree and the associate of arts (AA) degree earned at a Colorado community college. A student who earns an AA or AS degree at a Colorado public community college, with a C or better in each course, and completes the state guaranteed general education courses will transfer with junior standing into any arts and sciences degree program offered by a Colorado public four-year college.

The credits earned in the associate degree program will apply at minimum to 35 credit hours of lower division general education and 25 credit hours elective credit graduation requirements. This two-plus-two agreement ensures that the transfer student will be able to complete a baccalaureate degree in no more than 60 additional credit hours unless there are additional degree requirements recognized by the Colorado Commission on Higher Education.

Students who have not completed an AS or AA degree, or students who transfer from outside of Colorado, will have their transfer work evaluated on a course-by-course basis.

Transfer students from two-year institutions must also meet additional graduation requirements, such as English and reasoning skills competency testing.

TRANSFER AND FORMER STUDENTS

Students who have attended another college or university are expected to meet the general requirements for admission of transfer students to the University of Colorado, as detailed in the Admissions section of this Catalog.

A grade of C- or better is required in any course for which credit may be granted in transfer from another institution to the university. However, grades received at another institution will not be used in computing the student's grade point average at the University of Colorado, except for the averaging of all college work attempted by the time of graduation for possible special recognition, such as graduation with distinction and Latin honors.

Transfer students who graduated from high school in 1988 and later are subject to the Minimum Academic Preparation Standards (MAPS) previously described. Transfer coursework will be applied to meet MAPS deficiencies as outlined in the college policy and in accordance with existing transfer agreements.

Former UCCS students who have attended another college or university where they have completed 12 or more credit hours must reapply as transfer students and must present a 2.0 cumulative grade point average on all college work attempted to be eligible for readmission. Once readmitted, these students must fulfill the college requirements that are in effect at the time of readmission. This policy also applies to students in the College of Letters, Arts, and Sciences who transfer into another college on the UCCS campus and then transfer back into LAS to complete their undergraduate degrees.

A maximum of 72 credit hours taken at community/junior colleges and/or a maximum of 90 credit hours taken at four-year institutions may be applied toward the baccalaureate degree in the College of Letters, Arts, and Sciences.

Students should consult the Admissions section of this Catalog for the guidelines according to which transfer credits are evaluated. Because the initial evaluation of transfer credits is completed by the Degree Audit and Transfer Credit Unit, transfer students are encouraged to apply early and to have their transcripts sent to the Office of Admissions as soon as possible. Academic advisors will not be able to assess transfer credit applicability to graduation requirements until the initial transfer evaluation is complete.

Students receive an initial evaluation of their transfer work within one week of admission to UCCS. A final evaluation of their transfer work will be completed when they attend the mandatory orientation session, prior to their first registration.

UNCLASSIFIED/NON-DEGREE SEEKING STUDENTS

Students admitted to the university in Unclassified Student status may enroll in courses offered by the College of Letters, Arts, and Sciences. Application for this status should be submitted to the Office of Admissions and Records.

A student may change from unclassified to degree status and apply appropriate coursework taken as an unclassified student toward a degree. A maximum of 12 credit hours completed as an unclassified student may apply toward a degree in the College of Letters, Arts, and Sciences.

No student may change from degree status to unclassified status. Students possessing a bachelor's degree who wish to register for classes are designated as unclassified students unless they have been accepted in the college for a second bachelor's degree or have been admitted to a graduate program.

LAS UNDERGRADUATE ACADEMIC REQUIREMENTS

MAJOR REQUIREMENTS FOR LAS STUDENTS

Specific requirements for the major are detailed within each departmental program description in this Catalog. While some departments may require more, all LAS major requirements will include at least these minimum standards:

- A total of 30-54 credit hours in major courses
- A total of 30 credit hours of C grade or better in major courses
- A 2.0 grade point average in all required major courses
- A minimum of 16 credit hours of upper-division (3000+ level) major courses

Not more than 54 credit hours in one discipline and not more than 30 credit hours outside the College of Letters, Arts, and Sciences may be counted toward graduation requirements.

Students may complete a second major concurrently or at a later time. To do so, the student will be required to take at least an additional 30 credit hours, 16 hours of which must be upper-division (3000+ level). All other major requirements apply.

MINOR OPPORTUNITIES AND REQUIREMENTS

The College of Letters, Arts, and Sciences has approved the opportunity for students to take optional minors in various disciplines, including business administration. Additional information is available from the academic advisors in either the College of Letters, Arts, and Sciences or in the College of Business. For information about optional minors, please refer to the appropriate department and program sections in this catalog.

Requirements for a Minor

The following college guidelines have been established for minor programs:

- A minimum of 18 credit hours of C- grade or better must be taken in a minor area, including a minimum of 9 upper-division (3000+ level) credit hours.
- Minor requirements may not be taken pass/fail.
- Students will be allowed no more than 9 credit hours, including six upper-division credit hours, of transfer work toward a minor.
- Coursework applied toward a minor may also be applied toward general education requirements.
- Students may double count up to 9 credit hours between a major and a minor. Such double counting is permitted for at most one major and one minor pair.

Program requirements other than those above may be established by departments and program directors. Departments will ensure that minor requirements are consistent with their major requirements.

UPPER-DIVISION REQUIREMENT

Students must complete at least 45 credit hours of upper-division (3000+ level) work to be eligible for the bachelor's degree. Students may register for upper-division (3000+ level) courses if they have met prerequisites or obtained departmental approval. Courses transferred from a junior/community college carry lower-division credit.

LAS GENERAL EDUCATION REQUIREMENTS

The college requires all students to complete an English writing requirement, a reasoning proficiency requirement, area requirements, and cultural diversity, oral communications, and global awareness requirements. Assuming that a student does not test out of the writing and reasoning requirements, the total number of credit hours needed to complete the college general education requirements is 45. This requirement is in addition to the University Compass Curriculum requirement of 24 credit hours. There may be courses that can satisfy multiple requirements. Consult the Campus Wide Requirements: Compass Curriculum page and an advisor to determine the full extent of your requirements.

The College of Letters, Arts, and Sciences will accept transfer courses from the community college "general education core" and substitute these credits for credits required within the 120 hours needed for the BA or BS degree in whatever manner is most advantageous to the student. The College will also accept non-core academic courses in transfer, i.e., courses that are not considered to be vocational or technical in nature.

Students with diagnosed disabilities that hinder their ability to fulfill LAS General Education Requirements should contact Disability Services and the LAS Dean's office.

ENGLISH RHETORIC AND WRITING AND WRITING PORTFOLIO REQUIREMENTS

To qualify for a bachelor's degree from the University of Colorado Colorado Springs, a student must complete C01 and C02 core writing requirements and pass the portfolio writing competency assessment (see below).

ESL or ELL Students Enrolled in ENGL 1300 + 1305 or ENGL 1310

The Rhetoric and Writing Program advises ESL students to enroll in ENGL 1310 sections with faculty who are qualified for ESL writing instruction for non-native speakers. Please contact the Rhetoric and Writing Program, Columbine 1041 for ESL placement and enrollment consultations and advising.

Students may meet core C01 and C02 writing requirements in the following ways:

1. Successfully complete ENGL 1300 + ENGL 1305 Stretch (C01 ENGL 1310 equivalent) and ENGL 1410 at UCCS and then demonstrate writing competency.

a. To be admitted to ENGL 1300 Stretch, students must meet one of the following requirements:

1. Score 14-18 on the English ACT.
2. Score 400-440 on the verbal SAT.
3. Complete ENGL 99 with a C- or an approved ENGL 99 equivalent in transfer with a C-.
4. Early college or high school concurrent enrollment students must present an ENGL ACT score of 14-18 (UCCS on site ENGL ACT testing is available).

b. To be admitted to ENGL 1305 Stretch, students must meet the following requirement:

1. Complete ENGL 1300 Stretch with a C- or better.

2. Successfully complete ENGL 1310 and ENGL 1410 at UCCS and then demonstrate writing competency.

a. To be admitted to ENGL 1310, students must meet one of the following requirements:

1. Score 19-28 on the ENGLISH ACT.
2. Score 450-640 on the verbal SAT.
3. Complete ENGL 99 with a C-, or approved ENGL 99 equivalent with a C-.
4. Students with high school diplomas or GEDs, but without ENGL ACT or SAT scores may submit a writing sample to the Rhetoric and Writing Program, Columbine 1041, for placement.
5. Early college or high school concurrent students without high school diplomas or GEDs must present an ENGL ACT score of 19-28 (UCCS on site ACT testing is available) or a SAT score of 450-640.

b. To be admitted to ENGL 1410, students must meet one of the following requirements:

1. Complete ENGL 1300 + 1305 Stretch with a C- or better, or ENGL 1310 at UCCS.
2. Score 29+ on the English ACT.
3. Score 650+ on the English SAT.
4. Score 4 on the CEEB Advanced Placement English Language and Composition Exam.
5. Score a 5 on the IB English Examination.
6. Successfully complete a first semester writing course (an approved equivalent to ENGL 1310) at an accredited college or university with a C- or better.
7. Score 50 and receive a 'pass' on the essay portion of the CLEP College Composition Modular Exam with essays. (Not an option for Engineering majors.)

c. To demonstrate writing competency after C01 and C02 core writing, students must pass the writing portfolio competency assessment administered by the Rhetoric and Writing Program.

The "final" C02 rhetoric and writing course for each undergraduate program is listed below:

1. For LAS, SPA, and Nursing students: ENGL 1410
2. For BUS students: ENGL 2080 or INOV 2100
3. For EAS students: ENGL 2090 or INOV 2100
4. For PTW students: ENGL 2080 or 2090

Students may transfer C01 and C02 writing courses if approved as equivalents by successfully completing one or two semesters of writing at an accredited college or university with a C- or better. Transfer students must also demonstrate writing competency by passing the writing portfolio assessment after completing their final writing course at UCCS or upon transfer of their complete C01 and C02 writing requirement from an accredited college or university.

Students must demonstrate competency by passing the writing portfolio assessment within thirty (30) credit hours of having completed their second writing course at UCCS or within thirty credit hours upon transfer of the required course. Students who choose not to demonstrate competency by earning a 'pass' on their writing portfolio may alternately meet the competency requirement by successfully completing a 3000-level, advanced rhetoric and writing course at UCCS with a grade of C- or better. Students who do not submit a portfolio within thirty credit hours after completion of the C01 and C02 writing requirements will alternately complete an additional writing course at the 3000-level.

3. Qualify for a waiver of writing coursework through the CEEB Advanced Placement Examination.

a) Score 4 to receive credit for ENGL 1310, successfully complete ENGL 1410, and then pass the writing portfolio competency assessment.
b) Score 5 to receive credit for both ENGL 1310 and 1410, and then pass the portfolio assessment.

4. Qualify for a waiver of composition coursework through the International Baccalaureate higher-level English exam.

a) Score 5 to receive credit for ENGL 1310, successfully complete ENGL 1410, then pass the portfolio assessment.
b) Score 6 or 7 to receive credit for ENGL 1310 and 1410, then pass the portfolio assessment.

CLEP College Composition Modular Exam with Essays

Students who would like to earn CLEP credit for ENGL 1310 may take the College Composition Modular Exam with essays at PPCC Testing Center. For testing information, please contact the University Testing Center in Main Hall 105C, or by phone at (719) 255-3354. Not an option for Engineering majors.

Writing Portfolio Competency

To demonstrate that they have achieved proficiency in written communication, all UCCS students will submit samples of work they have completed for other courses. This must be done at least one full semester prior to graduation. In order to submit the writing portfolio, students will register for PORT 3000 - Writing Portfolio Assessment, a zero-credit hour course, and follow emailed instructions about the submission process. For more information, visit http://www.uccs.edu/~writingportfolio/.

Computer-Mediated Instruction

All composition courses are taught in computer classrooms or laptop sections. Students are billed $10.00 per course to cover technological support for the classrooms and printed materials for these courses.

English Requirements and Prerequisites

ENGL 1310 (and in some cases ENGL 1410) is required for all advanced writing courses and those in the Professional Writing Program. All students must have taken ENGL 1310 (or qualified transfer course) in order to take any literature course offered in the English Department. Note that the English workshop and ENGL 2010 are prerequisites to almost all upper division English courses, and ENGL 3000 is a prerequisite to all 4000-level literature seminars. Students are billed $10.00 for online literature course lab fees.

Students interested in taking ENGL 1450 as a lab course should contact the Writing Center Director at (719) 255-4335, or visit the Writing Center, Columbine Hall 316.

QUANTITATIVE AND QUALITATIVE REASONING PROFICIENCY REQUIREMENT

Well-educated people should be able to think at a certain level of abstraction and to manipulate symbols. The quantitative and qualitative reasoning proficiency requirement has two principal objectives. The first is to provide students with the analytical tools used in core curriculum courses and in their major areas of study. The second is to help students acquire the reasoning skills necessary to assess adequately the problems that confront them in their daily lives.

Students completing this requirement should be able to do the following:

- Construct a logical argument based on the rules of inference
- Analyze and interpret numerical data
- Obtain exact results when appropriate
- Apply mathematical methods to solve problems in their university work and in their daily lives.

Four Ways to Fulfill Requirement

1. Pass the UCCS Reasoning Skills Test (RST). This RST is offered by the University Testing Center, which can be reached at (719) 255-3554. The RST requires a fee to be paid in advance, and credit hours are not awarded to those who meet the requirement by passing the RST.

2. Successfully complete one of the following:

- ID 1050 - Quantitative and Qualitative Reasoning Skills
- ID 2000 - Mathematics: A Human Endeavor

3. Successfully complete both of the following:

- MATH 3010 - Mathematics for Elementary Teachers I
- MATH 3020 - Mathematics for Elementary Teachers II

4. Successfully complete one of the following pairs (A&C: math course and statistics/logic course or B&C: the required test scores and a statistics/logic course):

- **EITHER**: a) Complete MATH 1040 - College Algebra (or a mathematics course that has college algebra as a prerequisite) **OR** b) Score 87% or higher on the College Algebra placement test AND score 50% or higher on the Business Calculus placement test
- **AND** c) Complete one of the following courses.

  Statistics Courses

  - ANTH 3000 - Quantitative Methods in Anthropology
  - BIOL 3000 - Biostatistics
  - CHEM 4001 - Analytical Chemistry
  - COMM 2500 - Research Methods
  - GES 4000 - Statistical Analysis in Geography
  - MATH 3100 - Statistics for the Sciences
  - MATH 3810 - Introduction to Probability and Statistics
  - PES 3150 - Modern Physics Laboratory
  - PES 4150 - Solid State Laboratory
  - PES 4170 - Optics Lab
  - PSY 2100 - Introduction to Psychological Statistics
  - SOC 3170 - Social Statistics
  - UTLS 3040 - Science Research Methods

  Logic Courses

  - PHIL 1120 - Critical Thinking
  - PHIL 3420 - Symbolic Logic I
  - PHIL 4420 - Symbolic Logic II

AREA REQUIREMENTS: HUMANITIES, SOCIAL SCIENCES, AND NATURAL SCIENCES

Each prospective LAS graduate is expected to have completed 9 semester hours in each of three areas—humanities, social sciences, and natural sciences. The total requirement is 27 hours, and, with the exception of the core humanities course, can be satisfied entirely by lower division (freshman/sophomore) courses. Any cross-list for the courses listed below will also satisfy the relevant requirement.

Specific Limitations

- No more than two courses from any one discipline may be applied to the area requirements.
- With the exception of Distributed Studies, courses in a student's primary major may not be applied to the area requirements.
- Courses may not be taken pass/fail.

Humanities Courses—9 Credit Hours

The humanities course requirement must be satisfied in part by successful completion of one UCCS 3000 level humanities courses. The remaining six hours may be selected from the list below or may be satisfied by community college humanities courses that are equivalent or similar in content to those listed below.

Art History

- AH 1000 - Art Through the Ages, Part I
- AH 1001 - Art Through the Ages, Part II
- AH 2800 - Survey: Ancient Art
- AH 2810 - Survey: Medieval Art

- AH 2820 - Survey: Renaissance, Baroque, and Rococo Art
- AH 2860 - Survey: Modern Art I
- AH 2890 - Survey: Nineteenth Century Art
- AH 3430 - African American Art

Communication

- COMM 2250 - Introduction to Film and Video
- COMM 3100 - Directing for Film and Television
- COMM 3500 - American Cinema
- COMM 4000 - Rhetorical Dimensions in Communication

English

- ENGL 1500 - Introduction to Literature for Non-Majors
- ENGL 2600 - Literature: The Global Perspective I
- ENGL 2610 - Literature: The Global Perspective II
- ENGL 3320 - Born in the USA: Masterpieces of American Literature
- ENGL 3900 - Topics in Literature

Film Studies

- FILM 1000 - Introduction to Film Studies
- FILM 2000 - Narrative Film
- FILM 3690 - Topics in Hispanic Film

History

- HIST 1120 - Asian History: The Indian Subcontinent
- HIST 1130 - Asian History: China
- HIST 1140 - Asian History: Japan
- HIST 1400 - Latin America to 1810
- HIST 1410 - Latin America Since 1810
- HIST 1540 - U.S.: Recent America, 1918-Present
- HIST 1600 - Making of the Modern Middle East I
- HIST 1610 - Making of the Modern Middle East II

Interdepartmental Studies

- ID 2000 - Mathematics: A Human Endeavor

Languages and Cultures

- FCS 3180 - German and Austrian Civilization and Culture **or**
- GER 3180 - German/Austrian Civilization and Culture from 1700-1918
- FCS 3190 - 20th and 21st Century German and Austrian Civilization and Culture **or**
- GER 3190 - 20th and 21st Century German and Austrian Civilization and Culture
- FCS 3240 - French Culture from 1700-1917 **or**
- FR 3240 - French Culture from 1700-1917
- FCS 3690 - Topics in Hispanic Film **or**
- FILM 3690 - Topics in Hispanic Film **or**
- SPAN 3690 - Hispanic Culture Through Film

- FCS 3890 - Field Studies in Language and Culture
- FCS 4210 - Hispanic Heritage of Colorado **or**
- SPAN 4210 - Hispanic Heritage of Colorado

Music

- MUS 1000 - Introduction to Music
- MUS 2050 - Jazz History
- MUS 2850 - Topics in Music History and Research I

Philosophy

- PHIL 1000 - Introduction to Philosophy
- PHIL 1020 - Introduction to Ethics
- PHIL 1120 - Critical Thinking
- PHIL 1300 - Introduction to Philosophies of Asia
- PHIL 3000 - Cosmology and Culture
- PHIL 3100 - World Religions
- PHIL 3160 - Philosophical Issues in Death and Dying
- PHIL 3180 - Practical Ethics
- PHIL 4070 - Existentialism

Theatre

- THTR 1000 - Introduction to Theatre
- THTR 3201 - Topics in Early Theatre History
- THTR 3202 - Topics in Modern Theatre History

Visual Arts

- VA 1010 - Beginning Studio-2D
- VA 1020 - Beginning Studio 3D

Women's and Ethnic Studies

- WEST 2030 - Hiphop and the Performance of Identities
- WEST 2040 - Global Black Women Writers
- WEST 3020 - Me, Myself, and I: Life Writing, Autobiography and the Creation of the Self
- WEST 3100 - Women of Color: Image and Voice
- WEST 3550 - Native American Literature
- WEST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4280 - Native American Philosophical Thought
- WEST 4920 - Spiked: Spike Lee's Cinema

Social Science Courses—9 Credit Hours

The 9-hour social science area requirement may be met by the lower and upper division courses that are listed below. Students who transfer to UCCS from community colleges may fulfill this area requirement by substituting courses that are equivalent or similar in content to those listed below.

Anthropology

- ANTH 1020 - Introduction to Archaeology

- ANTH 1040 - Introduction to Cultural Anthropology
- ANTH 2800 - The Nature of Language
- ANTH 3040 - Women Around the World
- ANTH 3260 - Agricultural Origins and the Emergence of Urban Society
- ANTH 3270 - Archaeology of the Recent Past

Communication

- COMM 1020 - Interpersonal Communication
- COMM 2150 - Male/Female Communication
- COMM 3440 - Organizational Leadership
- COMM 4200 - Persuasion
- COMM 4220 - Creative Communication
- COMM 4250 - Advanced Interpersonal Communication: Conflict Management

Economics

- ECON 1000 - The Economics of Social Issues
- ECON 1010 - Introduction to Microeconomics
- ECON 1050 - Economics in Practice
- ECON 2020 - Introduction to Macroeconomics
- ECON 3150 - History of Economic Thought
- ECON 3710 - Comparative Economic Systems

Geography and Environmental Studies

- GES 1980 - World Regional Geography
- GES 1990 - Introduction to Human Geography

Gerontology

- GRNT 2300 - Transitions in Adulthood: Lifecourse Perspectives
- GRNT 3000 - Introduction to Gerontology

Museum Studies and Gallery Practice

- MSGP 4100 - Native American Perspectives on Museums

Philosophy

- PHIL 3200 - Politics and the Law
- PHIL 3210 - Capitalism: A Love Story
- PHIL 4260 - Philosophy of Law
- PHIL 4400 - Philosophy of Science

Political Science

- PSC 1010 - Introduction to Global Politics
- PSC 1100 - The American Political System
- PSC 2080 - Introduction to Comparative Politics
- PSC 2100 - Politics and Policy in State and Local Communities
- PSC 3300 - The Bureaucrats
- PSC 4190 - Politics of the Developing Areas
- PSC 4210 - International Politics

- PSC 4470 - Constitutional Law

Psychology

- PSY 1000 - General Psychology
- PSY 3630 - Sex Crimes Against Children

Sociology

- SOC 1110 - Introduction to Sociology
- SOC 2200 - Introduction to Racial and Ethnic Groups
- SOC 2220 - Communities in a Global Environment
- SOC 2250 - Gender Images
- SOC 2300 - Transitions in Adulthood: Lifecourse Perspectives
- SOC 2500 - Social Problems
- SOC 3070 - Social Research Methods
- SOC 3340 - Food, Health, and Inequality
- SOC 3610 - Gender and Society

Women's and Ethnic Studies

- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 2500 - Race and Gender at the Movies
- WEST 3060 - Multi-Racial Identities
- WEST 3070 - Global Men and Masculinities
- WEST 3090 - Peep Show: Sexuality in Popular Culture
- WEST 3620 - Media and Consumption: Monopolies, Myths, and Misrepresentations
- WEST 4100 - Native American Perspectives on Museums
- WEST 4120 - Indigenous Views on Sustainability: All My Relations
- WEST 4500 - Social Justice and Sustainability: Living Mindfully

Natural Science Courses-9 Credit Hours

The 9-hour natural science area requirement may be satisfied by the lower and upper division courses listed below, including at least one laboratory science course. (Laboratory science courses are indicated by *.) Community college students transferring to UCCS may fulfill this requirement by substituting courses that are equivalent or similar in content to those listed below.

Anthropology

- ANTH 1030 - Introduction to Human Origins
- ANTH 3320 - Primatology
- ANTH 3340 - Human Evolution
- ANTH 3370 - Human Biology and Ecology

Biology

- BIOL 1000 - Biology in the Modern World
- * BIOL 1060 - Introductory Biology Laboratory
- BIOL 1050 - Personal Nutrition
- BIOL 2000 - Environmental Physiology
- BIOL 3750 - Conservation Biology

Chemistry

- CHEM 1101 - Chemistry in the Modern World
- * CHEM 1102 - Chemistry in the Modern World Laboratory
- CHEM 1111 - Environmental Science
- * CHEM 1112 - Environmental Science Laboratory
- CHEM 1121 - CSI: Forensic Chemistry
- * CHEM 1122 - CSI: Forensic Chemistry Laboratory
- * CHEM 1201 - Introduction to Chemistry
- * CHEM 1211 - Introduction to Organic and Biochemistry
- CHEM 1401 - General Chemistry I
- * CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- * CHEM 1412 - General Chemistry Laboratory II
- CHEM 1511 - General Chemistry for Majors II
- * CHEM 1513 - General Chemistry Laboratory for Majors II

Energy Science

- ENSC 1500 - Introduction to Energy Science I
- ENSC 1510 - Introduction to Energy Science II
- ENSC 1600 - Introduction to Solar Energy
- * ENSC 1620 - Solar Energy Laboratory
- ENSC 3200 - Practical Meteorology

Geography and Environmental Studies

- GES 1000 - Environmental Systems: Climate and Vegetation
- GES 1010 - Environmental Systems: Landforms and Soils
- * GES 1050 - Introduction to Map & Compass
- GES 3200 - Practical Meteorology
- GES 3250 - The Geography of Climate Change

Geology

- * GEOL 1010 - Physical Geology
- GEOL 1020 - Historical Geology
- * GEOL 1530 - Geological Development of Colorado and the West
- GEOL 3170 - Geology and Our National Parks
- GEOL 3700 - Environmental Geology
- GEOL 4660 - Field Study in Geology

Interdepartmental Studies

- ID 2050 - Beyond the Finite
- ID 3210 - Emergence of Infinity in Arts and Sciences

Physics and Energy Science

- PES 1000 - Physics in Everyday Life
- * PES 1140 - Introduction to Physics Laboratory

- PES 1040 - Physics in Science Fiction
- PES 1050 - General Astronomy I
- * PES 1090 - General Astronomy Laboratory I
- PES 1060 - General Astronomy II
- * PES 1100 - General Astronomy Laboratory II
- PES 1310 - A Lab of Her Own: Science and Women
- PES 1600 - Introductory Solar Energy
- * PES 1620 - Solar Energy Laboratory
- PES 1710 - Honors Physics I
- * PES 1160 - Advanced Physics Lab I **or**
- * PES 1170 - Advanced Physics Lab I Honors Section
- PES 1720 - Honors Physics II

Psychology

- PSY 3270 - Introduction to Biopsychology

ORAL COMMUNICATION REQUIREMENT

LAS students are required to take a course with a substantial component involving oral communication. This course may be within a student's major department, as an elective, or as an approved general education (area requirements) course. Approved courses for the oral communication requirement are as follows:

- BIOL 4040 - Biology Lab Instructor Preparation Course
- CHEM 4911 - Chemistry Capstone
- CHEM 4921 - Biochemistry Capstone
- COMM 2010 - Oral Communication in the Workplace
- COMM 2100 - Public Speaking
- COMM 3240 - Business and Professional Communication
- COMM 4100 - Advanced Public Speaking
- MATH 4040 - Senior Math Seminar
- PES 4810 - Senior Physics Seminar
- PHIL 1040 - The Individual and Society
- PHIL 4950 - Senior Project
- TED 4600 - Elementary - School Experience
- TED 4700 - School Experience - Secondary
- THTR 2020 - Acting Workshop I
- THTR 2030 - Acting Workshop II
- THTR 2040 - Voice and Articulation I
- THTR 2050 - Improvisational Theatre
- THTR 3100 - On-Camera Performance

CULTURAL DIVERSITY REQUIREMENT

While fulfilling their general education requirements, LAS students are required to take a course which also increases their awareness of cultural diversity in the United States. Approved courses for the cultural diversity requirement are as follows:

- AH 3430 - African American Art

- ANTH 3250 - Native Peoples of the Southwest
- ANTH 3420 - North American Indians
- ASL 4000 - Contrastive Linguistic Analysis: ASL/English
- COMM 3280 - Intercultural and Global Communication
- ENGL 3320 - Born in the USA: Masterpieces of American Literature
- ENGL 4060 - Diversity Topics in Professional and Technical Writing
- FCS 3360 - U.S. Latina/o Literature
- FCS 4210 - Hispanic Heritage of Colorado
- GES 4680 - Inequality USA
- HIST 3520 - History of Latinos in the U.S.
- HIST 3580 - Immigrant Histories
- MUS 2050 - Jazz History
- PHIL 3180 - Practical Ethics
- PHIL 3230 - Gender, Race, and Sexuality
- PHIL 4550 - Feminism, Sexuality, and Culture
- SOC 2200 - Introduction to Racial and Ethnic Groups
- SOC 2250 - Gender Images
- SOC 3220 - Urban and Community Sociology
- SOC 3250 - Power, Privilege and Social Difference
- SOC 3290 - Perspectives on Race and Ethnic Relations
- SOC 4240 - Sociology of Dis/Ability
- SOC 4290 - Sport, Film, and Society
- SOC 4390 - Diversity Issues
- SOC 4480 - Racial Storytelling: Montgomery Travel Course
- SOC 4680 - Inequality USA
- SPAN 4210 - Hispanic Heritage of Colorado
- SPAN 4420 - Hispanic/Latino US Literature
- THTR 3240 - Women in Theatre
- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 2020 - Introduction to Diversity Issues
- WEST 3090 - Peep Show: Sexuality in Popular Culture
- WEST 3130 - Gender, Race, and Sexuality
- WEST 3150 - Power, Privilege, and Social Difference
- WEST 3250 - The Prehistory and History of Native American Cultures of the Southwest
- WEST 3290 - Perspectives on Race and Ethnic Relations
- WEST 3360 - U.S. Latina/o Literature
- WEST 3420 - North American Indians
- WEST 3520 - History of Latinos in the United States
- WEST 3580 - Immigrant Histories
- WEST 4120 - Indigenous Views on Sustainability: All My Relations
- WEST 4280 - Native American Philosophical Thought
- WEST 4390 - Diversity Issues
- WEST 4480 - Racial Storytelling: Montgomery Travel Course
- WEST 4500 - Social Justice and Sustainability: Living Mindfully
- WEST 4550 - Feminism, Sexuality, and Culture
- WEST 4680 - Inequality USA

- WEST 4920 - Spiked: Spike Lee's Cinema

GLOBAL AWARENESS REQUIREMENT

While fulfilling their general education requirements, LAS students are required to take a course which increases their awareness of global issues. Approved global awareness courses are as follows:

- AH 3450 - Art of Japan
- AH 3460 - Islamic Arts
- AH 4450 - Meso-American Art and Architecture: Sacred Time and Space
- AH 4470 - Art and Ritual of the South Pacific
- ANTH 1040 - Introduction to Cultural Anthropology
- ANTH 3040 - Women Around the World
- CHEM 1111 - Environmental Science
- CHEM 4521 - Environmental Chemistry
- ECON 3590 - Globalization
- ECON 3710 - Comparative Economic Systems
- ENGL 2600 - Literature: The Global Perspective I
- ENGL 2610 - Literature: The Global Perspective II
- ENGL 4065 - Intercultural Professional and Technical Writing
- EUST 3000 - Introduction to European/EU Culture
- FCS 3180 - German and Austrian Civilization and Culture
- FCS 3190 - 20th and 21st Century German and Austrian Civilization and Culture
- FCS 3250 - Contemporary France: Civilization and Culture
- FCS 3380 - Caribbean Literature, History, and Theory
- FCS 3690 - Topics in Hispanic Film
- FCS 3890 - Field Studies in Language and Culture
- FILM 2000 - Narrative Film
- FILM 3690 - Topics in Hispanic Film
- FR 3250 - Contemporary France: Civilization & Culture
- GER 3180 - German/Austrian Civilization and Culture from 1700-1918
- GER 3190 - 20th and 21st Century German and Austrian Civilization and Culture
- GES 1980 - World Regional Geography
- GES 1990 - Introduction to Human Geography
- GES 3070 - Geography of Sub-Saharan Africa
- GES 3400 - Geopolitics
- GES 3820 - Mexico, Central America, and the Caribbean
- GES 3980 - Places and Faces: Geographic Issues in Film
- GES 4640 - Mega-Cities
- GRNT 3560 - Women and Aging International: Diversity, Challenges, and Contributions
- HIST 1110 - Asian History: Southeast Asia
- HIST 1120 - Asian History: The Indian Subcontinent
- HIST 1130 - Asian History: China
- HIST 1140 - Asian History: Japan
- HIST 1400 - Latin America to 1810
- HIST 1410 - Latin America Since 1810
- HIST 1600 - Making of the Modern Middle East I

- HIST 1610 - Making of the Modern Middle East II
- HIST 3120 - The Panorama of World Civilizations to 1500
- HIST 3220 - Genocide: The Case of the Nazis and Jews
- HIST 3560 - Modern Mexico
- HIST 3570 - The City in Latin America
- HIST 3590 - Latin American History Through Film
- HIST 3680 - Islam and the West: Contacts, Representations, and Approaches
- HIST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- HIST 4060 - Middle East Women in Film
- HIST 4130 - Baghdad to Burgos: Jews, Christians, & Muslims in the Medieval Mediterranean World (600-1500 C.E.)
- HIST 4150 - Astrolabes, Arms, & Azulejos (Tiles): Medieval Science, Technology, & Material Culture(600-1500 C.E.)
- HIST 4160 - A Crossroads of Civilizations: Medieval Spain and North Africa (600-1500 C.E.)
- HIST 4280 - Beyond the Pillars of Hercules: The Trans-Atlantic Empires of Spain and Portugal (1450-1750 C.E.)
- HIST 4860 - Research Seminar: Mexico and U.S. Borderlands
- ID 3700 - Art and Culture of Equatorial Africa
- ID 3710 - Great European Film Directors: A Historical View 1945-Present
- ID 3720 - Russian Avant-Garde Cinema: A Historical View, 1915-Present
- ID 3730 - Russian Art Cinema Today: A Historical View
- ID 3740 - Andrzej Wajda and Cinema of Poland
- ID 3750 - Cinema of Denmark
- ID 3760 - Kurosawa Akira and Post World War II Cinema of Japan
- MUS 3150 - Introduction to Ethnomusicology
- PHIL 1300 - Introduction to Philosophies of Asia
- PHIL 1400 - Introduction to Sustainability and Environmental Ethics
- PHIL 3000 - Cosmology and Culture
- PHIL 3100 - World Religions
- PHIL 3240 - Images of War and Terrorism
- PHIL 3345 - Philosophy of the Body: Western and Indian Perspectives
- PHIL 3400 - Holocaust
- PHIL 3480 - Philosophies of India
- PHIL 3490 - Philosophies of China
- PHIL 3500 - Buddhist Philosophy
- PSC 1010 - Introduction to Global Politics
- PSC 2070 - Introduction to International Relations
- PSC 2080 - Introduction to Comparative Politics
- PSC 2090 - Political Conflict
- PSC 3240 - War and Peace
- PSC 4170 - Mexican Political Development
- PSC 4190 - Politics of the Developing Areas
- PSC 4210 - International Politics
- PSC 4570 - Middle Eastern Politics
- PSC 4580 - African Politics
- PSC 4590 - Globalization

- PSY 3560 - Women and Aging International: Diversity, Challenges, and Contributions
- SOC 2220 - Communities in a Global Environment
- SOC 3340 - Food, Health, and Inequality
- SOC 4380 - Globalization and Development
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4660 - Sociology of Medicine
- SOC 4700 - Global Feminisms
- SPAN 3690 - Hispanic Culture Through Film
- WEST 3380 - Caribbean Literature, History, and Theory
- WEST 3480 - Global Women's Issues
- WEST 3560 - Women and Aging International: Diversity, Challenges, and Contributions
- WEST 3680 - Islam and the West: Contacts, Representations, and Approaches
- WEST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4060 - Middle East Women in Film
- WEST 4170 - The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4380 - Globalization and Development
- WEST 4700 - Global Feminisms

FOREIGN LANGUAGE REQUIREMENT

As of January 1, 1993, the College of Letters, Arts, and Sciences no longer has a foreign language requirement. However, a variety of language classes will continue to be offered for students who wish to study a foreign language. Students contemplating graduate school should be aware that many graduate schools require proficiency in a foreign language.

Newly admitted freshmen are still required to have completed two units of foreign language at the high school level. Freshmen admitted who are deficient in this requirement may make up the deficiency as outlined in the beginning of the College of Letters, Arts, and Sciences section of this Catalog. The foreign language placement examination will continue to be administered for those students wishing to determine their level of placement in a foreign language course. For information, contact the Language Technology Center on the second floor of Dwire Hall at (719) 255-3691.

Students are urged to continue language study in a timely manner, as proficiency declines rapidly without application of skills.

Note: If coursework in a foreign language taken at other institutions is repeated at the same level at UCCS, academic credit for any hours duplicated will not be counted toward graduation.

PROGRAMS OFFERED BY THE COLLEGE OF LAS

The College of Letters, Arts, and Sciences offers several degree programs, minors, and certificates, in addition to those offered through the individual departments.

PHILOSOPHY AND POLITICAL SCIENCE BACHELOR OF ARTS DOUBLE MAJOR

This degree plan is designed for students interested in pursuing legal careers through Law Schools or other professional programs.

The Philosophy and Political Science double major reduces the total number of credit hours taken from both departments from 66 to 60, and allows the Philosophy Senior Thesis requirement to be optional.

GENERAL REQUIREMENTS

- 30 credit hours of Philosophy coursework, at least 21 of which must be upper-division (3000+ level).
- 30 credit hours of Political Science coursework, at least 24 of which must be upper-division (3000+ level).
- All courses must be completed with grades of C or better.
- An exit exam and portfolio must be completed prior to graduation.

COURSE REQUIREMENTS

Philosophy Courses

Complete one of the following courses in logic.

- PHIL 1120 - Critical Thinking
- PHIL 3420 - Symbolic Logic I
- PHIL 4420 - Symbolic Logic II

Complete 27 credit hours of elected Philosophy courses. 21 total PHIL credit hours must be upper-division. Students are encouraged to take:

- PHIL 4950 - Senior Project

Political Science Courses

General Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry

Complete one course from each of the following lists.

American Political Institutions and Behavior Courses

- PSC 2100 Politics and Policy in State and Local Communities
- PSC 3030 Political Parties
- PSC 3050 Race and Ethnicity in American Politics
- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3480 Legislative Internship
- PSC 4020 The American Congress
- PSC 4040 Political Interest Groups
- PSC 4080 US Electoral Process
- PSC 4390 The Presidency
- PSC 4470 Constitutional Law
- PSC 4480 Civil Rights and Liberties

Global Politics Courses

- PSC 2090 Political Conflict
- PSC 3110 Emerging Nations

- PSC 4140 European Politics
- PSC 4180 Gender in International Politics
- PSC 4210 International Politics
- PSC 4220 Comparative Politics
- PSC 4230 The United States in World Politics
- PSC 4240 Russian Politics
- PSC 4260 International Organization
- PSC 4270 Latin America in World Politics
- PSC 4280 International Political Economy
- PSC 4290 International Environmental Politics
- PSC 4530 Model United Nations
- PSC 4560 The Arab-Israeli Conflict
- PSC 4570 Middle Eastern Politics
- PSC 4580 African Politics
- PSC 4590 Globalization
- PSC 4600 The Politics of Terrorism

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete PSC elective courses to meet total and upper-division credit hour requirements.

American Politics/Public Law Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4470 Constitutional Law

Complete three courses from the following lists.

American Political Institutions and Behavior Courses

- PSC 2100 Politics and Policy in State and Local Communities
- PSC 3030 Political Parties
- PSC 3050 Race and Ethnicity in American Politics

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3480 Legislative Internship
- PSC 4020 The American Congress
- PSC 4040 Political Interest Groups
- PSC 4080 US Electoral Process
- PSC 4390 The Presidency
- PSC 4470 Constitutional Law
- PSC 4480 Civil Rights and Liberties

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete PSC elective courses to meet total and upper-division credit hour requirements.

Global Politics Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4210 International Politics
- PSC 4220 Comparative Politics

Complete three courses from the following list.

Global Politics Courses

- PSC 2090 Political Conflict
- PSC 3110 Emerging Nations
- PSC 4140 European Politics
- PSC 4180 Gender in International Politics
- PSC 4210 International Politics
- PSC 4220 Comparative Politics
- PSC 4230 The United States in World Politics
- PSC 4240 Russian Politics
- PSC 4260 International Organization

- PSC 4270 Latin America in World Politics
- PSC 4280 International Political Economy
- PSC 4290 International Environmental Politics
- PSC 4530 Model United Nations
- PSC 4560 The Arab-Israeli Conflict
- PSC 4570 Middle Eastern Politics
- PSC 4580 African Politics
- PSC 4590 Globalization
- PSC 4600 The Politics of Terrorism

Complete elective PSC courses to meet total and upper-division credit hour requirements.

Public Administration Track

- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4320 Public Administration
- PSC 4460 Administrative Law

Complete three courses from the following list.

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete PSC elective courses to meet total and upper-division credit hour requirements.

SOCIOLOGY AND WOMEN'S AND ETHNIC STUDIES BACHELOR OF ARTS DOUBLE MAJOR

The Sociology department and WEST program offer a double major for students interested in majoring in both degrees. Double majors are allowed to:

- Double-count 6 credit hours of any courses cross-listed in both Sociology and WEST.
- Choose a WEST or SOC Summit Experience.

GENERAL REQUIREMENTS

- 30 credit hours in Sociology and 30 credit hours in WEST. 18 credit hours of upper-division (3000+ level) courses must be taken from each department.
- Complete the Summit Experience.
- All courses in SOC and WEST must be completed with a grade of C or better.
- Credit hours will total 54-55, depending on Summit Experience selection.

COURSE REQUIREMENTS

Sociology Courses

- SOC 1110 - Introduction to Sociology
- SOC 3070 - Social Research Methods
- SOC 3150 - Modern Sociological Theory
- SOC 3170 - Social Statistics

Complete three of the following substantive courses.

- SOC 3280 - Asian American Communities
- SOC 3290 - Perspectives on Race and Ethnic Relations
- SOC 3310 - Sociology of the Family
- SOC 3410 - Sociology of Law
- SOC 4040 - Sociology of Gender and Sexuality
- SOC 4080 - Men and Masculinities
- SOC 4170 - Advanced Statistics and Methods
- SOC 4190 - Deviant Behavior
- SOC 4200 - Sociology of Poverty
- SOC 4240 - Sociology of Dis/Ability
- SOC 4300 - Sociology of Sport
- SOC 4380 - Globalization and Development
- SOC 4400 - Contemporary Social Movements
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4660 - Sociology of Medicine
- SOC 4960 - Juvenile Delinquency

Women's and Ethnic Studies (WEST) Courses

- WEST 1010 Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 3400 Advanced Theory: An Intersectional Approach
- Complete 6 credit hours of upper-division (3000+ level) WEST elective courses.

Complete one course from each of the following WEST Substantive Areas. Courses cannot be counted in more than one area.

Transnational/Global Studies

- WEST 3070 Global Men and Masculinities
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3480 Global Women's Issues
- WEST 3550 Native American Literature
- WEST 3560 Women and Aging International: Diversity, Challenges, and Contributions

- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4050 From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4100 Native American Perspectives on Museums
- WEST 4120 Indigenous Views on Sustainability: All My Relations
- WEST 4170 The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4700 Global Feminisms

Creative and Artistic Expression

- WEST 2040 Global Black Women Writers
- WEST 2500 Race and Gender at the Movies
- WEST 3020 Me, Myself, and I: Life Writing, Autobiography and the Creation of the Self
- WEST 3100 Women of Color: Image and Voice
- WEST 3360 U.S. Latina/o Literature
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3550 Native American Literature
- WEST 3990 Readings in Multiethnic Literature
- WEST 4060 Middle East Women in Film
- WEST 4100 Native American Perspectives on Museums

Social Movements, Communities, and History

- WEST 2030 Hiphop and the Performance of Identities
- WEST 2070 Foundations in Native American Studies
- WEST 3060 Multi-Racial Identities
- WEST 3090 Peep Show: Sexuality in Popular Culture
- WEST 3130 Gender, Race, and Sexuality
- WEST 3150 Power, Privilege, and Social Difference
- WEST 3290 Perspectives on Race and Ethnic Relations
- WEST 3480 Global Women's Issues
- WEST 3620 Media and Consumption: Monopolies, Myths, and Misrepresentations
- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4120 Indigenous Views on Sustainability: All My Relations
- WEST 4140 Unnatural Disasters: Hurricane Katrina, Climate, and Our Future on a Changing Planet
- WEST 4160 The Transatlantic Slave Trade: A Comparative, Cross-cultural Perspective

Check updated lists at http://www.uccs.edu/west/current_students/substantive.html.

SUMMIT EXPERIENCE

Option 1: complete each of the following.

- One SOC/WEST cross-listed, upper-division (3000+ level) elective course
- One WEST upper-division (3000+ level) elective course
- One of the following Tracks
- The Sociology Exit Exam

Honors Track (will receive departmental honors upon successful completion)

- SOC 4980 Capstone Preparatory
- SOC 4990 The Sociology Capstone

Standard Track
Complete one SOC course with a Compass Curriculum Summit flag. Courses on the Substantive list that have a Summit flag may double count. Options may include the following courses. Additional options may be available in any given semester. Contact the sociology department chair, Dr. Heather Albanesi, at halbanes@ucss.edu, for more information.

- SOC 4080 - Men and Masculinities
- SOC 4170 - Advanced Statistics and Methods
- SOC 4180 - Community Organization and Analysis
- SOC 4300 - Sociology of Sport
- SOC 4310 - Class, Stratification and Power
- SOC 4380 - Globalization and Development
- SOC 4400 - Contemporary Social Movements
- SOC 4480 - Racial Storytelling: Montgomery Travel Course
- SOC 4590 - Youth Gangs
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4660 - Sociology of Medicine
- SOC 4960 - Juvenile Delinquency

Option 2

- WEST 3300 - Methodologies in Women's and Ethnic Studies
- One SOC/WEST cross-listed, upper-division (3000+ level) elective course
- WEST 4950 - Capstone Senior Seminar

GRADUATE CERTIFICATE IN COGNITIVE ARCHAEOLOGY

PURPOSE

This document specifies the procedures for obtaining the Graduate Certificate in Cognitive Archaeology from the Center for Cognitive Archaeology at the University of Colorado Colorado Springs (UCCS). These procedures will be governed by the policy requirements of the UCCS College of Letters, Arts and Sciences (LAS) and the UCCS Graduate School.

The Graduate Certificate in Cognitive Archaeology provides students at UCCS and throughout the world the opportunity to study the evolutionary development of cognition in humans, early hominids, and non-human primates through a variety of courses offered by the UCCS Departments of Psychology, Anthropology, and Philosophy. Cognitive archaeology is a relatively new multidisciplinary field that applies and integrates concepts from the more traditional fields of cognitive psychology, cognitive neurosciences, neuropsychology, anthropology, archaeology, linguistics, and philosophy. Cognitive archaeology considers the origins and adaptive evolutionary purposes of cognitive processes and capabilities such as concept formation, spatial cognition, social cognition, language, symbolic structures, and working memory.

At the present time, this certificate is unique. By offering a Graduate Certificate in Cognitive Archaeology, UCCS is uniquely positioned to be at the forefront of this educational opportunity, both nationally and internationally.

By offering the certificate through courses taught on campus and online, UCCS is able to market the certificate to students throughout the world. This educational opportunity is invaluable to students majoring in a variety of

disciplines, including psychology, anthropology, philosophy, linguistics, cognitive studies, and interdisciplinary studies.

The certificate will not constitute a formal credential for gainful employment. It is intended only as recognition of a particular course of study.

CERTIFICATE OUTLINE AND REQUIREMENTS

The certificate may be awarded at the master's and doctoral levels upon completion of twelve credit hours (total) in specified core and elective courses offered by the UCCS Departments of Anthropology, Psychology, and Philosophy.

Students shall complete twelve credit hours of core and elective courses at the 5000 level.

For information on curriculum and application requirements, please visit the Center for Cognitive Archaeology website.

Letters of application, inquiries, and portfolios should be sent to:

Thomas Wynn, PhD, Certificate Program Director
University of Colorado Colorado Springs
Center for Studies in Cognitive Archaeology
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918

UNDERGRADUATE CERTIFICATE IN COGNITIVE ARCHAEOLOGY

Purpose

The Undergraduate Certificate in Cognitive Archaeology provides students at UCCS and throughout the world the opportunity to study the evolutionary development of cognition in Homo sapiens and other primates through a variety of courses in the UCCS Departments of Psychology, Anthropology, and Philosophy. Cognitive archaeology is a relatively new multidisciplinary field that applies and integrates concepts from the more traditional fields of cognitive psychology, cognitive neurosciences, neuropsychology, anthropology, archaeology, linguistics, and philosophy. Cognitive archaeology considers the origins and adaptive evolutionary purposes of cognitive processes and capabilities such as concept formation, spatial cognition, social cognition, language, symbolic structures, and working memory.

At the present time, this certificate is unique. By offering the certificate through courses taught on campus and online, UCCS is able to offer the certificate to students throughout the world. This educational opportunity is invaluable to students majoring in a variety of disciplines, including psychology, anthropology, philosophy, linguistics, cognitive studies, and interdisciplinary studies.

Certification Requirements

- Students shall be currently enrolled at UCCS or concurrently enrolled at an accredited university.
- Students shall complete twelve (12) upper-division credit hours (two core and two elective courses) offered by the UCCS Departments of Anthropology, Psychology, and Philosophy, covering the core and elective courses listed under Curriculum.

- Students accepted into the certificate program shall maintain a 3.00 GPA once undergraduate courses are started.
- Complete a written portfolio for review, consisting of one sample of written work from each class.
- Complete evaluation and suggestions for program development.

For a current curriculum list, application requirements, and additional information, please visit the Center for Cognitive Archaeology website.

Letters of application, inquiries, and portfolios should be sent to:
Thomas Wynn, PhD, Certificate Program Director
University of Colorado Colorado Springs
Center for Studies in Cognitive Archaeology
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918

APPLIED SCIENCE, PHD

There are three options in the Applied Science, PhD:

- Interdisciplinary
- Mathematics
- Physics

INTERDISCIPLINARY OPTION

We offer an interdisciplinary option for students who desire a tight integration of two disciplines within the program (Mathematics and Physics). These students will have co-advisors from the two different disciplines. The student and the advisors will design a sequence of courses which is appropriate for the student's research direction and maintains academic rigor. Because the student in the interdisciplinary option will straddle two disciplines, the student will not be expected to take the full set of qualifying exams for both disciplines. However, the student must take two PhD level qualifying exams from one or both disciplines, demonstrating an appropriate expertise in the selected interdisciplinary areas. For more information regarding this option, please contact Dr. Tom Christensen at tchriste@uccs.edu.

Program Requirements

- Complete a minimum of 36 credit hours of coursework.
- Complete a minimum of 30 credit hours of dissertation work.

Credit hours of coursework and dissertation work must total 75.

MATHEMATICS OPTION

The Department of Mathematics of the University of Colorado Colorado Springs is delighted to be able to offer a program of study leading to a PhD as part of the University's PhD in Applied Science degree. For more information on this graduate program, please contact Dr. Chakravarty at schakrav@uccs.edu; 719-255-3549. You can refer to the Math Faculty Research Interests page at http://www.uccs.edu/math/about-us/faculty-research.html for a summary of primary research interests among department faculty. Please see the Math Department website at www.uccs.edu/math/graduate-programs.html for more information.

Admission Requirements

The admission criteria include but are NOT limited to the following requirements. Any decision regarding admission is made by the Graduate Committee on an individual basis, after taking into consideration the application material and supporting documents.

- Hold a baccalaureate degree from an accredited college or university. Applicants with degrees other than mathematics (e.g., biological sciences, physics, engineering) should have mathematical preparation comparable to that of a baccalaureate in mathematics.
- Have an undergraduate GPA of at least 3.00 ("A" is equivalent to 4.0).
- Promising students who do not meet all of the admission requirements may be considered for provisional admission.
- GRE scores are recommended but not required.

International applicants must demonstrate English language proficiency by one of the approved methods that can be found at: http://www.uccs.edu/math/graduate-programs/applications-and-forms/english-proficiency-requirements.html.

Transfer Credits Policy

Students transferring into the program with graduate work or a Master's degree in an appropriate discipline must satisfy the admissions requirements above. Graduate level courses completed outside UCCS prior to admission may be transferable into the program. Typically, transfer credits will not exceed 25% of the total required credit hours. In unusual circumstances, applicants may request a review of their records to determine whether additional credits may be transferred. Decisions regarding transfer of graduate credits are made by the appropriate graduate advisor, and are subject to the regulations of the UCCS Graduate School.

Specific Program Requirements

- Students must satisfy coursework, examination, and dissertation requirements.
- The total credit hours of graduate coursework and dissertation work applied to the degree must be 75. This total may include coursework applied toward a Master's degree.
- Students must complete a minimum of 30 credit hours of graduate coursework, and a minimum of 30 credit hours of dissertation work.
- Independent study may not exceed 25% of the minimum number of credit hours required for the degree.
- As part of the graduate coursework, students must complete 3 two-semester sequences from the list of core courses.

Mathematics Core Courses (18 credit hours)
Each PhD student in the mathematics track will complete three designated course sequences chosen from the following areas. They will choose two sequences on which to complete departmental exams.

Complex Analysis

- MATH 6610 - Complex Analysis I
- MATH 6620 - Complex Analysis II

Real Analysis

- MATH 6350 - Applied Functional Analysis
- MATH 6330 - Real Analysis I

Applied Differential Equations

- MATH 5430 - Ordinary Differential Equations
- MATH 6440 - Approximation Methods in Applied Mathematics

Probability

- MATH 6910 - Theory of Probability I
- MATH 6920 - Theory of Probability II

Ring Theory

- MATH 6170 - Rings and Modules I
- MATH 6180 - Rings and Modules II

Scientific Computation

- MATH 5670 - Scientific Computation I
- MATH 6680 - Scientific Computation II

Examinations

- Students in the PhD program will normally take two written preliminary examinations and two written comprehensive examinations.
- These examinations are closely linked to the content of graduate courses, but they have distinct content descriptions, and may require independent study of material not covered in the courses.
- The preliminary examinations cover real analysis and linear algebra at the Master's degree level. The graduate committee will review the performance on the preliminary examinations to determine if the student may move forward in the PhD program. At the discretion of the graduate committee, the required preliminary examinations may be waived for students entering the graduate program with a Master's degree, or with a comparable level of preparation.
- The two PhD comprehensive examinations will each cover material corresponding to one of the three required PhD core sequences.
- Normally, students will have at most two attempts to pass each comprehensive exam, and may attempt exams in no more than three distinct core subject areas. Exceptions must be approved by the graduate committee.
- There will be an oral dissertation proposal examination administered by the dissertation advisory committee to determine if the dissertation topic is appropriate, and if the student is adequately prepared for work on the dissertation.
- After the dissertation has been accepted by the dissertation advisor, a final oral dissertation defense examination will be conducted by the dissertation advisory committee.

PHYSICS OPTION

The Physics Department offers a program leading to a PhD in Applied Science with a specialization in Physics. The key information about the program is given below.

For information about the graduate program, please contact Dr. Robert Camley at rcamley@uccs.edu.

The primary research interests of the department can be found at http://www.uccs.edu/~physics/research.html.

Admission Requirements

Applicants must:

- Hold a baccalaureate degree in biological sciences, mathematics, physics, or equivalents from an accredited college or university.
- Have an undergraduate GPA of at least 3.00 ("A" is equivalent to 4.0).
- Non-English speaking applicants must complete the TOEFL exam with a minimum score of 560 (paper-based exam) or 220 (internet-based exam). If the student has completed one year of full-time academic study at a U.S. institution, this requirement can be waived. An oral interview with a Physics faculty member may also be required as proof of English proficiency, as the department sees fit.
- Provide three letters of recommendation, all past university transcripts, and complete an application form.
- Promising students who do not meet all of the requirements may be considered as provisional applicants.

The graduate application forms can be found on the Graduate School website.

Transfer of Credits

Students transferring into the program with a Master's degree in an appropriate discipline also need to satisfy all the standards below for graduation. However, students may request a review of their existing credits and may have the number of credits required reduced at the discretion of the physics graduate advisor. **If appropriate, the entire set of Master's degree courses can be applied to the PhD program**.

Program Requirements

The student must complete a total of 66 credit hours of coursework and dissertation. This includes:

1. A minimum of 36 credit hours of coursework with GPA above 3.0:
   - 21 credit hours of Core courses
   - 15 credit hours of Specialization, Elective or Interdisciplinary courses
2. A minimum of 30 credit hours of dissertation work, and complete and successfully defend the dissertation.

To meet the 66 credit hour requirement, the student will need to have additional coursework or additional dissertation hours above the minimum.

Physics Core Courses (21 credit hours)

- PHYS 5030 - Mathematical Methods in Physics
- PHYS 5410 - Statistical Mechanics
- PHYS 6210 - Theoretical Mechanics
- PHYS 6250 - Introduction to Quantum Mechanics
- PHYS 6260 - Quantum Mechanics II
- PHYS 6310 - Electromagnetic Theory I
- PHYS 6320 - Electromagnetic Theory II

Primary Physics Elective Courses
Courses from other departments may be used as electives with the consent of the graduate advisor.

- PHYS 5150 - Solid State Laboratory
- PHYS 5160 - Thin Films Laboratory
- PHYS 5200 - Computational Physics
- PHYS 5420 - Physics of Materials
- PHYS 5460 - Introduction to Solid State Physics I
- PHYS 5480 - Surface and Interface Physics
- PHYS 5490 - Physics of Thin Films
- PHYS 5720 - Stellar Structure and Evolution
- PHYS 5950 - Special Topics when offered as Biophysics, Nonlinear Dynamics, Magnetism and Magnetic Materials, or Theoretical Physics

Examinations

There will be a comprehensive examination administered by the dissertation advisory committee to determine if the dissertation topic is appropriate, and if the student is adequately prepared for work on the dissertation. This exam will normally be given when a student has completed 9 dissertation credit hours. Students refusing to take the comprehensive exam when asked by Physics faculty member(s) may have a hold placed on their enrollment until this fulfilment is completed.

After the dissertation has been accepted by the dissertation advisor, a final oral dissertation defense examination will be conducted by the dissertation advisory committee. The dissertation committee will contain physics faculty plus one outside member of the graduate faculty (from another department or another university). The dissertation advisor will be in charge of choosing the committee.

LETTERS, ARTS, AND SCIENCES MASTER OF SCIENCES DEGREE PROGRAM (MSC)

The Master of Sciences (MSc) Program is a cross-disciplinary program leading to the Master of Sciences degree. It provides an opportunity for present and prospective science and mathematics professionals and others to extend and/or broaden their training in the natural and physical sciences and mathematics at advanced undergraduate and graduate levels. This program is the only graduate-level program in the natural and physical sciences that can be taken entirely at UCCS. The breadth of the program allows students to emphasize their principal discipline of interest and also to take several courses in a related department. There is no list of required courses in the degree program. Instead, each student designs his or her own program in consultation with a departmental advisor.

The MSc options are:

- Biology
- Biochemistry / Chemistry
- Mathematics
- Physics

Wide latitude is possible in the details of a degree plan so that each student may follow a course of study most pertinent to his or her interests and career goals. Each degree plan must be approved by the MSc Director and the student's advisor.

REQUIREMENTS FOR ADMISSION

General regulations for admission to the Graduate School apply. The regulations can be found at www.uccs.edu/~gradschl. Each program has its own admission criteria. Please refer to each option's criteria.

How to Apply

Applications are submitted online. Application information can be found on the Graduate School website (www.uccs.edu/~gradschl). Contact your program of interest for specific admission requirements.

REQUIREMENTS FOR MSC DEGREE

Each program has its own standards for the MSc degree. All requirements are subject to the general regulations of the Graduate School.

THESIS OR NON-THESIS OPTION

Each MSc student has the option of selecting Plan I or Plan II. See particular option for specifics.

Plan I: Thesis Option

30 credit hours, 3 to 6 of which must be thesis credit. At least 24 credit hours must be at the graduate level, 15 of which must be taken in their primary department. A minimum of three credit hours must be taken from a secondary department. Student must write a thesis on their research, give a presentation, and defend their thesis before a thesis defense committee. Please see your program advisor of department for the Thesis and Dissertation Guidelines and Manual.

Plan II: Non-Thesis Option

30 credit hours. At least 24 credit hours must be at the graduate level, 15 of which must be taken in their primary department. A minimum of three credit hours must be taken from a secondary department. Student must complete a paper describing a research project or other specialized study on a topic and give a presentation. This paper must be approved by the student's committee.

BIOLOGY OPTION

The Department of Biology offers a program leading to the degree of Master of Sciences (MSc) with options in Molecular & Cellular Biology, Exercise Science, and Ecology & Evolution. Graduate students pursue coursework in biology and one other science discipline (e.g., physics, chemistry, mathematics), providing students with a diverse curriculum and an understanding of how various science disciplines relate to each other. This interdisciplinary program offers students a broad science education with few restrictive requirements compared to traditional graduate science programs. It allows for development of a plan based on individual needs.

Program Options

- Ecology and Evolution
- Exercise Science
- Molecular and Cellular Biology

For specific program information, please see the comprehensive Program Information document at http://www.uccs.edu/Documents/biology/MScHndbkFINAL.pdf, or the Biology department page at http://www.uccs.edu/biology/future-students/graduate-program.html.

Admission Requirements

- Bachelor's degree from an accredited college or university
- Undergraduate GPA of at least 3.0
- Completion of 40 credit hours of natural and physical science and mathematics courses
- Two semesters of calculus or one semester of calculus and one semester of statistics
- GRE, general test

Under certain circumstances, applicants not meeting the criteria for admission as a regular degree student may be recommended by the faculty for admission as a 'provisional admissions' student. The department may assign coursework and/or examinations that must be taken to make up deficiencies. When the conditions for regular status are met, the program advisor will reclassify the student to regular status.

Transfer Students

Up to 12 credit hours of appropriate upper-level coursework with a grade of B or better that are not counted toward a degree and earned at any CU campus may be requested for transfer into the MSc program. Double counting of undergraduate and graduate courses is not allowed. These credit hours are computed into the students' graduate GPA but the undergraduate transcripts remain unchanged (i.e., there is no physical movement of courses on the transcripts).

Up to 9 credit hours of appropriate upper-level coursework with a grade of B or better that are not counted toward a degree and completed at an institution other than the University of Colorado may be requested for transfer into the MSc program. These credit hours are not computed into the students' graduate GPA.

Biology Option Degree Requirements

Thesis and Capstone Project Options

The MSc degree is designed for students intending to become professional biologists. The standard MSc degree plan requires a thesis and is appropriate for those seeking advanced graduate work. See Thesis Option Requirements below for more information. A Capstone Project option is offered for students who are not focused on graduate work beyond the MSc. Students in the Capstone Project Option will enroll in BIOL 6050 Biology Master's Capstone Project instead of thesis hours, and complete additional coursework to complete the degree. See Capstone Project Option Requirements below for more information. Students may switch to the capstone project option on consultation with their major advisor and the MSc program advisor.

General Requirements for Both Options

- Complete a total of 30 credit hours of upper-level coursework.
- BIOL 5010 Seminar in Biology must be taken the second semester enrolled.
- A minimum of 24 credit hours of 5000-level courses with the remaining at the 4000-level.
- At least one course must be taken from another department participating in the MSc program (e.g., chemistry, physics, geography, health sciences, mathematics).
- All courses must be taught by faculty appointed to the Graduate Faculty.
- Courses taken pass/fail will not count toward the degree.

Thesis Option Requirements

- Complete all general requirements
- Complete 6 credit hours of BIOL 7000 Masters Thesis.
- Commit at least 15 hours per week to performing research toward the completion of the thesis research.

- After the first semester, complete one credit hour per semester of Biol 7000 or BIOL 5010 Seminar in Biology.

Capstone Project Option Requirements

- Complete all general requirements.
- Complete 3 credit hours of Independent Study (or another graduate level course).
- Complete BIOL 6050 Biology Master's Capstone Project.

Additional Requirements for All Students

- Maintain a GPA of 3.0 or higher.
- A maximum of 6 credit hours of Independent Study, Research Practicum, or Externships will count toward the degree.
- Any course in which the student receives a grade of C (C+, C-, or lower in courses where + and - are used) will not be counted toward the degree.
- The student will be allowed to retake any one course in which the student receives a C or lower; if a B- or above is not achieved on the retake, the student will be dismissed from the program.
- Two consecutive grades of C (C+, C, C-) or lower will be cause for dismissal from the program.

CHEMISTRY OPTION

The Department of Chemistry and Biochemistry offers a program leading to the degree of Master of Sciences (MSc) in Chemistry. The following focus areas are available.

- Analytical Chemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry

Admission Requirements

The student should choose a research mentor in consultation with the Program Director during the application process. To be admitted to the program, a research adviser must agree to the student working in his or her laboratory. In consultation with the Program Director the student should also prepare a list of courses to be taken to fulfill program requirements when applying to the program. A thesis committee will be chosen at the start of a student's program. The committee will assist the research advisor in monitoring student progress throughout the length of the student's program. The committee will also administer the thesis examination required for the MSc degree.

Guaranteed Admission

A student who is in his or her final semester studying toward the BA/BS in Chemistry or Biochemistry at UCCS or is within one year of graduation is guaranteed admission to the MSc program, if he or she satisfies all of the following criteria:

- Has completed a minimum of 45 credits at UCCS at the time of graduation.
- Has a minimum grade point average of 3.20.
- Has two letters of recommendation from faculty members in Chemistry or Biochemistry.

Regular Admission

Regular admission to the MSc program requires that the student meets the following requirements:

- Has attained a Bachelor's degree in chemistry or biochemistry from an accredited College or University.
- Has an undergraduate cumulative GPA of 3.00
- Has a combined GRE percentile score of 50th percentile or higher

Applicants must complete the online Graduate School application and include four letters of recommendation, one official transcript from each college or university attended, and pay a non-refundable $60 application fee. International students must also meet Graduate School requirements for the TOEFL or IELTS exams.

Provisional Admission
Students who meet all of the requirements for regular admission listed above, but who have a GPA between 2.75 and 3.00 may be considered for provisional admission. Program faculty may assign coursework and/or examinations that must be taken to make up deficiencies. When the conditions for regular status are met, the program director will reclassify the student to regular status. Each candidate is evaluated individually for provisional admission.

Transfer of Credit

- Up to 12 credit hours of coursework with a grade of B or better and earned at UCCS may be requested for transfer into the MSc program. These credit hours are computed into the student's graduate GPA.
- Up to 9 credit hours of coursework with a grade of B or better and completed at an institution other than UCCS may be requested for transfer. This request may be submitted only after completion of 9 credit hours of coursework as a regular admission student into the MSc program. These credit hours are not computed into the student's graduate GPA.
- Courses applied to a graduate degree elsewhere or within the CU System may be transferred for MSc credit with permission of the chemistry faculty.

Chemistry Option Degree Requirements

Coursework and Thesis

- 15 credit hours of coursework, which must be taken at the 5000-level or above (This typically includes five 5000-level chemistry courses or four 5000-level chemistry courses and one 5000-level course from another department.)
- At least 9 credit hours of CHEM 5904 Research: Graduate
- 6 credit hours of CHEM 7000 Masters Thesis
- Thesis defense exam (open to the public)

Evaluation of Progress
Each student will:

- Present a 20-minute progress report each semester to the research adviser and, when possible, to the thesis committee members. The research adviser will complete a report to be sent to the Program Director and be added to the student's file.
- Present a seminar to the capstone class in chemistry or biochemistry during the spring semester of the first year on a research topic different than the student's research. The student's thesis committee members are strongly encouraged to attend. This is a zero credit hour requirement.
- Confer with the Program Director once per semester to update the student's program plan, discuss student progress, and any identify any problem areas. The report will be added to the student's file.

MATHEMATICS OPTION

The Master of Sciences (MSc) with Mathematics Emphasis Program is a cross-disciplinary program leading to the Master of Sciences degree. It provides an opportunity for present and prospective science and mathematics professionals and others to extend and/or broaden their training in the natural and physical sciences and mathematics at advanced undergraduate and graduate levels. All courses credited toward the degree after admission must be taken at the University of Colorado, on the Colorado Springs, Denver, Health Sciences or Boulder campuses, over a maximum of five years or six successive summers.

Admission Requirements

The admission criteria include but are NOT limited to the following requirements. Any decision regarding admission is made by the Graduate Committee on an individual basis, after taking into consideration the application material and supporting documents.

- Bachelor's degree from an accredited university
- At least 40 credit hours in the natural sciences and mathematics, including one year of calculus. Students may be admitted to the program with a deficiency in mathematics but must remedy the deficiency within one year after admission with a grade of B or better

GPA of 3.00 or higher on a 4.00 scale. A student with an undergraduate grade point average below 3.00 may be considered for admission, subject to approval by the Graduate Committee.

Mathematics Option Degree Requirements

General regulations of the Graduate School governing the award of the Master's degree apply except as modified below:

- 30-36 credit hours of science and/or mathematics courses are required.
    - All courses must be taken from approved Graduate School faculty members.
    - 24 or more credit hours in science/math must be from courses numbered 5000 or above. Courses may be selected from the following departments: Biology, Chemistry, Education, Health Sciences, Geography, Mathematics, and Physics. Courses from other departments must be approved by the Chair of the Graduate Committee.
    - Because not all courses will be appropriate for all programs, students should first consult with their advisor before enrolling. An academic plan should be completed during the student's first semester.
    - Minimum grade point average: Courses at the 3000 and 4000 levels will be accepted toward the degree only with grades of A or B; 5000 and 6000 level courses will be accepted toward the degree with grades of A, B, or C. Students must have a B average in all courses taken subsequent to admission to the program, including courses not actually required for the degree.
- Select Thesis or Non-Thesis option.
    - Thesis Option: 30 credit hours, including a minimum of 6 hours of thesis credit. At least 15 credit hours must be at the graduate level in their primary department. A minimum of three credit hours must be taken from a secondary department. Student must write a thesis on their research, give a presentation, and defend their thesis before a thesis defense committee. Please consult

with the Graduate Committee Chair and the Graduate School for the Thesis and Dissertation Guidelines and Manual.

- Non-Thesis Option: 30 credit hours; at least 15 credit hours must be at the graduate level in their primary department. A minimum of three credit hours must be taken from a secondary department. Student must complete a paper describing a project on a mathematical topic approved by the Graduate Committee. The final paper must be approved by the Graduate Committee.

PHYSICS OPTION

Admission Requirements

- Applicants with a BA or BS in physics or in a related area, such as chemistry, computer science, electrical engineering or mathematics, are natural candidates for graduate study in physics
- A BS or BA degree from a college or university of recognized standing, or work equivalent to that required for such a degree and equivalent to the degree given at this university
- Considerable coursework in physics
- Sufficient mathematical background, i.e. at least two semesters of mathematics beyond the normal calculus sequence, such as differential equations and mathematical methods of physics
- Promise of ability to pursue advanced study and research
- Undergraduate grade point average of at least 3.0 on a 4.0 scale

Students with an undergraduate grade point average of less than 3.0 but at or above 2.5, or students with an inadequate background, may be allowed into the program provisionally. This decision would be made by the UCCS Physics Graduate Student Committee. Provisional status would subsequently be removed and a student given regular standing after completion of nine hours of graduate courses with a 3.0 average (or better).

Students with **international transcripts** must take the Physics GRE exam. A minimum score for regular admission is in the range of 520-550.

Applicants for whom **English is a second language** must complete the TOEFL exam with a minimum score of 560 (paper-based exam) or 83 (internet-based exam) or 220 (internet-based exam). A band score of 6.5 on the IELTS is also acceptable. If the student has successfully completed one year of full-time academic study at a U.S. institution, this requirement can be waived. An oral interview may also be required, as the department sees fit.

Students who are **transferring** from other physics graduate programs must meet the minimum standards outlined above and have a 3.0 average (or better) in all graduate work done previously. Full credit, up to nine hours (normally one semester of full-time coursework), will be given for coursework done previously, assuming the prior work is done at accredited institutions with approved programs. Course equivalency will be decided by the UCCS Physics Graduate Student Committee after interviewing the student and comparing textbooks, class notes, or any other helpful documentation.

For more information on our Graduate programs, prospective students should contact the Graduate Co-Advisor, Professor Robert Camley. Students already in the program should contact the Graduate Co-Advisor, Assistant Professor Karen Livesey, for information on graduation paperwork.

Physics Option Degree Requirements

- Select Thesis or Non-Thesis option.
  - Thesis option: 30 credit hours, including at least 6 hours of thesis credit.
  - Non-Thesis option: 30 credit hours from the approved courses.
- Regular degree students must maintain at least a 3.0 grade point average each semester or summer term on all work taken, whether or not it is to be applied toward the advanced degree intended. Students who fail to maintain this standard of performance will be subject to suspension from the Graduate School.
- The Master's Comprehensive Exam is an exit oral exam that must be passed by all students. Students electing the thesis option may substitute an oral defense of their thesis. Students in the non-thesis option are required to write a short (15 page, double-spaced) typed paper summarizing either some original research or summarizing a research topic in current physics. The paper should be at a graduate physics level. The exam consists of a 30-40 minute presentation of the paper with questions on the topic from the faculty.
- The committees for exit exams will consist of three members of the graduate faculty, one of whom is the student's advisor. The other two members will typically be from the physics department, but one may be selected from a related discipline such as electrical engineering, mathematics, computer science or chemistry.

Concentration Areas

In order to design a more specialized degree, students may concentrate their elective courses in areas outside of physics. Concentration areas could include space studies, electrical engineering, mechanical engineering, geography, computer science, applied mathematics or other graduate disciplines. These concentration areas might be appropriate for students who have very well-defined career objectives which require a combination of physics with another discipline. Students should consult with the Physics graduate program advisor to establish a course sequence for the MSc degree.

MATHEMATICS AND SCIENCE TEACHING OPTIONS

This option requires 36 credit hours of study. The same rules are followed as for the science option except that 24 credit hours of science/math and 12 credit hours of education courses are required.

For the 12 credit hours of required education courses, students should consult their advisors to choose courses suitable for their programs.

Students may select either Plan I: Thesis or Plan II: Non-Thesis option.

BA/BS-MSC DUAL DEGREE PROGRAM OPTION

For students majoring in biology, chemistry, or physics. The dual degree program is a high quality, five-year program designed for students who wish to pursue further graduate studies such as doctoral programs and for those who wish to be gainfully employed in work in the natural or physical sciences upon graduation.

By achieving two degrees in a shorter period than traditionally possible in some of the MSc disciplines, students can benefit from an enriching research experience beyond what they would achieve by completing a BA or a BS alone.

ADMISSION REQUIREMENTS

Applicants must be biology, chemistry, or physics majors, have junior or senior status, and a minimum overall GPA of 3.1. Qualified students will be admitted to the Dual Program (as Dual Program majors) based upon the recommendation of the faculty (three letters of recommendation). Students will be accepted into the Dual Program as juniors or seniors, and, subject to their satisfactory performance, are subsequently accepted into the graduate school upon completion of the BA or BS degree.

Transfer Students

Upon receiving acceptance to UCCS, transfer students interested in the Dual Program should consult with a departmental advisor.

BA REQUIREMENTS

Each department has a minimum set of requirements in the major that must be met before a student can be admitted to the Dual Program.

DUAL PROGRAM REQUIREMENTS

The degree plan for each student is drawn up in cooperation with the department program advisor and department chair. Every student is expected to take 120 undergraduate credit hours and 30 graduate credit hours. However, some 5000-level credit hours may be taken during the fourth year, and more 4000-level undergraduate credit hours may be taken during the fifth year (more than for a typical MSc student).

After completing these minimum requirements, a Dual Program student can then proceed to complete additional upper level courses. Consultation with the program advisor and department chair is required to formulate an academic plan for the Dual Program.

CLASSICS MINOR

The Classics minor is an interdisciplinary minor with participation from departments in the College of Letters, Arts, and Sciences. The field of Classics extends through all aspects of Greek and Roman culture from antiquity through the medieval period. The Classics minor at UCCS is an interdisciplinary program focusing on the study of art, culture, history, literature, philosophy, religion, theatre and women's studies in conjunction with language training in Greek and Latin. The program aims to integrate these into a larger picture of Greco-Roman culture and, from this perspective, to deepen our understanding of our own.

Participating faculty include: Judith Couchman (VAPA), Brian Duvick (History), Katherine Mack (English), Mary France Smith (Languages and Cultures), Allison Postell (Philosophy, Director of Classics), and Tom Wynn (Anthropology).

GENERAL REQUIREMENTS

- 26 credit hours, 9 of which must be upper-division (3000+ level); 8 credit hours must be either in Latin or in Greek; the remainder may be chosen from the list of approved courses for the minor.
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Language Courses

Either 8 credits in Greek from the following:

- GRK 1010 - Beginning Classical Greek I
- GRK 1020 - Beginning Classical Greek II
- GRK 1100 - Beginning Koine Greek I
- GRK 1200 - Beginning Koine Greek II

OR 8 credits in Latin from the following:

- LAT 1010 - Beginning Latin I
- LAT 1020 - Beginning Latin II
- LAT 2110 - Intermediate Latin I
- LAT 2120 - Intermediate Latin II
- LAT 3110 - Classical Literature - Latin **or**
- FCS 3650 - Classical Literature in Translation - Latin

Additional Courses for the Minor

Choose 18 total credits from the following list of courses, at least one of which shall be from Art History, one of which shall be from History, and one of which shall be from Philosophy.

- AH 2800 - Survey: Ancient Art
- AH 3240 - The Art of Greece and Rome
- AH 3790 - Romanesque and Gothic Art
- ANTH 3260 - Agricultural Origins and the Emergence of Urban Society
- HIST 1010 - The Ancient World
- HIST 3010 - Women in Classical Antiquity
- HIST 3150 - Mesopotamian History
- HIST 3160 - History of Ancient Egypt
- HIST 3170 - History of Ancient Greece
- HIST 3180 - History of Ancient Rome
- HIST 3190 - Rise and Fall of Athenian Democracy
- HIST 4210 - History of Christianity: Primitive Church to circa 300
- PHIL 3120 - Greek and Roman Myth
- PHIL 3140 - Women in Classical Antiquity
- PHIL 3510 - Pre-Socratic Philosophy
- PHIL 3520 - Plato
- PHIL 3530 - Hellenistic Philosophy
- PHIL 3540 - Medieval and Renaissance Philosophy
- PHIL 3550 - Aristotle
- PHIL 3610 - Jewish Philosophy
- PHIL 3620 - Christian Thought
- PHIL 3630 - Gender and Race in Biblical Literature
- WEST 3140 - Women in Classical Antiquity

COGNITIVE STUDIES MINOR AND CERTIFICATE

Cognitive Studies is an interdisciplinary area of research concerned with understanding the nature and development of intelligent capacities such as perception, language, reasoning, planning, problem-solving, and related skills. The program is administered under the direction of Professor Dorothea Olkowski, dolkowsk@uccs.edu.

Cognitive Studies examines different approaches to questions concerning the nature of mind, the representation of knowledge, the acquisition, comprehension, and production of language, the development of learning and intelligence, the use of information to draw inferences and make decisions, and the assessment of "goodness of fit" between purportedly similar systems (e.g., the computer and the mind).

Exploration of some or all of these questions has been and is being undertaken in such disciplines as cognitive psychology, linguistics, philosophy, intelligence, neuroscience, social cognition and others. The concentration in Cognitive Studies represents a formal means of bringing together students and faculty in different disciplines who share common interests. We seek to enrich the view provided by any one discipline through an exploration or the methodologies of others.

The goal of the Cognitive Studies Certificate is to provide a structured way for undergraduates to study and carry out research in cognitive studies with guidance from faculty members affiliated with the Philosophy, Psychology and other departments. Any student in any major may pursue a certificate or minor in cognitive studies.

GENERAL REQUIREMENTS

- 18 credit hours of coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Core Courses

Complete four of the following:

- ANTH 4310 - Cognitive Evolution
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- PHIL 3390 - Philosophy of Psychology
- PHIL 4040 - Phenomenology
- PHIL 4200 - Consciousness
- PSY 3130 - Learning and Cognition
- PSY 3270 - Introduction to Biopsychology

Elective Courses

Complete 6 credit hours of the following:

- ANTH 2800 - The Nature of Language
- PHIL 3170 - Theories of Knowledge
- PHIL 3300 - Philosophy of Mind
- PHIL 3330 - Emotion and Cognition
- PHIL 3340 - Love and Hate: Philosophy, Literature, & Cognitive Science
- PHIL 3420 - Symbolic Logic I
- PHIL 3560 - Modern Classical Philosophy

- PHIL 3570 - Kant and the Enlightenment
- PHIL 4400 - Philosophy of Science
- PHIL 4410 - Philosophy of Biology
- PHIL 4420 - Symbolic Logic II

The following courses are open to non-Psychology majors:

- PSY 3140 - Cognitive Psychology
- PSY 3200 - Psychology of Learning
- PSY 3480 - Selected Topics in Psychology [when Dream Analysis (1 credit) is offered]
- PSY 3620 - Developmental Psychology
- PSY 3650 - Clinical Neuropsychology
- PSY 4050 - Physiological Psychology
- PSY 4170 - Sensation and Perception
- PSY 4220 - Introduction to Language Behavior

The following courses are open only to Psychology majors:

- PSY 4130 - Seminar in Learning and Cognition
- PSY 4270 - Seminar in Biopsychology
- PSY 4280 - Seminar in Abnormal Psychology

MATHEMATICS AS LIBERAL ART MINOR

A minor in mathematics as a liberal art is offered by the interdepartmental studies program of the College of Letters, Arts, and Sciences and is designed to give students a special view of mathematics as a liberal art. Prime emphasis is on the ideas of mathematics rather than on skill, and on aesthetic aspects of mathematics such as beauty, elegance and paradoxy, that brings mathematics close to the arts. Special attention is paid to the questions of what mathematics is, what mathematicians do, how they pursue their research, and what role intuition plays. Also of interest is the human aspect of mathematics in the life and work of its creators. This program may be of a special interest to students majoring in humanities, mathematical education, and natural sciences. A degree option is available for elementary, secondary and special education teachers. Please contact Academic Advising or the College of Education for further information. The Colorado Mathematical Olympiad, held annually at UCCS, provides a valuable field experience for the program.

For further information about the minor, please contact Professor Alexander Soifer: asoifer@uccs.edu.

GENERAL REQUIREMENTS

- At least 18 credit hours, 9 of which must be upper division (3000+ level).
- A grade point average of at least 2.0 (C); all courses applied to the minor must be completed with a grade of C- or better.
- A substitution of required course by an equivalent course is subject to approval by Professor Alexander Soifer.

COURSE REQUIREMENTS

- ID 2000 - Mathematics: A Human Endeavor
- ID 4450 - Creators of Mathematics: A Historic View
- ID 4800 - What Is Mathematics?

Complete 9 credit hours from the following:

- ID 2050 - Beyond the Finite
- ID 3210 - Emergence of Infinity in Arts and Sciences
- ID 4500 - A Serious Course in Recreational Mathematics
- ID 4850 - Geometric Insight in Combinatorial Mathematics
- ID 4900 - Mathematical Coloring
- MATH 3110 - Theory of Numbers
- MATH 3500 - Graph Theory

POLITICAL ECONOMY MINOR

GENERAL REQUIREMENTS

- 24 credit hours of coursework, 12 of which must be upper-division (3000+ level), to be taken in both the Economics and Political Science departments.
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- ECON 1010 Introduction to Microeconomics **or** ECON 1050 Economics in Practice
- ECON 2020 - Introduction to Macroeconomics
- PSC 1010 - Introduction to Global Politics
- PSC 1100 - The American Political System

Complete two of the following Economics courses.

- ECON 3150 - History of Economic Thought
- ECON 3500 - Economic History of the United States
- ECON 3710 - Comparative Economic Systems
- ECON 3770 - Economic Development
- ECON 3850 - Law and Economics
- ECON 4510 - Constitution and the Economy
- ECON 4520 - Economic Freedom
- ECON 4530 - Power and Prosperity

Complete two of following Political Science courses.

- PSC 3030 - Political Parties
- PSC 3420 - Political Theory
- PSC 4020 - The American Congress
- PSC 4130 - Latin-American Politics and Development
- PSC 4210 - International Politics
- PSC 4220 - Comparative Politics
- PSC 4260 - International Organization
- PSC 4270 - Latin America in World Politics
- PSC 4280 - International Political Economy
- PSC 4390 - The Presidency
- PSC 4460 - Administrative Law
- PSC 4470 - Constitutional Law

PRE-LAW MINOR

Students seeking a pre-law minor as a preparation for law school or for general interest should contact The Center for Legal Studies at UCCS. It is a resource for students in the Pre-Law Program. Contact the Center's Director, Raphael Sassower, at rsassowe@uccs.edu.

LSAT preparation courses are routinely offered through the college's Extended Studies program.

GENERAL REQUIREMENTS

- 18 credit hours, 12 of which must be upper-division (3000+ level).
- All coursework for the minor must be completed in at least two of the seven departments that participate in the program (Communication, Economics, Philosophy, Political Science, Psychology, Sociology, and Women's and Ethnic Studies).

COURSE OPTIONS

- COMM 4750 - Communication Law
- ECON 3850 - Law and Economics
- PHIL 1120 - Critical Thinking
- PHIL 1150 - What Is Justice?
- PHIL 3200 - Politics and the Law
- PHIL 3420 - Symbolic Logic I
- PHIL 4260 - Philosophy of Law
- PSC 1100 - The American Political System
- PSC 2450 - American Political Thought
- PSC 3420 - Political Theory
- PSC 3430 - Law and Literature
- PSC 4250 - International Law
- PSC 4460 - Administrative Law
- PSC 4470 - Constitutional Law
- PSC 4480 - Civil Rights and Liberties
- PSC 4490 - The Judicial System
- PSC 4510 - Defendant's Constitutional Rights
- PSY 3940 - Psychology and the Law
- PSY 4430 - Seminar in Social Issues Psychology and the Law ONLY
- SOC 3250 - Power, Privilege and Social Difference
- SOC 3360 - Sociology of Drugs and Addiction
- SOC 3400 - Criminology
- SOC 3410 - Sociology of Law
- SOC 3490 - Youth Gangs
- SOC 4520 - Sociology of Corrections and Rehabilitation
- SOC 4960 - Juvenile Delinquency
- WEST 3010 - Women in Politics
- WEST 3150 - Power, Privilege, and Social Difference

*Special Topic courses which are offered in the departments but are not listed here, and which might qualify toward the minor, require the consent of the Director of the Pre-Law Minor.

SUSTAINABLE DEVELOPMENT MINOR

Sustainable Development is an interdisciplinary minor with courses offered from departments and colleges across campus. Many courses emphasize experiential, project-based and service learning. The minor is designed to prepare students for the challenges and obligations of the 21st century, specifically by contributing to UCCS and local organizations on issues relating to the environment and social equity, promoting economic vitality, and recognizing civic responsibilities both at home and abroad.

LEARNING OUTCOMES

- Identify core concepts and critiques of sustainable development
- Learn to describe the interdependency of sustainable development's three pillars of equity, environment, and economy
- Understand the current state of knowledge regarding global climate change, accurately depict where uncertainty exists with respect to climate change, and identify examples of social (i.e., equity), economic, and environmental impacts resulting from climate changes
- Develop independent and collaborative research skills

RATIONALE FOR SUSTAINABLE DEVELOPMENT MINOR

Education for sustainability is an imperative for colleges and universities; so much so, the United Nations has named 2005-2015 the Decade of Education for Sustainable Development. Because this university is an integral part of the regional economy and local community, we have a fundamental responsibility to teach, train and conduct research for sustainability-creating a framework addressing environmental, social, and economic factors. We believe the success of higher education in the future will be judged in part by our ability to put forth a clear agenda, making sustainable development a cornerstone of our academic and administrative practices.

The minor is expected to create a more responsible, active set of global citizens.

GENERAL REQUIREMENTS

- 18 credit hours of coursework, 12 of which must be upper division (3000+ level).
- There are three focal perspectives in sustainability- environment, equity, and economy. Students must choose one core course from two of the three perspectives, and select at least one elective course from the third perspective.
- Students must also complete the 2-credit course GES 4800 - Sustainability Seminar, which provides an overview of sustainability principles as well as an opportunity for an in-depth group project that contributes to improved local sustainability. The seminar culminates in a public presentation at the end of the semester.
- Special topics courses, internships, independent studies or other courses that are not listed below may qualify for credit in the minor by consent of the Director of the Sustainable Development Minor. Students may double count up to nine credit hours between a major and the Sustainable Development Minor. Such double counting is permitted for at most one major and one stand-alone minor pair. Coursework applied toward a minor may also be applied toward general education requirements.

COURSE REQUIREMENTS

Core Courses

Complete two courses from those listed below. Each course must be from a different Core Area. Additional courses from the three areas may be taken to fulfill the general 18 credit hour requirement.

Environment

- BIOL 3750 - Conservation Biology
- CHEM 1111 - Environmental Science
- GES 1500 - Introduction to Environmental Studies and Sustainability
- GES 3170 - Saving Place
- GES 3180 - Changing Place
- GES 3250 - The Geography of Climate Change
- GEOL 3700 - Environmental Geology
- HSCI 4090 - Food, Culture, Community, and Health
- ENSC 1500 - Introduction to Energy Science I **or**
- PES 1500 - Introduction to Energy Science I

Equity

- ANTH 3430 - Anthropological Approaches to Globalization
- GES 4560 - Cultural and Political Ecology
- PHIL 1400 - Introduction to Sustainability and Environmental Ethics
- SOC 4380 - Globalization and Development
- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 3220 - Native Communities
- WEST 3420 - North American Indians
- WEST 4120 - Indigenous Views on Sustainability: All My Relations
- WEST 4280 - Native American Philosophical Thought
- WEST 4400 - Indigenous Peoples and Cultures of the Southwest

Economics

- ECON 3310 - Ecological Economics
- ECON 3610 - Work and Pay
- ECON 3770 - Economic Development
- HRMG 4850 - Directed Research Projects in Human Resources and Management - the major project in this course must be related to sustainable development.

Electives

Complete 10-11 additional credit hours, either from the remaining courses given above, or from those listed below (to meet total and upper-division requirements for the minor). At least one elective course must come from the area not used toward the core requirement.

Environment

- CHEM 1112 - Environmental Science Laboratory
- CHEM 4521 - Environmental Chemistry
- GES 1000 - Environmental Systems: Climate and Vegetation
- GES 2050 - Digital Earth
- GES 4170 - Writing Place

- GES 4340 - Soils
- GES 4410 - Resource Management and Conservation
- GES 4420 - Conservation and United States Public Lands
- GES 4450 - Analysis of Environmental Systems
- GES 4480 - Environmental Problems of Colorado
- GES 4500 - Water Resources and Water Problems
- GES 4510 - Hydrology
- GES 4650 - Restoration Geographies
- GES 4750 - Recreation, Tourism, and the Environment
- MAE 2301 - Engineering Thermodynamics I
- PES 1510 - Introduction to Energy Science II
- PES 1600 - Introductory Solar Energy **and**
- PES 1620 - Solar Energy Laboratory
- PES 2500 - Sustainable Energy Fundamentals

Equity

- ANTH 3040 - Women Around the World
- ANTH 3660 - Applied Community Studies
- GES 1500 - Introduction to Environmental Studies and Sustainability
- GES 4460 - Field Studies in Geography (Silverton)
- GES 4620 - Race, Ethnicity, and Place
- GES 4780 - Global Migration
- HIST 3950 - Environmental History: The West and the World
- PHIL 3500 - Buddhist Philosophy
- PHIL 4140 - Philosophy of Nature: Sustainability and Globalization
- PSC 4290 - International Environmental Politics
- PSC 4350 - Environmental Policies and Administration
- PSC 4540 - Land Use Law
- SOC 4220 - Sustainable Urban Development
- WEST 3150 - Power, Privilege, and Social Difference
- WEST 3250 - The Prehistory and History of Native American Cultures of the Southwest
- WEST 3400 - Advanced Theory: An Intersectional Approach
- WEST 4140 - Unnatural Disasters: Hurricane Katrina, Climate, and Our Future on a Changing Planet
- WEST 4200 - Sociology of Poverty
- WEST 4700 - Global Feminisms

Economics

- GES 1500 - Introduction to Environmental Studies and Sustainability
- ECON 3300 - Environmental Economics I
- ECON 4300 - Environmental Economics II

Required Seminar

- GES 4800 - Sustainability Seminar

ANTHROPOLOGY

FACULTY

- *Professor:* Tom Wynn
- *Associate Professors:* Minette Church, Kimbra Smith, and Linda Watts (Chair)
- *Assistant Professor:* Tara Cepon-Robins, Michelle Escasa-Dorne, and Colin Wren
- *Senior Instructors:* Roche Lindsey
- *Curator and Instructor:* Karin Larkin

PROGRAMS OF STUDY

- Anthropology Minor
- Anthropology, BA

ANTHROPOLOGY, BA

LEARNING OUTCOMES

- Critically assess arguments in Anthropology
- Demonstrate understanding of theoretical positions influencing anthropological thinking in at least two of the four sub-disciplines
- Evaluate research strategies and construct arguments in at least one of the four sub-disciplines
- Compare and contrast theoretical and methodological foundations for at least two of the four sub-disciplines
- Define and explain core concepts in four sub-disciplines

GENERAL REQUIREMENTS

The Bachelor of Arts (BA) in Anthropology requires a minimum of 36 credit hours of ANTH coursework, 16 of which must be upper-division (3000+ level). All ANTH courses must be completed with a grade of C or better.

DEPARTMENT HONORS

Department honors require a senior honors thesis. Interested students should contact any anthropology faculty member for information about this program.

COURSE REQUIREMENTS

- ANTH 1020 - Introduction to Archaeology
- ANTH 1030 - Introduction to Human Origins
- ANTH 1040 - Introduction to Cultural Anthropology
- ANTH 2800 - The Nature of Language
- ANTH 3970 - History and Theory of Anthropology
- ANTH 4980 - Senior Seminar in Anthropology

Complete at least one of the following (more from this list can be used to satisfy total credit hour requirements).

- ANTH 2220 - Experimental Anthropology
- ANTH 3000 - Quantitative Methods in Anthropology
- ANTH 3170 - Field Practicum in Native American Archaeology
- ANTH 3190 - Field Practicum in 19th/20th Century Archaeology
- ANTH 3210 - Lab Techniques in Archaeology
- ANTH 3240 - Paleolithic Archaeology
- ANTH 3500 - Ethnographic Methods and Theory
- ANTH 3630 - Field Experience in Applied Anthropology
- ANTH 3660 - Applied Community Studies

Complete 14 credit hours of ANTH elective courses to meet total and upper-division credit hour requirements.

RECOMMENDED COURSES

Anthropology students interested in pursuing a career in archaeology are urged to consider completing a minor in Geography and Environmental Studies, or at least taking the following courses offered by other departments:

- GES 1010 - Environmental Systems: Landforms and Soils
- GES 3050 - Introduction to Cartography
- GES 4310 - Principles of Geomorphology
- GES 4340 - Soils

ANTHROPOLOGY MINOR

GENERAL REQUIREMENTS

The Anthropology minor requires a minimum of 18 credit hours of ANTH coursework, 9 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Complete three of the following.

- ANTH 1020 - Introduction to Archaeology
- ANTH 1030 - Introduction to Human Origins
- ANTH 1040 - Introduction to Cultural Anthropology
- ANTH 2800 - The Nature of Language

Complete 9 credit hours of upper-division ANTH elective courses.

ART HISTORY

FACULTY

- *Professor:* Suzanne MacAulay (Chair, VAPA)
- *Visiting Assistant Professor:* Lauren Kinnee (Director, Art History)

PROGRAMS OF STUDY

- Art History Minor
- Visual and Performing Arts, BA

ART HISTORY MINOR

GENERAL REQUIREMENTS

- 18 credit hours of AH coursework, 12 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- AH 1500 - Art and Ideas: Michelangelo to Basquiat
- Complete 12 credit hours of AH electives, 9 of which must be upper-division (3000+ level).
- AH 4980 - Senior Seminar in Art History

BIOLOGY

FACULTY

- *Professor Emeritus:* Douglas Swartzendruber
- *Associate Professors:* Jeremy Bono, Sandy Berry-Lowe, Jeff Broker, Lisa Hines, Jon Pigage, Andrew Subudhi (Chair), and Tom Wolkow
- *Assistant Professors:* Robert Jacob, Meghan Lybecker, Emily Mooney, Eugenia Olesnicky-Killian, and James Pearson
- *Senior Instructors:* Susan Epperson and Nicole Huber
- *Instructors:* James Adrian, Sabine Allenspach, Cheryl Doughty, Lisa Durrenberger, Jennifer Guess, Dan Lykins, and Hollis Howery

PROGRAMS OF STUDY

- Biology Minor
- Biology, BS
- Biology, BA
- Biology, MSc

BIOLOGY HONORS

The Department of Biology offers a program for honors in biology to outstanding junior and senior students at UCCS. Individuals wishing to take advantage of this program should contact the department chair at the beginning of their junior year.

Qualifications for admissions to the honors program consist of a 3.0 overall GPA and 3.5 Biology GPA. The honors applicant must register for BIOL 9490 Senior Honors Thesis to be eligible for the honors program. The course involves four phases: 1) A proposal must be submitted including a statement of the research goal, materials and methods, review of pertinent literature, and anticipated results. The proposal will be reviewed for acceptability. 2) Research must be carried out. 3) The thesis as a write-up of research should be in the form of a scholarly

publication and will be reviewed for acceptability. 4) A seminar on the research must be presented to faculty and students in biology. It is strongly suggested that students initiate their work at the start of the last semester of their junior year. Through the recommendation of the faculty of the Department of Biology, the successful honor student's degree diploma will bear the citation "with distinction, or high distinction or highest distinction in Biology." Interested students should consult with a faculty advisor or the department chair for more information regarding the Honors Program.

BIOLOGY, BA

A BA degree is offered for the following options:

- Biology, BA Elementary Education Option
- Biology, BA Special Education Option
- Biology, BA Secondary Education Option

Students should consult the College of Education and an advisor if interested in completing one of these options.

BIOLOGY, BA ELEMENTARY/SPECIAL EDUCATION COURSE REQUIREMENTS

The Biology, BA Elementary Education and Special Education Options each require 31 credit hours of biology coursework, 16 of which must be upper-division. All biology courses must be completed with a grade of C- or better.

For Education course requirements, see the College of Education.

- BIOL 1050 - Personal Nutrition
- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- BIOL 3020 - Cell Biology
- BIOL 3700 - General Ecology
- BIOL 3830 - Genetics
- BIOL 4250 - Evolution
- Complete 4 credit hours of upper division biology electives.

BIOLOGY, BA SECONDARY EDUCATION COURSE REQUIREMENTS

The Biology, BA Secondary Education Option requires 33 credit hours of biology coursework, 16 of which must be upper-division. All biology courses must be completed with a grade of C- or better.

Auxiliary requirements must be completed in addition to the required biology courses.

For Education course requirements, see the College of Education.

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell

- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- BIOL 3000 - Biostatistics
- BIOL 3020 - Cell Biology
- BIOL 3700 - General Ecology
- BIOL 3830 - Genetics
- BIOL 4250 - Evolution
- Complete 6 credit hours of upper division biology electives.

Auxiliary Requirements

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3001 - Organic Chemistry
- CHEM 3002 - Organic Chemistry Laboratory
- MATH 1330 - Calculus for Life Sciences
- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based

BIOLOGY, BS

Biology majors survey the origins, maintenance, and conservation of biological diversity, as well as the molecular, genetic, and cellular basis of life. Students have the opportunity to learn about a wide range of topics, which include the complex interactions that exist among organisms and their environments, as well as the biological processes that underlie molecular and organismic evolution, cellular function, embryonic development, nutrition, exercise science, biomechanics, and health.

Biology, BS majors pursue one of the following degrees:

1. BS Biology Degree

The Biology Degree program is designed for students seeking a broad understanding of biologically related processes. Students choose from a set of diverse electives spanning the breadth of biological disciplines, including courses in physiology, genetics, cell and molecular biology, ecology, and evolution. This degree prepares students for entry into graduate programs, and careers in biotechnology, research, policy, education, and health-related professions.

2. BS Biology Degree with a Biomedical Sciences Option

The Biomedical Sciences Option is designed specifically for students seeking a curriculum with emphasis on the biology of human health and disease. In this option, students choose among an extensive set of electives, including human anatomy, physiology, nutrition and epidemiology. This option prepares students for health-related professions and graduate programs. It is recommended that students seeking the Biomedical Science Option declare so to an advisor by the end of their freshman year.

LEARNING OUTCOMES, BIOLOGY, BS AND BIOLOGY, BS WITH BIOMEDICAL SCIENCES OPTION

- Students should be able to apply the scientific method: formulate a testable hypothesis, design and conduct scientific investigation, and interpret study findings.

- Students should understand the fundamental processes of cells that are interwoven within one large biochemical network.
- Students should be able to: 1) Explain from a biochemical perspective how genetic information is stored, expressed and inherited, and 2) Explain the inheritance patterns of traits, and what factors influence the prevalence of traits.
- Students should be able to identify the major classes of macromolecules, to recognize the principal biosynthetic and energy pathways of living organisms, and to understand the connections between biological systems and the molecular structures of their constituent parts.
- Students should be able to identify evidence to support common descent of all living organisms, to understand the factors that contribute to and the consequences of evolutionary change, and to apply "evolutionary thinking" to explain biological phenomena. (This learning outcome is not an expectation for students in the Biomedical Sciences Option.)

GENERAL REQUIREMENTS

Credit Hours
The biology major requires 30 credit hours of coursework in biology, 16 of which must be upper division (3000+ level).

Grades
All required major courses must be completed with a grade of C- or better.

Independent Study/Externships
A maximum of 8 credit hours taken in the following may count toward the major.

- BIOL 9400 - Independent Study in Biology
- BIOL 4710 - Externship in Biology

All upper-division courses should be taken after General Biology, General Chemistry, Organic Chemistry and General Physics. FAILURE TO TAKE COURSES IN THE RECOMMENDED SEQUENCE WILL RESULT IN FUTURE SCHEDULING CONFLICTS.

BS BIOLOGY DEGREE - COURSE REQUIREMENTS

Biology (21 Credit Hours)

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 3000 - Biostatistics
- BIOL 3020 - Cell Biology
- BIOL 3700 - General Ecology
- BIOL 3830 - Genetics
- BIOL 4010 - Seminar in Biology
- BIOL 4250 - Evolution

Chemistry (20 Credit Hours)

- CHEM 1401 - General Chemistry I

- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II

Math (4 Credit Hours)

- MATH 1330 - Calculus for Life Sciences **or**
- MATH 1350 - Calculus I

Physics (10 Credit Hours of Algebra-Based or Calculus-Based)

- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based
- PES 1110 - General Physics I - Calculus Based (must take MATH 1350 Calculus I)
- PES 1160 - Advanced Physics Lab I
- PES 1120 - General Physics II (must take MATH 1360 Calculus II)
- PES 2160 - Advanced Physics Lab II

Physiology (3-8 Credit Hours)

Complete 1 of the following (or one pair, if taking Anatomy and Physiology) courses.

- BIOL 2010 Human Anatomy and Physiology I **and** BIOL 2020 Human Anatomy and Physiology II
- BIOL 3220 - Animal Physiology
- BIOL 3230 - Plant Physiology (if used as both a plant and physiology course, students must apply an additional 3 credit hours toward open biology electives)
- BIOL 4360 - Human Physiology

Cellular and Molecular Biology (5-6 Credit Hours)

Complete two of the following.

- BIOL 3100 - Microbiology: Bacteriology/Mycology
- BIOL 3610 - Developmental Biology
- BIOL 3620 - Histology
- BIOL 3840 - Genetics Laboratory
- BIOL 3910 - Immunology
- BIOL 4200 - Developmental Neurobiology
- BIOL 4610 - Methods in Evolutionary Genetics (can only count toward requirements in either Cellular and Molecular or Evolution and Ecology: not both)
- BIOL 4670 - Applied Molecular Genetics
- BIOL 4840 - Molecular Biology

Evolution and Ecology (2-4 Credit Hours)

Complete one of the following.

- BIOL 3750 - Conservation Biology
- BIOL 4280 - Mammalogy

- BIOL 4420 - Behavioral Ecology
- BIOL 4430 - Animal Ecology (summer only)
- BIOL 4440 - Winter Ecology
- BIOL 4610 - Methods in Evolutionary Genetics (can only count toward requirements in either Cellular and Molecular or Evolution and Ecology: not both)

Plant Biology (3 Credit Hours)

Complete one of the following.

- BIOL 2500 - Plant Biology
- BIOL 3230 - Plant Physiology (if used as both a plant and physiology course, students must apply an additional 3 credit hours toward open biology electives)
- BIOL 4150 - Field Botany

Biology Electives 2000+ level (9 Credit Hours)

May include the following:

- CHEM 4211 - Biochemistry **or**
- CHEM 4221 - Biochemistry I **and**
- CHEM 4231 - Biochemistry II

General Electives (can be Biology) (3 Credit Hours)

Complete additional credit hours to make total degree and upper-division hours.

Upper-Division Laboratory Course

At least one course for the Physiology, Cellular and Molecular, Evolution and Ecology, Plant Biology, or Biology electives must be from the following list of lab courses.

- BIOL 3110 - Bacteriology/Mycology Laboratory
- BIOL 3620 - Histology
- BIOL 3750 - Conservation Biology
- BIOL 3840 - Genetics Laboratory
- BIOL 4150 - Field Botany
- BIOL 4280 - Mammalogy
- BIOL 4430 - Animal Ecology
- BIOL 4610 - Methods in Evolutionary Genetics
- BIOL 4930 - Research Practicum in Biology

BS BIOLOGY DEGREE WITH BIOMEDICAL SCIENCES OPTION - COURSE REQUIREMENTS

Biology (26 Credit Hours)

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 3000 - Biostatistics
- BIOL 3020 - Cell Biology
- BIOL 3830 - Genetics
- BIOL 4010 - Seminar in Biology
- BIOL 4350 - Human Anatomy

- BIOL 4360 - Human Physiology

Chemistry (23 Credit Hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II
- CHEM 4211 - Biochemistry **or**
- CHEM 4221 - Biochemistry I

Physics (10 Credit Hours of Algebra-Based or Calculus-Based)

- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based
- PES 1110 - General Physics I - Calculus Based (must take MATH 1350 Calculus I)
- PES 1160 - Advanced Physics Lab I
- PES 1120 - General Physics II (must take MATH 1360 Calculus II)
- PES 2160 - Advanced Physics Lab II

Math (4 Credit Hours)

- MATH 1330 - Calculus for Life Sciences **or**
- MATH 1350 - Calculus I

Restricted Elective Courses (12 Credit Hours)

- BIOL 2050 - Nutrition for Health Sciences
- BIOL 3100 - Microbiology: Bacteriology/Mycology
- BIOL 3110 - Bacteriology/Mycology Laboratory
- BIOL 3140 - Microbiology: Virology
- BIOL 3150 - Virology Laboratory
- BIOL 3300 - Exercise Physiology
- BIOL 3620 - Histology
- BIOL 3910 - Immunology
- BIOL 4200 - Developmental Neurobiology
- BIOL 4220 - Epidemiology
- BIOL 4300 - Advanced Nutrition
- BIOL 4350 - Human Anatomy
- BIOL 4360 - Human Physiology
- BIOL 4370 - Cardiovascular Physiology
- BIOL 4550 - Biomechanics/Kinesiology
- BIOL 4600 - Biomechanics of Musculoskeletal Injury
- BIOL 4770 - Human Metabolism

- BIOL 4790 - Laboratory Methods in Human Physiology
- CHEM 4231 - Biochemistry II
- HSCI 4820 - Nutrition, Exercise, and Health in Women

General Electives - can be from Restricted Elective Courses list above, if not already counted (9-12 Credit Hours)
Complete additional courses to meet total and upper-division requirements for your degree program.

BIOLOGY, MSC

The department of Biology is part of an interdisciplinary Letters, Arts, and Sciences Master of Sciences Degree Program (MSc).

For applications and initial advising, contact Dr. Sandra Berry-Lowe: sberrylo@uccs.edu; (719) 255-7552.

Visit the Graduate School webpage at www.uccs.edu/~gradschl/ for specific information.

BIOLOGY MINOR

The Biology minor provides students an opportunity to study the science of biology and apply it to various majors outside the biological world. The Biology minor will help prepare students for employment and volunteer opportunities in a growing number of areas including anthropology, psychology, chemistry, biotechnology and the health sciences.

GENERAL REQUIREMENTS

The minor requires the following 26 credit hours of biology coursework. All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 3000 - Biostatistics
- BIOL 3020 - Cell Biology
- BIOL 3700 - General Ecology
- BIOL 3830 - Genetics
- BIOL 4250 - Evolution
- BIOL 4840 - Molecular Biology **or**
- CHEM 4211 - Biochemistry

CHEMISTRY AND BIOCHEMISTRY

FACULTY

- *Professors:* Ron Ruminski and Al Schoffstall

- *Professor Emeriti:* Jim Eberhart
- *Associate Professors:* Dave Anderson (Chair), Janel Owens, and David Weiss (Associate Chair)
- *Assistant Professors:* Jarred Bultema, Renee Henry, and Kevin Tvrdy
- *Visiting Assistant Professor:* Megan Bultema
- *Professor Attendant:* Jerry Phillips
- *Professors Adjoint:* Terry Clayton, Al Hagedorn, Michael Hiskey, Werner Jenkins, Gordon Kresheck, and Jimmy Stewart
- *Senior Instructors:* Cindy Applegate and Wendy Haggren
- *Instructors:* Carlos Diaz, Kristi Follett, Terry Geiger, Brett Mayer, Tisha Mendiola Jessop, Keith
- Oppenheim, Sam Vivian, and Laura Zimmerman
- *Instructors Emeriti:* Chet Dymek and Mary Bethé Neely

PROGRAM DESCRIPTION

The Department of Chemistry and Biochemistry offers programs that meet the needs of students wishing to obtain an undergraduate degree in chemistry or biochemistry.

- Minor in Chemistry
- Minor in Biochemistry
- BS in Chemistry (American Chemical Society certified)
- BS in Biochemistry
- BA in Chemistry
    - General option
    - Secondary education option
- BA in Biochemistry
    - General option
    - Pre-med option
    - Secondary education option

The programs leading to Bachelor of Science degrees are intended for students who plan to choose chemistry or biochemistry as a profession, or for students wishing to pursue graduate work in those fields. The B.S. in Chemistry degree is one of some 600 in the United States that is certified by the ACS.

Students desiring a less comprehensive program in chemistry or biochemistry, such as premedical students, should elect a Bachelor of Arts degree. Judicious selection of additional courses permits the BA major to satisfy prerequisites for admission to graduate study in chemistry, biochemistry, or related fields.

The secondary education options are for students wishing to teach chemistry in high school. Please contact the College of Education for further information concerning the education requirements for these options.

In addition to its undergraduate degrees, the department also offers programs leading to the degree of Master of Sciences (MSc) in Chemistry, as well as accelerated BA/MSc and BS/MSc programs.

Several chemistry courses are offered as a service to students majoring in other science fields and in social sciences and arts and humanities fields. The following courses, all of which have an optional lab component, are offered for non-science majors:

- CHEM 1101 - Chemistry in the Modern World
- CHEM 1111 - Environmental Science
- CHEM 1121 - CSI: Forensic Chemistry

NOT ALL CHEMISTRY COURSES ARE OFFERED EVERY YEAR. CHECK THE COURSE SEARCH IN YOUR MYUCCS PORTAL FOR OFFERINGS AVAILABLE EACH SEMESTER.

LEARNING OUTCOMES

- Acquire knowledge in the areas of biology, mathematics, physics, and technology to enable the student to manipulate experimental data and facilitate the understanding and derivation of fundamental relationships.
- Learn principles and applications of general, organic, analytical, physical, biochemical, and inorganic areas of chemistry, and an integrated overview of chemistry.
- Be able to compete effectively for a position in the workplace as a professional chemist or biochemist, for admission to graduate or professional schools, or for careers in other fields.
- Be able to communicate effectively about topics of importance to chemists and biochemists.
- For those students who take service courses in chemistry, to achieve the course objectives and fulfill the chemically related goals and requirements of their majors.
- Chemistry and biochemistry majors meet with an advisor in the department to plan out their learning experiences.

ADVISING

Chemistry and biochemistry majors should consult regularly with their academic advisor and with departmental faculty advisors, and in particular with the department chair. Academic advising is a very important aspect of one's education. Students need to plan their courses carefully since there are numerous and specific prerequisites for advanced courses that must be completed in an orderly sequence during the freshman through junior years. In addition, College of Letters, Arts, and Sciences requirements in the humanities and social sciences and Compass Curriculum requirements must be worked into the schedule. IF STUDENTS ARE NOT ABLE TO FOLLOW THE CURRICULA OUTLINED IN THE FOUR-YEAR PLANS FOR OUR DEGREE PROGRAMS, THE POSSIBILITY FOR SCHEDULING CONFLICTS INCREASES, AND THE LIKELIHOOD OF FINISHING IN FOUR YEARS DECREASES. Decisions on application to medical, dental, and graduate schools and on employment are also critical. Students should consult faculty advisors when making these decisions.

ADDITIONAL DEPARTMENTAL RULES

Preparatory Chemistry
Students who have not taken chemistry in high school should take CHEM 1001 - Preparatory Chemistry prior to attempting the General Chemistry sequence (CHEM 1401/1411).

Exams
As part of the Department's assessment protocol, students in many chemistry courses will be tested using standardized ACS subject exams.

Grade Requirements
Chemistry and biochemistry majors must achieve grades of C or better in all chemistry courses required for the major, and in all required auxiliary (biology, physics, math, etc.) courses.

Laboratory Fee
There is a $75 fee for each laboratory course. Research courses (CHEM 4904/5904) are considered to be lab courses; lab fees are charged for these courses.

CHEMISTRY ELECTIVES

For chemistry and biochemistry majors, chemistry electives must be chosen from 4000-level chemistry courses.

HONORS PROGRAM

Opportunity is provided for qualified chemistry and biochemistry majors to participate in the Departmental Honors Program and graduate with distinction, high distinction, or highest distinction. Students interested in this program should contact the department chair during their junior year. To be eligible, a student must meet the following requirements:

- Be a chemistry or biochemistry major with a major grade point average of at least 3.4.
- Complete upper division research in chemistry or biochemistry. At least two semesters of CHEM 4904 - Research: Upper Division with a single advisor and completion of CHEM 4911 - Chemistry Capstone or CHEM 4921 - Biochemistry Capstone satisfy this requirement.
- Submit a written Senior Thesis and make an oral presentation based on this research (normally as part of CHEM 4911 or 4921). The written report will be due ten days before the presentation. One copy is to be submitted to your advisor and one copy to the department chair.

UNDERGRADUATE RESEARCH

All chemistry and biochemistry majors, and BS majors in particular, should consider electing CHEM 2904 - Research: Lower Division or CHEM 4904 - Research: Upper Division at least once during their UCCS careers. Research provides a different kind of experience than traditional laboratory courses. Participants must do sufficient planning to carry out experiments. Regular communication with your research supervisor is a necessary component of the research experience.

BIOCHEMISTRY, BA

The BA in Biochemistry program is suitable for students wishing to complete a major in biochemistry that requires fewer credit hours in chemistry than does the biochemistry BS degree.

There are three biochemistry options within the BA in Biochemistry: general, pre-med, and secondary education. Recommended year-by-year curricula for each option follow.

BIOCHEMISTRY BA, GENERAL OPTION: FOUR-YEAR CURRICULUM

The BA in Biochemistry with the general option is designed for students who wish to major in biochemistry, but is limited to fewer credit hours in chemistry than the BS in Biochemistry. Students may be interested in a more general degree or may be pre-professional students who will elect significant coursework from another department. BA students may go on to graduate school in the biochemical sciences by taking additional courses in biochemistry or related disciplines.

The BA in Biochemistry general option requires a minimum of 52 credit hours in chemistry. No more than 54 hours in chemistry may be counted toward the 120 credit hours required for graduation.

Students are required to select 10 credit hours of upper-division electives in chemistry. Up to 7 credit hours may be CHEM 4904 - Research: Upper Division or CHEM 4905 - Internship.

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- MATH 1330 - Calculus for Life Sciences

15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- BIOL 1350 - General Biology: Introduction to the Cell
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- Elective or area requirement - 3 credit hours

14 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- Electives or area requirements - 6 credit hours

16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- Electives or area requirements - 6 credit hours

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4221 - Biochemistry I
- Electives or area requirements - 9 credit hours

16 Credit Hours

Junior Year, Spring Semester

- CHEM 4222 - Biochemistry Laboratory
- CHEM 4231 - Biochemistry II
- CHEM 4241 - Biochemistry of the Gene

- Electives or area requirements - 6 credit hours

  15 Credit Hours

Senior Year, Fall Semester

- CHEM 4701 - Biophysical Chemistry
- CHEM 4921 - Biochemistry Capstone
- Electives or area requirements - 9 credit hours

  15 Credit Hours

Senior Year, Spring Semester

- Electives or area requirements - 13 credit hours

Total Credit Hours: 120

BIOCHEMISTRY BA, PRE-MED OPTION: FOUR-YEAR CURRICULUM

Admission to medical school is a difficult and highly competitive process. Additionally, medical schools are looking for candidates who not only excel academically, but who also demonstrate high-level interpersonal skills and have a good grasp of current issues in science and medicine. The BA in Biochemistry pre-med option has been designed specifically and carefully for students who are interested in a career in medicine. This option satisfies the latest course requirements of most medical schools, provides the breadth of classes needed to prepare students for the MCAT, and allows candidates to develop strengths in critical thinking and communication that lead to success. This option is also appropriate for students interested in other health-related careers.

Students who wish to work as biochemists or to pursue graduate studies in biochemistry should elect the BS in Biochemistry rather than the pre-med option.

The BA in Biochemistry pre-med option requires a minimum of 52 credit hours in chemistry. No more than 54 hours in chemistry may be counted toward the 120 credit hours required for graduation.

Students are required to select 4 credit hours of upper-division electives in chemistry. Up to 4 credit hours may be CHEM 4904 - Research: Upper Division or CHEM 4905 - Internship.

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar

  15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1330 - Calculus for Life Sciences

16 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- PSY 1000 - General Psychology
- Elective or area requirement - 3 credit hours

16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- ENGL 1500 - Introduction to Literature for Non-Majors
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- Elective or area requirement - 3 credit hours

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4221 - Biochemistry I
- CHEM 4701 - Biophysical Chemistry
- SOC 1110 - Introduction to Sociology

14 Credit Hours

Junior Year, Spring Semester

- CHEM 4201 - Current Perspectives in Science and Medicine
- CHEM 4222 - Biochemistry Laboratory
- CHEM 4231 - Biochemistry II
- CHEM 4241 - Biochemistry of the Gene
- Elective or area requirement - 3 credit hours

15 Credit Hours

Senior Year, Fall Semester

- CHEM 4921 - Biochemistry Capstone
- PHIL 3130 - Ethics of Life and Health **or**
- PHIL 3160 - Philosophical Issues in Death and Dying
- Electives or area requirements - 9 credit hours

15 Credit Hours

Senior Year, Spring Semester

- CHEM 4251 - Biochemistry of Membranes: Structure and Function
- Electives or area requirements - 10 credit hours

13 Credit Hours

Total Credit Hours: 120

BIOCHEMISTRY BA, SECONDARY EDUCATION OPTION: FOUR-YEAR CURRICULUM

The BA in Biochemistry with the secondary education option is designed for students wishing to be high school chemistry teachers. This program has very specific requirements and little room for elective courses that will not count towards graduation. IT IS IMPORTANT TO CONSULT WITH ADVISORS FROM THE DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY AND THE COLLEGE OF EDUCATION.

Students who wish to work as biochemists or to pursue graduate studies in biochemistry should elect the BS Biochemistry rather than the secondary education option.

The BA in Biochemistry secondary education option requires a minimum of 34 credit hours in chemistry. No more than 54 hours in chemistry may be counted toward the hours required for graduation.

Students are required to select 3 credit hours of upper-division elective in chemistry.

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- UTED 1010 - Step I: Inquiry Approaches to Teaching
- Elective or area requirement - 3 credit hours

15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1330 - Calculus for Life Sciences
- PHIL 1000 - Introduction to Philosophy **or**
- PHIL 1020 - Introduction to Ethics **or**
- PHIL 1120 - Critical Thinking
- UTED 1020 - Step II: Inquiry-Based Lesson Design

16 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- UTED 2010 - Knowing and Learning in Mathematics and Science
- Elective or area requirement - 3 credit hours

16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *

- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- PSY 1000 - General Psychology
- UTED 3020 - Classroom Interactions

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- PES 1050 - General Astronomy I **or**
- PES 1060 - General Astronomy II
- UTLS 3040 - Science Research Methods
- Electives or area requirements - 6 credit hours

16 Credit Hours

Junior Year, Spring Semester

- CHEM 4901 - Topics in Chemistry and Biochemistry *
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- GEOL 1010 - Physical Geology
- UTED 4710 - Project-Based Instruction
- UTLS 3030 - Perspectives on Science and Math

15 Credit Hours

*SECONDARY EDUCATION OPTION STUDENTS, WHEN REGISTERING FOR CHEM 4901 INTRODUCTION TO LAB TEACHING, MUST CONTACT THE CHEMISTRY AND BIOCHEMISTRY DEPARTMENT CHAIR IN THE SEMESTER PRIOR TO THAT IN WHICH THEY INTEND TO TEACH, IN ORDER TO DETERMINE AN APPROPRIATE LABORATORY TO TEACH.

Senior Year, Fall Semester

- CHEM 4211 - Biochemistry
- CHEM 4701 - Biophysical Chemistry
- UTED 4720 - Reading in the Content Area
- Electives or area requirements - 6 credit hours

15 Credit Hours

Senior Year, Spring Semester

- UTED 4730 - Apprentice Teaching UCCS Teach and Seminar
- UTED 4731 - Apprentice Teaching Seminar UCCS Teach
- Elective or area requirement - 3 credit hours

15 Credit Hours

Total Credit Hours: 124

CHEMISTRY, BA

This degree program is suitable for students wishing a major in chemistry that requires fewer credit hours in chemistry, physics, and mathematics than the BS degree. BA majors may be students interested in a more general degree, pre-professional students, students having an interest in both chemistry and some other discipline, students who switch over to a chemistry major during their third or fourth year of college, or students who are unsure of their goals early in their college experience. Many BA students choose to go on to graduate school in chemistry and prepare themselves by taking sufficient courses in chemistry and related disciplines in order to qualify for acceptance.

There are two chemistry degree options within the BA: the general option and the secondary education option. Recommended year-by-year curricula for each option follow.

LEARNING OUTCOMES

- Have knowledge of organic, analytical, physical and inorganic areas of chemistry and biochemistry, and an integrated overview of chemistry
- Have knowledge of additional areas of mathematics, physics, and technology and be able to manipulate experimental data and understand the derivation of fundamental relationships
- Be able to communicate effectively about the field of chemistry

CHEMISTRY BA, GENERAL OPTION: FOUR-YEAR CURRICULUM

The BA in Chemistry with the general option is designed for students who wish to major in chemistry, but is limited to fewer credit hours in chemistry, physics, and mathematics than the BS in Chemistry. Students may be interested in a more general degree or may be pre-professional students who will elect significant coursework from another department. BA students may go on to graduate school in the chemical sciences by taking additional courses in chemistry or related disciplines.

The BA in Chemistry general option requires a minimum of 51 credit hours in chemistry. No more than 54 credit hours in chemistry may be counted in the 120 credit hours required for the degree.

Students are required to select 5 credit hours of upper-division electives in chemistry. Up to 5 credit hours may be CHEM 4904 - Research: Upper Division or CHEM 4905 - Internship.

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- MATH 1350 - Calculus I

  15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1360 - Calculus II

- Elective or area requirement - 3 credit hours

  15 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- Electives or area requirements - 6 credit hours

  16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- Electives or area requirements - 6 credit hours

  16 Credit Hours

  * Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy
- CHEM 4102 - Experimental Physical Chemistry: Quantum Mechanics and Spectroscopy
- CHEM 4211 - Biochemistry
- Elective or area requirement - 3 credit hours

  14 Credit Hours

Junior Year, Spring Semester*

- CHEM 4011 - Instrumental Analysis
- CHEM 4012 - Instrumental Analysis Laboratory
- CHEM 4111 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4112 - Experimental Physical Chemistry: Thermodynamics and Kinetics
- Electives or area requirements - 6 credit hours

  15 Credit Hours

  * Students may elect to take either CHEM 4011/4012 or CHEM 4111/4112 in the spring semester of their senior year.

Senior Year, Fall Semester

- CHEM 4301 - Inorganic Chemistry I
- CHEM 4911 - Chemistry Capstone
- Electives or area requirements - 9 credit hours

  15 Credit Hours

Senior Year, Spring Semester

- Electives or area requirements - 14 credit hours

  14 Credit Hours

Total Credit Hours: 120

CHEMISTRY BA, SECONDARY EDUCATION OPTION: FOUR-YEAR CURRICULUM

The BA in chemistry secondary education option is designed for students wishing to be high school chemistry teachers. This program has very specific requirements and little room for elective courses that will count towards graduation. IT IS IMPORTANT TO CONSULT WITH ADVISORS FROM THE DEPARTMENT OF CHEMISTRY AND BIO-CHEMISTRY AND THE COLLEGE OF EDUCATION.

Students who wish to work as chemists or to pursue graduate studies in chemistry should elect one of the other program options (either BS or BA) in chemistry rather than the Secondary Education option.

The BA in Chemistry secondary education option requires a minimum of 34 credit hours in chemistry. No more than 54 credit hours in chemistry may be counted in the hours required for the degree.

Students are required to select 3 credit hours of upper-division electives in chemistry.

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- UTED 1010 - Step I: Inquiry Approaches to Teaching
- Elective or area requirement - 3 credit hours

15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1330 - Calculus for Life Sciences
- PHIL 1000 - Introduction to Philosophy **or**
- PHIL 1020 - Introduction to Ethics **or**
- PHIL 1120 - Critical Thinking
- UTED 1020 - Step II: Inquiry-Based Lesson Design

16 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- UTED 2010 - Knowing and Learning in Mathematics and Science
- Elective or area requirement - 3 credit hours

16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II

- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- PSY 1000 - General Psychology
- UTED 3020 - Classroom Interactions

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- PES 1050 - General Astronomy I **or**
- PES 1060 - General Astronomy II
- UTLS 3040 - Science Research Methods
- Electives or area requirements - 6 credit hours

16 Credit Hours

Junior Year, Spring Semester

- CHEM 4901 - Topics in Chemistry and Biochemistry *
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- GEOL 1010 - Physical Geology
- UTED 4710 - Project-Based Instruction
- UTLS 3030 - Perspectives on Science and Math

15 Credit Hours

*SECONDARY EDUCATION OPTION STUDENTS, WHEN REGISTERING FOR CHEM 4901 INTRODUCTION TO LAB TEACHING, MUST CONTACT THE CHEMISTRY AND BIOCHEMISTRY DEPARTMENT CHAIR IN THE SEMESTER PRIOR TO THAT IN WHICH THEY INTEND TO TEACH, IN ORDER TO DETERMINE AN APPROPRIATE LABORATORY TO TEACH.

Senior Year, Fall Semester

- CHEM 4211 - Biochemistry
- CHEM 4701 - Biophysical Chemistry
- UTED 4720 - Reading in the Content Area
- Electives or area requirements - 6 credit hours

15 Credit Hours

Senior Year, Spring Semester

- UTED 4730 - Apprentice Teaching UCCS Teach and Seminar
- Elective or area requirement - 3 credit hours

15 Credit Hours

Total Credit Hours: 124

CHEMISTRY, BI™

The Bachelor of Innovation™ in Chemistry combines academic studies and professional training to prepare students for variety of careers in chemical sciences. The degree is structured so that students gain a depth of

understanding in chemistry and a breadth of humanities, other sciences, business and entrepreneurship. The major is composed of a Chemistry Core, Mathematics and Science Core, LAS General Education courses, Innovation Core, Cross-Discipline Core. The Innovation Core introduces students to entrepreneurship, grant and proposal writing, and team projects with regional organizations. These team projects align with Chemistry's professional practice focus. The Cross-Discipline Core concentrations are business, engineering technology, and globalization; students choose one.

The degree will provide students with both the technical background and skills of a classical Bachelor of Science in Chemistry plus the team skills to work on innovative projects including the ability to: (1) recognize the broader issues in engineering technology-related problems or in global innovation problems; (2) understand the business, legal and societal constraints affecting this technology; and (3) have the ability to communicate the key issues, needs, potential options, and final solution to a challenge. The program should provide the technical knowledge and skill necessary to function in the chemistry field and the team-building and team-leading skills to develop a career and drive the chosen field forward.

GENERAL REQUIREMENTS

- 120 total credit hours.
- 36 credit hours of CHEM coursework, at least 16 of which must be upper-division (3000+ level). All CHEM courses must be completed with a grade of C or better.
- 24 credit hours of Innovation Core coursework.
- 15 credit hours of Cross-Discipline Core coursework.
- All auxiliary requirements must be completed in addition to the required major courses.

COURSE REQUIREMENTS - 120 TOTAL CREDIT HOURS

Chemistry Core - 36 Credit Hours

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- CHEM 3201 - Organic Chemistry for Majors I
- CHEM 3203 - Organic Chemistry Lab for Majors I
- CHEM 3211 - Organic Chemistry for Majors II
- CHEM 3213 - Organic Chemistry Laboratory for Majors II

  Note: B.I. majors who have earned credit hours for CHEM 3101/3102 and 3111/3112 must take CHEM 3213 and an upper division organic chemistry elective.

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4211 - Biochemistry
- CHEM 4701 - Biophysical Chemistry
- CHEM 4911 - Chemistry Capstone

Auxiliary Requirements - 12 Credit Hours

- BIOL 1350 - General Biology: Introduction to the Cell
- MATH 1330 - Calculus for Life Sciences
- PES 1110 - General Physics I - Calculus Based

- PES 1160 - Advanced Physics Lab I

General Education Requirements - 33 Credit Hours

- Humanities and Social Science LAS Area Requirements - 24 credit hours
- General Elective - 3 credit hours
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar

Innovation Core - 24 Credit Hours

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Discipline Core - 15 Credit Hours

Complete 15 credit hours in **one** concentration. See the BI website for specific courses: http://innovation.uccs.edu/cross-diciplinary-core/

- Business
- Engineering Technology
- Globalization

BI IN CHEMISTRY: FOUR-YEAR PLAN

Freshman Year

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENTP 1000 - Introduction to Entrepreneurship
- GPS 1010 - Gateway Program Seminar
- INOV 1010 - The Innovation Process
- MATH 1330 - Calculus for Life Sciences
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I

Total Freshman year: 31 Credit Hours

Sophomore Year

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

- BIOL 1350 - General Biology: Introduction to the Cell
- BLAW 2010 - Business and Intellectual Property Law
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- Cross-Disciplinary Core Course (3 credit hours)
- General Elective (3 credit hours)

Total Sophomore year: 28 Credit Hours

Junior Year

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4211 - Biochemistry
- HUM 3990 - Special Topics in Humanities
- INOV 3010 - Innovation Team: Research and Execute
- Cross-Disciplinary Core Courses (6 credit hours)
- Humanities Elective (3 credit hours)
- Social Science Electives (6 credit hours)
- General Elective (3 credit hours)

Total Junior year: 31 Credit Hours

Senior Year

- CHEM 4701 - Biophysical Chemistry
- CHEM 4911 - Chemistry Capstone
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 4010 - Innovation Team: Design and Lead
- Cross-Disciplinary Core Courses (6 credit hours)
- Upper Division Chemistry Elective (3 credit hours)
- Upper Division Humanities Elective (3 credit hours)
- Social Science Elective (3 credit hours)
- General Elective (3 credit hours)

Total Senior year: 30 Credit Hours

BIOCHEMISTRY, BS

The BS in Biochemistry is designed for students wishing to pursue careers as professional biochemists or attend graduate school in biochemistry. The BS degree requires a minimum of 58 credit hours in chemistry. No more than 60 credit hours in chemistry may be counted in the 120 credit hours required for the degree.

Students are required to select 10 credit hours of upper-division electives in chemistry. Up to 7 credit hours may be CHEM 4904 - Research: Upper Division or CHEM 4905 - Internship.

BIOCHEMISTRY, BS: FOUR-YEAR CURRICULUM

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- MATH 1330 - Calculus for Life Sciences

15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- BIOL 1350 - General Biology: Introduction to the Cell
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- Elective or area requirement - 3 credit hours

14 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- Electives or area requirements - 6 credit hours

16 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- Electives or area requirements - 6 credit hours

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4221 - Biochemistry I
- CHEM 4701 - Biophysical Chemistry
- Electives or area requirements - 6 credit hours

16 Credit Hours

Junior Year, Spring Semester

- CHEM 4222 - Biochemistry Laboratory
- CHEM 4231 - Biochemistry II
- CHEM 4241 - Biochemistry of the Gene
- Electives or area requirements - 6 credit hours

15 Credit Hours

Senior Year, Fall Semester

- CHEM 4232 - Advanced Techniques in Biochemistry **or**

- CHEM 4502 - Bioanalytical Techniques
- CHEM 4921 - Biochemistry Capstone
- Electives or area requirements - 9 credit hours

  15 Credit Hours

Senior Year, Spring Semester

- CHEM 4251 - Biochemistry of Membranes: Structure and Function
- Electives or area requirements - 10 credit hours

  13 Credit Hours

Total Credit Hours: 120

CHEMISTRY, BS

The BS in chemistry is a professional degree program accredited by the American Chemical Society, designed to prepare the student for a career in chemistry; this includes those anticipating admission to graduate study in chemistry. The program is not intended as a preparation for the study of medicine. Premedical students who wish to major in chemistry should elect the biochemistry BA Pre-Med option.

The BS in chemistry requires more breadth and depth in chemistry, mathematics, and physics than the BA in chemistry. Students desiring a BS in chemistry are typically planning graduate studies in chemistry and/or careers as professional chemists in industry, private laboratories, and government agencies.

The program features courses from each of the main areas of chemistry: analytical, inorganic, organic, physical and biochemistry. Aspects of all these areas are introduced in general chemistry and they are then treated in detail in year-long advanced courses.

Organic chemistry features a rigorous program where synthetic, mechanistic, and spectroscopic methods are introduced. A comprehensive treatment of the principles of thermodynamics, quantum mechanics, kinetics, and spectroscopy is encompassed in the physical chemistry sequence. The principles of quantitative analysis, analytical separations, and instrumental methods are covered in analytical chemistry. The sequence in inorganic chemistry focuses on modern theories of bonding and orbital symmetry.

The BS in chemistry program requires a strong preparation in mathematics through calculus and three semesters of physics.

Students wishing to pursue graduate study in chemistry should select research projects involving laboratory work by their junior year.

LEARNING OUTCOMES

- Have knowledge of general organic, analytical, physical and inorganic areas of chemistry and biochemistry, and an integrated overview of chemistry
- Have knowledge of additional areas of biology, mathematics, physics, and technology and be able to manipulate experimental data and understand the derivation of fundamental relationships
- Be able to communicate effectively about the field of chemistry

CURRICULAR PROGRAM

The BS degree requires a minimum of 56 credit hours in chemistry. No more than 60 credit hours in chemistry may be counted in the 120 credit hours required for the degree. A suggested four-year sequence of courses is shown below.

Students are required to select 7 credit hours of upper-division electives in chemistry. Up to 7 credit hours may be CHEM 4904 - Research: Upper Division or CHEM 4905 - Internship.

CHEMISTRY BS: FOUR-YEAR CURRICULUM

Freshman Year, Fall Semester

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- GPS 1010 - Gateway Program Seminar
- MATH 1350 - Calculus I

15 Credit Hours

Freshman Year, Spring Semester

- CHEM 1511 - General Chemistry for Majors II
- CHEM 1513 - General Chemistry Laboratory for Majors II
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1360 - Calculus II
- Elective or area requirement - 3 credit hours

15 Credit Hours

Sophomore Year, Fall Semester

- CHEM 3201 - Organic Chemistry for Majors I *
- CHEM 3203 - Organic Chemistry Lab for Majors I
- MATH 2350 - Calculus III
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I

14 Credit Hours

Sophomore Year, Spring Semester

- CHEM 3211 - Organic Chemistry for Majors II *
- CHEM 3213 - Organic Chemistry Laboratory for Majors II
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II
- Electives or area requirements - 6 credit hours

16 Credit Hours

* Students who complete the CHEM 3101/3102, 3111/3112 sequence must take CHEM 3213 and an upper division organic chemistry elective.

Junior Year, Fall Semester

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy

- CHEM 4102 - Experimental Physical Chemistry: Quantum Mechanics and Spectroscopy
- CHEM 4211 - Biochemistry
- Elective or area requirement - 3 credit hours

14 Credit Hours

Junior Year, Spring Semester*

- CHEM 4011 - Instrumental Analysis
- CHEM 4012 - Instrumental Analysis Laboratory
- CHEM 4111 - Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4112 - Experimental Physical Chemistry: Thermodynamics and Kinetics
- PES 2130 - General Physics III
- Elective or area requirement - 3 credit hours

15 Credit Hours

* Students may elect to take either CHEM 4011/4012 or CHEM 4111/4112 in the spring semester of their senior year.

Senior Year, Fall Semester

- CHEM 4301 - Inorganic Chemistry I
- CHEM 4911 - Chemistry Capstone
- Electives or area requirements - 10 credit hours

16 Credit Hours

Senior Year, Spring Semester

- CHEM 4311 - Inorganic Chemistry II
- Electives or area requirements - 12 credit hours

15 Credit Hours

Total Credit Hours: 120

CHEMISTRY ACCELERATED BS/MSC OR BA/MSC

The Accelerated Bachelor's/Master's degree program in Chemistry offers highly-qualified UCCS chemistry and biochemistry majors the opportunity to pursue the Bachelor of Arts or Bachelor of Science (BA or BS) in Chemistry or Biochemistry and the Master of Sciences (MSc) in Chemistry concurrently. The main benefit of the program is that it allows students to register for up to **9 credit hours** to be used for both the BA/BS and MSc programs. The program is designed to be a five-year or five-year+ (less than six) program for currently enrolled UCCS chemistry or biochemistry majors.

Please consult with the department office for a complete program description, or contact the Master of Sciences Chemistry advisor, Dr. Allen Schoffstall.

CHEMISTRY, MSC

The Master of Sciences (MSc) Chemistry Option is a research Master's degree program offered with a thesis only option. It provides students with advanced courses in analytical, biochemistry, inorganic, organic and physical chemistry. Research areas include those above and environmental chemistry. The degree program is designed for students who desire a research degree and advanced coursework.

Prospective students must meet the entrance requirements of The Graduate School and of the Department of Chemistry.

Specifically, the applicant is expected to have a BA or BS degree with the equivalent of a chemistry major from an accredited institution, and show promise and ability to pursue advanced study and research in chemistry. Please consult with the department office for a complete program description, or contact the Master of Sciences Chemistry advisor, Dr. Allen Schoffstall.

LEARNING OUTCOMES

- An increased knowledge of the theories and concepts in two major areas of chemistry, one of which being the student's major area of emphasis
- An understanding of and the ability to apply the fundamentals of research methodology and statistical analysis to the interpretation and evaluation of scientific data
- The ability to communicate knowledge of chemistry both orally and in writing, including research reports
- Complete a research project, write a thesis based on the project and defend the project before thesis committee

BIOCHEMISTRY MINOR

A student may complete a minor in biochemistry by finishing the following coursework with grades of "C" or better. (A student pursuing a Bachelor's degree in chemistry may not obtain a minor in biochemistry.)

General Chemistry (10 credit hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II

Organic Chemistry (10 credit hours)

- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II

Biochemistry (9 credit hours)

Select three courses:

- CHEM 4211 - Biochemistry (If not taking CHEM 4221/4231)
- CHEM 4221 - Biochemistry I (If not taking CHEM 4211)
- CHEM 4222 - Biochemistry Laboratory
- CHEM 4231 - Biochemistry II (If not taking CHEM 4211)
- CHEM 4232 - Advanced Techniques in Biochemistry
- CHEM 4241 - Biochemistry of the Gene
- CHEM 4251 - Biochemistry of Membranes: Structure and Function
- CHEM 4502 - Bioanalytical Techniques
- CHEM 4701 - Biophysical Chemistry

- CHEM 4711 - Bioinorganic Chemistry
- CHEM 4721 - Biochemistry of Drugs

Note: Students pursuing a BS in Biology must select courses that are not part of their degree program requirements in order to complete a biochemistry minor. Students should familiarize themselves with the prerequisite requirements for these courses.

CHEMISTRY MINOR

A student may complete a minor in chemistry by finishing the following coursework with grades of "C" or better. (A student pursuing a Bachelor's degree in biochemistry may not obtain a minor in chemistry.)

General Chemistry (10 credit hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II

Organic Chemistry (10 credit hours)

- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II

Additional Chemistry Courses (minimum 9 credit hours)

Select a minimum of 9 credit hours:

- CHEM 4001 - Analytical Chemistry
- CHEM 4002 - Analytical Chemistry Laboratory
- CHEM 4011 - Instrumental Analysis
- CHEM 4012 - Instrumental Analysis Laboratory
- CHEM 4101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy (If not taking CHEM 4701)
- CHEM 4102 - Experimental Physical Chemistry: Quantum Mechanics and Spectroscopy
- CHEM 4111 - Physical Chemistry: Thermodynamics and Kinetics (If not taking CHEM 4701)
- CHEM 4112 - Experimental Physical Chemistry: Thermodynamics and Kinetics
- CHEM 4301 - Inorganic Chemistry I (If not taking CHEM 4711)
- CHEM 4311 - Inorganic Chemistry II (If not taking CHEM 4711)
- CHEM 4421 - Chemistry of Heterocyclic Compounds
- CHEM 4501 - Mass Spectrometry Instrumentation and Use
- CHEM 4502 - Bioanalytical Techniques
- CHEM 4511 - Forensic Chemistry
- CHEM 4521 - Environmental Chemistry
- CHEM 4601 - Nanoscience and Nanotechnology
- CHEM 4801 - Molecular Photochemistry
- CHEM 4811 - Molecular Symmetry and Chemical Applications of Group Theory
- CHEM 5401 - Advanced Organic Chemistry: Synthesis
- CHEM 5411 - Advanced Organic Chemistry: Mechanisms

Note: Students pursuing a BS in Biology must select courses that are not part of their degree program requirements in order to complete a chemistry minor. Students should familiarize themselves with the prerequisite requirements for these courses.

COMMUNICATION

FACULTY

- *Professors:* George Cheney, Sherry Morreale, David R. Nelson (Chair), Sally Planalp, Pam Shockley-
- Zalabak, Constance Staley, and Kim Walker
- *Associate Professors:* K. Maja Krakowiak and Carmen Stavrositu
- *Associate Professor Emerita:* Adelina Gomez
- *Assistant Professors:* Christopher Bell, Lauren Brengarth, Irina Kopaneva
- *Senior Instructors:* Laura Austin-Eurich, Connie Blackmann, Liesl Eberhardt, JaNae Stansbery, and Janice Thorpe
- *Director of Communication Center:* Erica Allgood

ADVISING

- *Undergraduate:* Laura Austin-Eurich, Director of Undergraduate Studies
- *Minor in Leadership Studies:* Department Chair
- *Graduate:* Christopher Bell, Director of Graduate Studies

Communication majors are required to meet with the departmental advisor at least once a year.

PROGRAMS OF STUDY

- Digital Filmmaking and Media Arts Minor (Communication)
- General Communication Minor
- Leadership Studies Minor (Communication)
- Media Studies Minor (Communication)
- Organizational and Strategic Communication Minor
- Communication, BA
- Digital Filmmaking, BI™
- Communication, MA

COMMUNICATION, BA

Students pursuing a degree in Communication prepare themselves for a broad range of employment opportunities in both the public and private sectors. The General Communication track allows students to prepare for a career in communication with courses tailored to the individual student's interests and career objectives. There are four tracks to choose from: Digital Filmmaking and Media Arts, General Communication, Media Studies, and Professional Communication. The Communication BA may also be completed as an online degree. All degree course requirements are detailed below.

DEPARTMENTAL GOALS

- To develop and graduate communication majors with demonstrable growth and competence in writing, creative, and analytical skills. Specifically, students will demonstrate effective use of language, clarity of expression, critical thinking, and ability to apply theoretical knowledge to actual cases, research skills, and appropriate organizational structure.
- To prepare students for employment, future graduate studies, and research.
- To provide a service function by contributing to the liberal education of noncommunication majors who take courses in communication.

LEARNING OUTCOMES

- Students will develop a thorough background in the discipline of communication.
- Students will experience growth and competence in writing.
- Students will develop effective use of language and clarity of expression.
- Students will experience growth in critical thinking and analytic skills.
- Students will develop ability to apply theoretical knowledge and to conduct research appropriate to actual cases and appropriate organizational structure.

DEPARTMENTAL HONORS

To qualify for departmental honors in Communication, students must have a GPA of 3.75 in their communication coursework at UCCS and an overall GPA of 3.5. Students who qualify for departmental honors will be contacted by the Department of Communication after they complete their senior audit. Those who choose to take the honors examination will then be eligible to graduate with departmental honors and to be nominated as the Outstanding Student in the Social Sciences at UCCS.

The honors committee will develop three exam questions, based on three communication areas of study that the student selects, for a three-hour written exam. Students will be permitted to use notes for the examination. Following the written examination, the student will participate in a one-hour oral examination. The oral exam/defense will include a discussion of the written examination and a question and answer session pertaining to each written response, at which time the student will need to be prepared to defend their work to the Honors Committee members.

GENERAL REQUIREMENTS

- The Communication, BA requires 39 credit hours in COMM courses, 18 of which must be upper division (3000+ level).
- All Communication majors must take COMM 2030, the five required courses in their track/emphasis, three foundation courses, and four courses from the list of electives in their track. SOME Foundation courses may be taken as electives, but NONE MAY BE counted as both a Foundation course and an elective. Internships are encouraged for upper division students who have at least a 3.0 GPA.
- All graduating Communication majors must take an exit exam that samples the student's understanding of the major concepts of his/her content area. Students will take the exam during their last semester. Graduating seniors will receive information regarding test times, dates, and locations.
- Communication majors must maintain a minimum 2.0 GPA in all COMM coursework completed in order to graduate.

COURSE REQUIREMENTS

Digital Filmmaking and Media Arts Track

Required Courses
(6 courses/18 credit hours)

- COMM 2030 - Introduction to Communication Theory
- COMM 2250 - Introduction to Film and Video
- COMM 3100 - Directing for Film and Television
- COMM 3270 - Digital Cinematography
- COMM 3300 - Screenwriting
- COMM 4270 - Digital Film Production (Prereq: COMM 2250)

Foundation Courses
Select one course from each category (3 courses/9 credit hours)

Film and TV History and Criticism

- COMM 3450 - The History of TV Programming
- COMM 3500 - American Cinema
- COMM 4010 - Privilege and Oppression in Popular Culture

Film and TV Production

- COMM 2270 - Sports and Studio TV Production
- COMM 4170 - Documentary Film and Video
- COMM 3460 - Digital Film Editing

General Communication

- COMM 2900 - Writing for the Media
- COMM 3250 - Principles and Practices of Advertising
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination

Elective Courses
Choose any four courses from the list below unless you took that class as a **Foundation Course** (4 courses/12 credit hours)

- COMM 1000 - Contemporary Mass Media
- COMM 1020 - Interpersonal Communication
- COMM 1440 - Foundations of Leadership
- COMM 2100 - Public Speaking
- COMM 2270 - Sports and Studio TV Production
- COMM 2900 - Writing for the Media
- COMM 3000 - UCCS Television Workshop: The Bluffs - Studio
- COMM 3010 - UCCS Television Workshop: The Bluffs - Writing
- COMM 3200 - Principles and Practice of Public Relations
- COMM 3250 - Principles and Practices of Advertising
- COMM 3280 - Intercultural and Global Communication
- COMM 3400 - Digital Communication Technologies

- COMM 3450 - The History of TV Programming
- COMM 3460 - Digital Film Editing
- COMM 3500 - American Cinema
- COMM 3650 - Mass Media and Society
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination
- COMM 4000 - Rhetorical Dimensions in Communication
- COMM 4010 - Privilege and Oppression in Popular Culture
- COMM 4140 - Media Effects
- COMM 4170 - Documentary Film and Video
- COMM 4200 - Persuasion
- COMM 4460 - Advanced Editing and Colorization
- COMM 4690 - Internship in Communication
- COMM 4900 - Special Topics in Communication
- COMM 9400 - Independent Study in Communication

Suggested Sequence of Courses

Freshman Year
- COMM 2030 Introduction to Communication Theory
- COMM 2250 Introduction to Film and Video
- Foundation Course 1

Sophomore Year
- COMM 3100 Directing for Film and Television
- COMM 3270 Digital Cinematography
- Foundation Course 2

Junior Year
- COMM 3300 Screenwriting
- Foundation Course 3
- Elective 1
- Elective 2

Senior Year
- COMM 4270 Digital Film Production
- Elective 3
- Elective 4

General Communication Track

Required Courses
(6 courses/18 credit hours)
- COMM 1020 - Interpersonal Communication
- COMM 2030 - Introduction to Communication Theory
- COMM 2100 - Public Speaking
- COMM 2500 - Research Methods
- COMM 3440 - Organizational Leadership
- COMM 4000 - Rhetorical Dimensions in Communication

Foundation Courses
Select one course from each category (3 courses/9 credit hours)

Professional Communication

- COMM 1440 - Foundations of Leadership
- COMM 2240 - Principles of Organizational and Strategic Communication

Digital Filmmaking and Media Arts

- COMM 2250 - Introduction to Film and Video
- COMM 2270 - Sports and Studio TV Production
- COMM 3100 - Directing for Film and Television

Media Studies

- COMM 1000 - Contemporary Mass Media
- COMM 3500 - American Cinema
- COMM 3650 - Mass Media and Society

Elective Courses

Choose any four courses from the list below unless you took that class as a **Foundation Course** (4 courses/12 credit hours)

- COMM 1000 - Contemporary Mass Media
- COMM 1440 - Foundations of Leadership
- COMM 2150 - Male/Female Communication
- COMM 2240 - Principles of Organizational and Strategic Communication
- COMM 2250 - Introduction to Film and Video
- COMM 2270 - Sports and Studio TV Production
- COMM 2440 - Leadership Theory and Practice
- COMM 2900 - Writing for the Media
- COMM 3000 - UCCS Television Workshop: The Bluffs - Studio
- COMM 3010 - UCCS Television Workshop: The Bluffs - Writing
- COMM 3100 - Directing for Film and Television
- COMM 3150 - Communication Competency in Groups and Teams
- COMM 3200 - Principles and Practice of Public Relations
- COMM 3240 - Business and Professional Communication
- COMM 3250 - Principles and Practices of Advertising
- COMM 3280 - Intercultural and Global Communication
- COMM 3300 - Screenwriting
- COMM 3330 - Gender and Leadership
- COMM 3350 - Integrated Marketing Communication
- COMM 3400 - Digital Communication Technologies
- COMM 3450 - The History of TV Programming
- COMM 3460 - Digital Film Editing
- COMM 3500 - American Cinema
- COMM 3650 - Mass Media and Society
- COMM 3800 - Strategic Communication Tactics
- COMM 3480 - Media and Health
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination
- COMM 4010 - Privilege and Oppression in Popular Culture
- COMM 4050 - Public Relations and Social Media

- COMM 4100 - Advanced Public Speaking
- COMM 4110 - Communication Competence
- COMM 4140 - Media Effects
- COMM 4150 - Communication, Teaching, and Learning
- COMM 4160 - Communication, Training, and Development
- COMM 4170 - Documentary Film and Video
- COMM 4200 - Persuasion
- COMM 4220 - Creative Communication
- COMM 4250 - Advanced Interpersonal Communication: Conflict Management
- COMM 4270 - Digital Film Production
- COMM 4280 - Multicultural Diversity and Workplace Communication
- COMM 4290 - Sustainability and Corporate Social Responsibility
- COMM 4350 - Critical Analysis of Popular Culture
- COMM 4690 - Internship in Communication (with approval of Internship Director)

Suggested Sequence of Courses

Freshman Year

- COMM 1020 Interpersonal Communication
- COMM 2030 Introduction to Communication Theory
- Foundation Course 1

Sophomore Year

- COMM 2100 Public Speaking
- COMM 2500 Research Methods
- Foundation Course 2
- Foundation Course 3

Junior Year

- COMM 3440 Organizational Leadership
- Foundation Course 4
- Elective 1
- Elective 2

Senior Year

- COMM 4000 Rhetorical Dimensions in Communication
- Elective 3
- Elective 4

Media Studies Track

Required Courses

(6 courses/18 credit hours)

- COMM 1000 - Contemporary Mass Media
- COMM 2030 - Introduction to Communication Theory
- COMM 2500 - Research Methods
- COMM 3650 - Mass Media and Society

- COMM 4140 - Media Effects
- COMM 4350 - Critical Analysis of Popular Culture

Foundation Courses
Select one course from each category (3 courses/9 credit hours).

Media History and Criticism

- COMM 3450 – The History of TV Programming
- COMM 3500 – American Cinema
- COMM 4010 – Privilege and Oppression in Popular Culture

Media Production

- COMM 2250 – Introduction to Film and Video
- COMM 2270 – Sports and Studio TV Production
- COMM 3460 – Digital Film Editing

Applied Media Studies

- COMM 3250 – Principles and Practices of Advertising
- COMM 3480 – Media and Health
- COMM 4090 – Emerging Communication Technology

Elective Courses
Select any four (4 courses/12 credit hours).

Courses from the list below will not count as an elective if already taken as a **Foundation Course.**

- COMM 2250 – Introduction to Film and Video
- COMM 2270 – Sports and Studio TV Production
- COMM 2900 – Writing for the Media
- COMM 3100 – Directing for Film and Television
- COMM 3200 – Principles and Practice of Public Relations
- COMM 3250 – Principles and Practices of Advertising
- COMM 3280 – Intercultural and Global Communication
- COMM 3300 – Screenwriting
- COMM 3350 – Integrated Marketing Communication
- COMM 3400 – Digital Communication Technologies
- COMM 3450 – The History of TV Programming
- COMM 3460 – Digital Film Editing
- COMM 3480 – Media and Health
- COMM 3500 – American Cinema
- COMM 3850 – Walt Disney: The Nexus of Communication and Imagination
- COMM 4000 – Rhetorical Dimensions in Communication
- COMM 4010 – Privilege and Oppression in Popular Culture
- COMM 4050 – Public Relations and Social Media
- COMM 4090 – Emerging Communication Technology
- COMM 4170 – Documentary Film and Video
- COMM 4200 – Persuasion
- COMM 4690 – Internship in Communication (with approval of Internship Director)

- COMM 4750 - Communication Law
- COMM 4900 - Special Topics in Communication (with approval of Director of Undergraduate Studies)
- COMM 9400 - Independent Study in Communication (with approval of Director of Undergraduate Studies)

Suggested Sequence of Courses

Freshman Year
- COMM 1000 Contemporary Mass Media
- COMM 2030 Introduction to Communication Theory
- Foundation Course 1

Sophomore Year
- COMM 2500 Research Methods
- Foundation Course 2
- Foundation Course 3

Junior Year
- COMM 3650 Mass Media and Society
- Elective COMM Course
- Elective COMM Course
- Upper Division COMM Elective Course

Senior Year
- COMM 4140 Media Effects
- COMM 4350 Critical Analysis of Popular Culture
- Upper Division COMM Elective Course

Professional Communication Track

Students in this track must choose an emphasis: Leadership, or Organizational and Strategic Communication.

Leadership Emphasis

Required Courses
(6 courses/18 credit hours)
- COMM 2030 - Introduction to Communication Theory
- COMM 2440 - Leadership Theory and Practice
- COMM 3440 - Organizational Leadership
- COMM 3770 - Ethical Leadership
- COMM 4770 - Leadership Communication in a Global Environment
- COMM 4950 - Seminar in Leadership and Organizational Change

Foundation Courses
Select one course from each category (3 courses/9 credit hours)

Leadership Communication

- COMM 1440 - Foundations of Leadership
- COMM 3440 - Organizational Leadership
- COMM 4770 - Leadership Communication in a Global Environment

Organizational Communication

- COMM 2100 - Public Speaking

- COMM 3290 - Organizational Change and Development
- COMM 4280 - Multicultural Diversity and Workplace Communication

Strategic Communication

- COMM 2900 - Writing for the Media
- COMM 3800 - Strategic Communication Tactics
- COMM 4050 - Public Relations and Social Media

Elective Courses

Choose any four courses from the list below unless you took that class as a **Foundation Course** (4 courses/12 credit hours).

- COMM 2900 - Writing for the Media
- COMM 3100 - Directing for Film and Television
- COMM 3150 - Communication Competency in Groups and Teams
- COMM 3230 - Nonverbal Communication
- COMM 3240 - Business and Professional Communication
- COMM 3280 - Intercultural and Global Communication
- COMM 3330 - Gender and Leadership
- COMM 3400 - Digital Communication Technologies
- COMM 3650 - Mass Media and Society
- COMM 3800 - Strategic Communication Tactics
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination
- COMM 4050 - Public Relations and Social Media
- COMM 4090 - Emerging Communication Technology
- COMM 4100 - Advanced Public Speaking
- COMM 4140 - Media Effects
- COMM 4200 - Persuasion
- COMM 4220 - Creative Communication
- COMM 4250 - Advanced Interpersonal Communication: Conflict Management
- COMM 4280 - Multicultural Diversity and Workplace Communication
- COMM 4290 - Sustainability and Corporate Social Responsibility
- COMM 4510 - Quantitative Methods for Communication Research
- COMM 4690 - Internship in Communication (with approval of Internship Director)
- COMM 4750 - Communication Law
- COMM 4770 - Leadership Communication in a Global Environment
- COMM 4800 - Strategic Communication and Campaigns
- COMM 4900 - Special Topics in Communication (with approval of Director of Undergraduate Studies)
- COMM 4950 - Seminar in Leadership and Organizational Change
- COMM 9400 - Independent Study in Communication (with approval of Director of Undergraduate Studies)

Suggested Sequence of Courses

Freshman Year

- COMM 1440 Foundations of Leadership (Leadership Foundation Course)
- COMM 2100 Public Speaking (Organizational Foundation Course)
- COMM Strategic Communication Foundation Course

Sophomore Year

- COMM 2030 Introduction to Communication Theory
- COMM 2440 Leadership Theory and Practice
- COMM Leadership Elective Course

Junior Year

- COMM 3800 Strategic Communication Tactics
- COMM 3440 Organizational Leadership
- COMM 3770 Ethical Leadership
- COMM Leadership Elective Course

Senior Year

- COMM 4770 Leadership Communication in a Global Environment
- COMM 4950 Seminar in Leadership and Organizational Change
- Upper-Division COMM Elective Course
- Upper-Division COMM Elective Course

Organizational and Strategic Communication Emphasis

Required Courses
(6 courses/18 credit hours)

- COMM 2030 - Introduction to Communication Theory
- COMM 2240 - Principles of Organizational and Strategic Communication
- COMM 3150 - Communication Competency in Groups and Teams
- COMM 3350 - Integrated Marketing Communication
- COMM 4160 - Communication, Training, and Development
- COMM 4240 - Advanced Organizational and Strategic Communication

Foundation Courses
Select one course from each category (3 courses/9 credit hours)

Leadership Communication

- COMM 1440 - Foundations of Leadership
- COMM 3440 - Organizational Leadership
- COMM 4770 - Leadership Communication in a Global Environment

Organizational Communication

- COMM 2100 - Public Speaking
- COMM 3290 - Organizational Change and Development
- COMM 4280 - Multicultural Diversity and Workplace Communication

Strategic Communication

- COMM 2900 - Writing for the Media
- COMM 3800 - Strategic Communication Tactics
- COMM 4050 - Public Relations and Social Media

Elective Courses
Choose any four courses from the list below unless you took that class as a **Foundation Course** (4 courses/12 credit hours)

- COMM 1440 - Foundations of Leadership

- COMM 2100 - Public Speaking
- COMM 2500 - Research Methods
- COMM 2900 - Writing for the Media
- COMM 3200 - Principles and Practice of Public Relations
- COMM 3240 - Business and Professional Communication
- COMM 3250 - Principles and Practices of Advertising
- COMM 3280 - Intercultural and Global Communication
- COMM 3400 - Digital Communication Technologies
- COMM 3440 - Organizational Leadership
- COMM 3480 - Media and Health
- COMM 3800 - Strategic Communication Tactics
- COMM 4050 - Public Relations and Social Media
- COMM 4100 - Advanced Public Speaking
- COMM 4110 - Communication Competence
- COMM 4140 - Media Effects
- COMM 4200 - Persuasion
- COMM 4280 - Multicultural Diversity and Workplace Communication
- COMM 4290 - Sustainability and Corporate Social Responsibility
- COMM 4690 - Internship in Communication
- COMM 4750 - Communication Law
- COMM 4770 - Leadership Communication in a Global Environment
- COMM 4800 - Strategic Communication and Campaigns
- COMM 4900 - Special Topics in Communication (with approval of Director of Undergraduate Studies)
- COMM 9400 - Independent Study in Communication (with approval of Director of Undergraduate Studies)

Suggested Sequence of Courses

Freshman Year

- COMM 2030 Introduction to Communication Theory
- COMM 2240 Principles of Organizational and Strategic Communication
- Leadership Foundation Course

Sophomore Year

- COMM 2500 Research Methods (Org Strat Elective Course)
- COMM 3150 Communication Competency in Groups and Teams
- Organizational Foundation Course

Junior Year

- COMM 3350 Integrated Marketing Communication
- COMM 4160 Communication, Training, and Development
- Strategic Foundation Course
- COMM Org Strat Elective Course

Senior Year

- COMM 4240 Advanced Organizational and Strategic Communication
- COMM Org Strat Elective Course
- COMM Org Strat Elective Course
- Upper-Division COMM Org Strat Elective Course

ONLINE COMMUNICATION, BA

- COMM 2030 - Introduction to Communication Theory

- COMM 2100 - Public Speaking * Must be taken in person at UCCS, or at any accredited institution of higher learning with the credit being transferred to UCCS, until an online public speaking course has been developed.
- COMM 2500 - Research Methods
- COMM 3240 - Business and Professional Communication
- COMM 3400 - Digital Communication Technologies
- COMM 4200 - Persuasion

Electives

Complete 6 of the following courses.

- COMM 1000 - Contemporary Mass Media
- COMM 1020 - Interpersonal Communication
- COMM 2900 - Writing for the Media
- COMM 3330 - Gender and Leadership
- COMM 3350 - Integrated Marketing Communication
- COMM 3480 - Media and Health
- COMM 3650 - Mass Media and Society
- COMM 3770 - Ethical Leadership
- COMM 4050 - Public Relations and Social Media
- COMM 4090 - Emerging Communication Technology
- COMM 4140 - Media Effects
- COMM 4690 - Internship in Communication

DIGITAL FILMMAKING, BI™

The Bachelor of Innovation (BI) degree in Digital Filmmaking combines academic studies and professional training to prepare students for a variety of careers in mass communication including film, television, corporate video, educational video, documentary making, freelance production, video gaming, and new media. The degree is structured so that students will gain a depth of understanding in communicating using images and sound that include camera techniques, lighting, sound recording, video and sound editing, story structures, as well as a breadth of other concepts in communication, business and entrepreneurship.

GENERAL REQUIREMENTS

- 42 credit hours of COMM coursework, 18 of which must be upper-division (3000+ level). All COMM department courses must be completed with a grade of C or better.
- 24 credit hours of Innovation Core courses on innovation, entrepreneurship, business and IP law, and policy. Students develop an innovation portfolio that documents and highlights their roles and contributions in these various courses.
- 15 credit hours of Cross-Discipline Core courses.

COURSE REQUIREMENTS

Communication Core - 42 credit hours

- COMM 1000 - Contemporary Mass Media
- COMM 1440 - Foundations of Leadership
- COMM 2100 - Public Speaking

- COMM 2250 - Introduction to Film and Video
- COMM 2270 - Sports and Studio TV Production
- COMM 3000 - UCCS Television Workshop: The Bluffs - Studio
- COMM 3100 - Directing for Film and Television
- COMM 3250 - Principles and Practices of Advertising
- COMM 3270 - Digital Cinematography
- COMM 3300 - Screenwriting
- COMM 3400 - Digital Communication Technologies
- COMM 3460 - Digital Film Editing
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination
- COMM 4270 - Digital Film Production

Innovation Core - 24 credit hours

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Discipline Core - 15 credit hours

Complete one of the Cross-Discipline Cores listed below. Each Cross-Discipline Core consists of 15 credit hours. See the BI website for specific courses: http://innovation.uccs.edu/cross-diciplinary-core/.

- Business
- Engineering Technology
- Globalization

COMMUNICATION, MA

The Master of Arts (MA) in Communication at UCCS offers students the opportunity to engage in advanced study and to develop graduate-level expertise for addressing complex communication problems in modern organizations and social systems. This program prepares graduates for careers in the profit and non-profit sectors, as well as in academia. Given the extent to which communication is ubiquitous, the mission of our graduate program is to help students develop an array of scholarly, personal, and professional communication skills suitable to a variety of contexts. Students are encouraged to develop expertise in professional (organizational) communication, media studies, or advanced studies with an emphasis on their own particular area of interest. With any of these three focuses, students learn to connect communication knowledge, theory, and research capacities to real-world situations. In addition, our program seeks to instill in students a passion for intellectual and theoretical discovery that transcends career objectives and course expectations.

LEARNING OUTCOMES: HONORING OUR MISSION

Upon graduation, all of our students will demonstrate these competencies:

- Broad-based and advanced knowledge and understanding of communication processes and theories related to professional (organizational) communication, media studies, and/or the student's personal area of interest.
- Well-developed communication skills, including critical thinking and analysis, speaking, and writing, that prepare for success in the workplace or further graduate studies, including a doctoral program.
- An awareness and motivation to use their communication knowledge and skills with sensitivity to critical issues such as ethics and inclusiveness in a diverse and technologically mediated global environment and society.
- Proficiency in designing and conducting an original communication research study or a research-based training in their chosen area of interest.

A PERSONALIZED PROGRAM OF GRADUATE STUDY

In consultation with graduate faculty, graduate students develop a personalized program of study to foster their own learning objectives and career goals. They are required to complete a set of core courses; and the organizational communication focus identifies four required electives. Thesis and non-thesis options are available. See below for course requirement details.

With both plans, no more than 6 credit hours of graduate coursework may be transferred from other universities to fulfill the degree requirements for the MA in Communication. With both plans, only 3 credit hours of COMM 9500 Independent Study, and 3 credits of COMM 6020 Communication Research Practicum, may be applied to the degree requirements as electives.

COURSE REQUIREMENTS

Plan I: Thesis - 33 credit hours

- Four core courses
- Four elective courses (chosen from list below)
- One graduate-level course from outside the department
- 6 credit hours of thesis (COMM 7000 Masters Thesis). No comprehensive exam is required.

Plan II: Comprehensive Exam - 33 credit hours

- Five core courses
- Five elective courses (chosen from list below)
- One graduate level course from outside the department
- Comprehensive examination as part of core course COMM 6050

Recommended Two-Year Schedule of Courses - Plan II

Fall	Spring	Spring Break	Summer	Fall	Spring
5010	6040	Elective 2	Out of Department Course	6030	6050

5020	Elective 1		Elective 3	Elective 4	Elective 5

Core Courses

- COMM 5010 - Introduction to Graduate Studies: The Communication Discipline and Theories
- COMM 5020 - Quantitative Research Methods
- COMM 6030 - Statistical Data Analysis
- COMM 6040 - Qualitative Research Methods
- COMM 6050 - Communication Graduate Capstone Experience (not required for thesis option)

General Electives

- COMM 5050 - Public Relations and Social Media
- COMM 5100 - Advanced Public Speaking
- COMM 5150 - Communication, Teaching, and Learning
- COMM 5240 - Advanced Organizational and Strategic Communication
- COMM 5290 - Sustainability and Corporate Social Responsibility
- COMM 5330 - Gender and Leadership
- COMM 5550 - Professional and Personal Relationships
- COMM 5690 - Problems in Radio-Television and Film
- COMM 5950 - Seminar in Leadership and Organizational Change
- COMM 5990 - Multicultural Diversity and Workplace Communication
- COMM 6010 - Privilege and Oppression in Popular Culture
- COMM 6020 - Communication Research Practicum
- COMM 6090 - Emerging Communication Technology
- COMM 6100 - Communication Competence
- COMM 6140 - Media Effects
- COMM 6160 - Communication, Training, and Development
- COMM 6250 - Problems in Communication
- COMM 6350 - Critical Analysis of Popular Culture
- COMM 6840 - Health Communication: Interpersonal Perspectives
- COMM 9500 - Independent Study in Communication - Graduate (instructor approval)

Recommended Electives for Media Studies

- COMM 6010 - Privilege and Oppression in Popular Culture
- COMM 6090 - Emerging Communication Technology
- COMM 6140 - Media Effects
- COMM 6250 - Problems in Communication (Creative Media Focus)
- COMM 6350 - Critical Analysis of Popular Culture (recommended in first year of program)

Recommended Electives for Professional Communication

- COMM 5100 - Advanced Public Speaking
- COMM 5240 - Advanced Organizational and Strategic Communication
- COMM 5950 - Seminar in Leadership and Organizational Change
- COMM 5990 - Multicultural Diversity and Workplace Communication
- COMM 6090 - Emerging Communication Technology

ADMISSION REQUIREMENTS

There are multiple application processes to the Communication, MA. Please see the Communications web page on graduate applications at http://www.uccs.edu/comm/graduate/application_process.html, and the UCCS Graduate School web page at http://www.uccs.edu/graduateschool/prospective-students/admissions.html for full admission information.

DIGITAL FILMMAKING AND MEDIA ARTS MINOR (COMMUNICATION)

GENERAL REQUIREMENTS

- 18 credit hours of COMM coursework, 9 of which must be upper division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- COMM 2250 - Introduction to Film and Video
- COMM 3270 - Digital Cinematography
- COMM 3300 - Screenwriting
- COMM 4270 - Digital Film Production

  Complete two of the following.

- COMM 2270 - Sports and Studio TV Production
- COMM 3100 - Directing for Film and Television
- COMM 3460 - Digital Film Editing
- COMM 3500 - American Cinema
- COMM 3850 - Walt Disney: The Nexus of Communication and Imagination
- COMM 4170 - Documentary Film and Video
- COMM 4460 - Advanced Editing and Colorization

GENERAL COMMUNICATION MINOR

GENERAL REQUIREMENTS

- 18 credit hours of COMM coursework, 9 of which must be upper division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- COMM 1020 - Interpersonal Communication
- COMM 2030 - Introduction to Communication Theory
- COMM 2100 - Public Speaking

  Complete three upper-division (3000+ level) COMM elective courses.

LEADERSHIP STUDIES MINOR (COMMUNICATION)

GENERAL REQUIREMENTS

- 18 credit hours of COMM coursework, 9 of which must be upper division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- COMM 1440 - Foundations of Leadership
- COMM 2440 - Leadership Theory and Practice
- COMM 4950 - Seminar in Leadership and Organizational Change

Understanding Diversity
Complete one of the following courses.

- COMM 2150 - Male/Female Communication
- COMM 3280 - Intercultural and Global Communication
- COMM 3330 - Gender and Leadership
- PSC 3010 - Women in Politics
- PSY 3450 - Psychology of Diversity
- PSY 3550 - Psychology of Women
- SOC 2200 - Introduction to Racial and Ethnic Groups
- SOC 3290 - Perspectives on Race and Ethnic Relations
- WEST 3010 - Women in Politics
- WEST 3290 - Perspectives on Race and Ethnic Relations
- WEST 3350 - Psychology of Diversity

Management and Organizational Leadership
Complete one of the following courses.

- COMM 3440 - Organizational Leadership
- MGMT 3300 - Introduction to Management and Organization
- MGMT 4370 - Organizational Development and Change
- PHIL 4160 - Business and Management Ethics

Social and Political Applications of Leadership
Complete one of the following courses.

- COMM 3770 - Ethical Leadership
- COMM 4290 - Sustainability and Corporate Social Responsibility
- COMM 4770 - Leadership Communication in a Global Environment
- ECON 3300 - Environmental Economics I
- GES 3660 - Applied Community Studies
- ID 3660 - Non-Departmental Internship for Liberal Arts
- LEAD 2110 - Profiles of Leadership
- LEAD 4500 - Student Leadership Seminar (This option open only to students enrolled in the Chancellor's Leadership Class)
- PHIL 4140 - Philosophy of Nature: Sustainability and Globalization
- PSC 4070 - Urban Politics
- PSC 4390 - The Presidency
- SOC 2220 - Communities in a Global Environment

- WEST 3660 - Community Service and Learning

MEDIA STUDIES MINOR (COMMUNICATION)

GENERAL REQUIREMENTS

- 18 credit hours of COMM coursework, 9 of which must be upper division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- COMM 1000 - Contemporary Mass Media
- COMM 2500 - Research Methods
- COMM 4140 - Media Effects
- COMM 4350 - Critical Analysis of Popular Culture

  Complete two of the following.

- COMM 3250 - Principles and Practices of Advertising
- COMM 3480 - Media and Health
- COMM 3650 - Mass Media and Society
- COMM 4010 - Privilege and Oppression in Popular Culture
- COMM 4090 - Emerging Communication Technology

ORGANIZATIONAL AND STRATEGIC COMMUNICATION MINOR

GENERAL REQUIREMENTS

- 18 credit hours of COMM coursework, 9 of which must be upper division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- COMM 1020 - Interpersonal Communication
- COMM 2240 - Principles of Organizational and Strategic Communication
- COMM 3200 - Principles and Practice of Public Relations
- COMM 3400 - Digital Communication Technologies

  Complete two of the following.

- COMM 3150 - Communication Competency in Groups and Teams
- COMM 3240 - Business and Professional Communication
- COMM 3250 - Principles and Practices of Advertising
- COMM 3440 - Organizational Leadership
- COMM 4240 - Advanced Organizational and Strategic Communication

DISTRIBUTED STUDIES

Students who are working toward a BA degree in LAS may elect a major in a distributed studies program. The Distributed Studies BA degree is perhaps the most misunderstood degree at UCCS. It is not a "general studies"

degree with assorted coursework in a variety of subjects. Instead, Distributed Studies is a degree that is structured out of courses offered by two or more programs of study. The Distributed Studies major requires a primary subject area with at least 30 credit hours of coursework, of which at least 15 hours must be at the upper division level, and also a secondary subject area with at least 30 hours of coursework, of which at least 15 hours must be at the upper-division level. Courses taken as part of a Distributed Studies major can be counted toward the college area requirements.

The Distributed Studies major was initiated before minors were offered at UCCS; it served the needs of students who wanted a concentration of courses outside the major. Now, many students complete a major and minor rather than a distributed studies degree.

The requirements for the two different approaches (built on a stand-alone minor or structured interdisciplinary programs), are listed in the Distributed Studies, BA section of this catalog.

DISTRIBUTED STUDIES, BA

The Distributed Studies BA degree is perhaps the most misunderstood degree at UCCS. It is not a "general studies" degree with assorted coursework in a variety of subjects. Instead, Distributed Studies is a degree that is structured out of courses offered by two or more programs of study. The Distributed Studies major was initiated before minors were offered at UCCS; it served the needs of students who wanted a concentration of courses outside the major. Now, many students complete a major and minor rather than a distributed studies degree.

GENERAL REQUIREMENTS

The Distributed Studies major requires 60 credit hours of coursework, 30 of which must be upper-division (3000+ level), completed in two to three subjects areas. At least 30 credit hours of coursework (15 of which must be upper-division), must be taken in one primary and in one secondary subject. Courses taken as part of a distributed studies major can be counted toward the college area requirements.

There are two approaches to a distributed studies degree: Individualized Distributed Studies Built on Stand-Alone Minors and Structured Interdisciplinary Programs.

Individualized Distributed Studies Built on Stand-Alone Minors

Students may design a distributed studies major around a core curriculum provided by the following stand-alone minors or others approved by their host department(s). Before embarking on such a program of study, a student must negotiate a Distributed Studies contract with the director of the stand-alone minor that will constitute the primary area of the program.

- American Sign Language Minor
- Classics Minor
- Cognitive Studies Minor and Certificate
- Energy Science Minor
- French Minor
- Geology Minor
- German Minor
- Gerontology Minor
- Japanese Language and Culture Minor
- Mathematics as Liberal Art Minor

- Museum Studies and Gallery Practice Minor
- Political Economy Minor
- Pre-Law Minor
- Sustainable Development Minor

In this option, a stand-alone minor becomes the primary curriculum for the degree. Because most minors do not require 30 credit hours, the student must negotiate the remaining credit hours of primary subject with the director of the minor program. At least 15 credit hours must be from upper-division (3000+ level) courses. No more than 8 credit hours of independent study can be applied to the primary subject area.

The student, in consultation with the director of the primary subject, selects a secondary subject area in which he or she completes 30 credit hours (these cannot include credit hours taken to complete the primary subject requirement). The secondary subject area will consist of 30 credit hours in one discipline, or 30 credit hours divided between two disciplines (15 and 15, or 18 and 12). The degree requires 60 total credit hours, and students must maintain a 2.0 grade point average in all coursework included in the program.

Structured Interdisciplinary Program Options

These include options in business economics, justice studies, and public administration. These programs include a standard set of courses and electives. Students should check with department advisors before enrolling. The structured interdisciplinary program options are described below.

DISTRIBUTED STUDIES MAJOR IN BUSINESS ECONOMICS

Economics is both a social science and a business field (or discipline). On many campuses students can choose to major in economics in either the business school or in arts and sciences. However, UCCS students interested in both business and economics often choose between these interests by majoring in one or the other. The Distributed Studies major in Business Economics, offered through the Department of Economics, offers students a formal opportunity to pursue both interests.

The Distributed Studies major in Business Economics major requires at least 60 total credit hours of coursework. Its primary area is economics, and business is its secondary area.

The Distributed Studies major in Business Economics closely resembles the regular major in economics, in that the required economics and math courses for each major are identical. However, the Distributed Studies major in business economics requires 30 credit hours in ECON courses, rather than the 36 credit hours required for the economics major.

In the secondary area of business, students complete selected courses that fit their interests in business economics.

Students choosing a Distributed Studies major in Business Economics enroll in the College of Letters, Arts, and Sciences.

Course Requirements

- MATH 1120 Calculus for Business and Economics **or** MATH 1350 Calculus I

  Primary Area - Economics

- ECON 1010 - Introduction to Microeconomics

- ECON 2020 - Introduction to Macroeconomics
- ECON 2810 - Introduction to Statistics and Computing in Economics
- ECON 3010 - Intermediate Microeconomic Theory
- ECON 3020 - Intermediate Macroeconomic Theory

Complete 15 credit hours of ECON courses. At least 9 credit hours must be upper division.

Secondary Area - Business

- ACCT 2010 - Introduction to Financial Accounting
- ACCT 2020 - Introduction to Managerial Accounting
- FNCE 3050 - Basic Finance
- FNCE 4000 - Advanced Corporate Finance
- FNCE 4100 - Cases and Concepts in Finance

Complete five of the following.

- ACCT 3010 - Intermediate Accounting I
- BLAW 2000 - Business Law
- BUAD 3000 - Integrated Skills for Management
- FNCE 4200 - Investment and Portfolio Management
- FNCE 4400 - International Financial Management
- FNCE 4500 - Money and Banking
- MGMT 3300 - Introduction to Management and Organization
- MKTG 3000 - Principles of Marketing
- MKTG 3300 - Marketing Research
- MKTG 4800 - Marketing Planning and Strategies

DISTRIBUTED STUDIES MAJOR IN JUSTICE STUDIES

The Distributed Studies major in Justice Studies promotes a curriculum in the broad area of studies in legal and social justice. The primary area provides breadth of content and general learning within the academic disciplines which are generally acknowledged as most basic to understanding law, society, and legal institutions and culture. The secondary area provide skills of analysis and evaluation which both promote understanding of the law in action as well as provide an opportunity to apply these skills in the criminal justice setting in the community.

The major requires 60 total credit hours: 30 credit hours from primary area and 30 credit hours from secondary area (15 in analysis, application, and work force preparation courses, and 15 in a disciplinary emphasis area).

Course Requirements

Primary Area

Complete 30 credit hours chosen from the following. Complete at least one course in at least four different disciplines.

- BLAW 2000 - Business Law
- COMM 2100 - Public Speaking
- COMM 4200 - Persuasion
- PHIL 1120 - Critical Thinking
- PHIL 3200 - Politics and the Law

- PHIL 4260 - Philosophy of Law
- PSC 4350 - Environmental Policies and Administration
- PSC 4460 - Administrative Law
- PSC 4470 - Constitutional Law
- PSC 4480 - Civil Rights and Liberties
- PSC 4490 - The Judicial System
- PSY 3940 - Psychology and the Law
- PSY 3950 - Applied Psychology
- PSY 4440 - Drugs and Behavior
- SOC 2500 - Social Problems
- SOC 3400 - Criminology
- SOC 3410 - Sociology of Law
- SOC 4960 - Juvenile Delinquency

Secondary Area
Complete 30 credit hours of coursework as follows.

- SOC 3570 - Field Experience in Sociology
- PSC 9480 - Prelaw Internship

  Complete at least one of the following Social Statistics courses. Other options may be available.

- ANTH 3000 - Quantitative Methods in Anthropology
- COMM 4510 - Quantitative Methods for Communication Research
- ECON 2810 - Introduction to Statistics and Computing in Economics
- PSY 2100 - Introduction to Psychological Statistics
- SOC 3170 - Social Statistics

  Complete at least one of the following Social Research Methods courses. Other options may be available.

- COMM 2500 - Research Methods
- GES 3030 - Introduction to GIS
- GES 3050 - Introduction to Cartography
- PSY 2110 - Introduction to Psychological Research and Measurement
- PSC 3500 - Introduction to Political Inquiry
- SOC 3070 - Social Research Methods
- Complete one elective course in statistics, methods, or work force preparation.

Disciplinary Emphasis

In consultation with the advisor, students must select and complete a minimum of 15 credit hours to comprise an academically integrated area of emphasis related to justice studies. Although there is much discretion in how this area of emphasis is created, three general approaches can be suggested:

- Select 15 credit hours from any one discipline.
- Select 15 credit hours from those recommended for other interdisciplinary programs.
- Create an individualized course of study which will promote understanding of a specific area of justice studies, i.e., business crime, hate crimes, environmental crime, cross cultural/comparative approaches, jurisprudence, deviance, crimes and corrections, etc.

DISTRIBUTED STUDIES MAJOR IN PUBLIC ADMINISTRATION

The major requires 60 total credit hours: 30 credit hours from primary area and 30 credit hours from secondary area

Course Requirements

- ECON 1010 - Introduction to Microeconomics
- ECON 3010 - Intermediate Microeconomic Theory
- ECON 3210 - Economics of the Public Sector I
- ECON 4210 - Economics of the Public Sector II
- ECON 4510 - Constitution and the Economy
- PSC 1100 - The American Political System
- PSC 4040 - Political Interest Groups
- PSC 4070 - Urban Politics
- PSC 4320 - Public Administration
- PSC 4460 - Administrative Law
- SOC 1110 - Introduction to Sociology
- SOC 3070 - Social Research Methods
- SOC 3170 - Social Statistics
- SOC 3220 - Urban and Community Sociology

Primary Subject
Students must choose, with advice and consent of the chair of the Public Administration Program, an additional 15 credit hours of coursework in economics, political science, or sociology, in order to complete a primary subject field with a total of 30 credit hours.

Recommended Courses
In addition to the above requirements, it is highly recommended that Public Administration students also take as many of the following courses as possible:

- ACCT 2010 - Introduction to Financial Accounting
- COMM 1020 - Interpersonal Communication
- COMM 3650 - Mass Media and Society
- COMM 4240 - Advanced Organizational and Strategic Communication
- MATH 1040 - College Algebra
- PSY 1000 - General Psychology
- PSY 3400 - Social Psychology

ECONOMICS

FACULTY

- *Professor:* Daphne Greenwood
- *Professors Emeriti:* A. Paul Ballantyne and Timothy Tregarthen
- *Associate Professors:* Dale DeBoer (Chair) and Larry Eubanks

- *Assistant Professors:* Joseph Craig and Edward Hoang
- *Center Director and Senior Instructor:* John Brock
- *Senior Instructor:* Michael Lucchesi
- *Instructors:* Daniel Driscoll and David Mullin

PROGRAMS OF STUDY

- Economics Minor
- Political Economy Minor
- Economics, BA
- Graduate Certificates in Economic Education

ADVISING

All new majors are required to meet with department chair (Professor DeBoer) for general advising concerning economics requirements. Students interested in graduate study in economics should consult with faculty members about recommended courses. Further student information is available in the student resources section of the Department of Economics website (http://www.uccs.edu/~economics/).

CURRICULUM PLANNING

There are no prerequisites for 1000 level courses. Courses at the 2000 and 3000 level typically require at least one 1000 level prerequisite. Courses at the 4000 level typically require a 3000 level prerequisite. Students who take courses outside of the College of Letters, Arts, and Sciences in partial fulfillment of department requirements must be aware that these units will count against the 30 allowed units from outside the College of Letters, Arts, and Sciences for graduation.

DEPARTMENTAL HONORS

Students who wish to graduate with department honors must complete the following courses in addition to the given degree requirements.

- MATH 1350 Calculus I
  and two of the following:
- ECON 4010 Advanced Microeconomic Theory
- ECON 4020 Advanced Macroeconomic Theory
- ECON 4810 Introduction to Econometrics

With these three additional courses completed, department honors will be determined by major GPA at the following thresholds:

- Distinction: 3.2
- High Distinction: 3.5
- Highest Distinction: 3.8

ECONOMICS, BA

A Bachelor of Arts in Economics prepares students for a wide range of employment opportunities in both the public and private sector, and for graduate studies in law and business. Interested students are encouraged to

contact the department advisor or the department chair. Information is available on the department website at http://www.uccs.edu/~economics/.

LEARNING OUTCOMES

- Students should be able to identify and interpret literature relevant to an economic issue of interest
- Students should be able to identify and explain economic theories relevant to an economic issue of interest
- Students should be able to apply economic theory and evidence to an economic area of interest

GENERAL REQUIREMENTS

- A minimum of 36 credit hours of economics courses, of which at least 18 are upper division (3000-level or higher)
- All courses completed with a grade of C or better

COURSE REQUIREMENTS

With the exception of ECON 4990, each of the required courses should be completed prior to senior year.

- ECON 1010 Introduction to Microeconomics **or** ECON 1050 Economics in Practice
- ECON 2020 - Introduction to Macroeconomics
- ECON 2810 - Introduction to Statistics and Computing in Economics
- ECON 3010 - Intermediate Microeconomic Theory
- ECON 3020 - Intermediate Macroeconomic Theory
- ECON 4990 - Senior Seminar
- Complete 18 credit hours of ECON elective courses. At least 9 credit hours must be upper-division (3000+ level).

Course Recommendations
For students with particular areas of interest, the course recommendations below offer a curriculum-planning guide (please note that courses with a * serve to satisfy major requirements).

Graduate School Focus
Beyond the core requirements, students should take:

- ECON 4010 - Advanced Microeconomic Theory *
- ECON 4020 - Advanced Macroeconomic Theory *
- ECON 4810 - Introduction to Econometrics *
- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3130 - Introduction to Linear Algebra
- MATH 3810 - Introduction to Probability and Statistics *

Business Focus
Beyond the core requirements, students should take:

- ACCT 2010 - Introduction to Financial Accounting
- ECON 3690 - Economics of Business *

- FNCE 3050 - Basic Finance
- FNCE 4400 - International Financial Management *
- MATH 1120 - Calculus for Business and Economics

Pre-Law Focus
Beyond the core requirements, students should take:
- MATH 1120 - Calculus for Business and Economics
- ECON 3210 - Economics of the Public Sector I *
- ECON 3850 - Law and Economics *
- ECON 4010 - Advanced Microeconomic Theory *
- ECON 4210 - Economics of the Public Sector II *
- ECON 4510 - Constitution and the Economy *

Actuary/Applied Analysis Focus
Beyond the core requirements, students should take:
- ECON 4010 - Advanced Microeconomic Theory *
- ECON 4810 - Introduction to Econometrics *
- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3130 - Introduction to Linear Algebra
- MATH 3810 - Introduction to Probability and Statistics *
- MATH 4810 - Mathematical Statistics I *
- MATH 4820 - Mathematical Statistics II *
- MATH 4830 - Linear Statistical Models *

ECONOMICS MINOR

GENERAL REQUIREMENTS

The minor in Economics requires 18 credit hours of Economics courses, 9 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

Given the overlap in requirements, students majoring in Business are particularly encouraged to pursue the Economics Minor.

COURSE REQUIREMENTS

- ECON 1010 Introduction to Microeconomics **or** ECON 1050 Economics in Practice
- ECON 2020 Introduction to Macroeconomics
- ECON 3010 Intermediate Microeconomic Theory **or** ECON 3020 Intermediate Macroeconomic Theory
- Complete three ECON elective courses, at least two of which must be upper-division (3000+level).

ENGLISH

FACULTY

- *Professors*: Rebecca Laroche, Thomas J. Napierkowski, Kenneth Pellow, and Susan Taylor

- *Professors Emeriti:* Alexander L. Blackburn and Jeffrey Rubin-Dorsky
- *Professor Emerita:* Joan Ray
- *Associate Professors:* Lesley Ginsberg, K. Alex Ilyasova (Director of Professional/Technical Writing Program), Katherine Mack (Chair), and Kirsten Bartholomew Ortega
- *Assistant Professors:* Ann Amicucci and David Diamond
- *Director, Writing Across the Curriculum/Portfolio Assessment & Assistant Professor Attendant Rank:* Michelle Neely
- *Senior Instructors:* Mary Margaret Alvarado, Gina Baldoni-Rus, Cheryl Birkelo, Susan Finger, Anthony Friedhoff, Keri Hemenway, Kathleen Johnson, Ceil Malek, Quentin Martin, Jamie May, Melonie
- McMichael, William Myers, Rebecca Posusta, Meghan Tifft, Sarah Treschl, Thomas Wahl, and Andrea Wenker
- *Instructors:* B. Denise Garrett, Catherine Grandorff, Phillip Heasley, Baye Herald, Stacey Johnson,
- Chelsea Lawson, June Loterbauer, Jennifer McArdle, Elizabeth Medendorp, Omar Montoya, Jennifer Panko, Leslie Rapparlie, Christine Robinson, Kacey Ross, M. Nate Siebert, Benjamin Syn, Richard Thomas, Erin Trauth, Justin Tucker, and Kevin Van Winkle

PROGRAMS OF STUDY

- English Creative Writing Minor
- English Literature Minor
- English Professional and Technical Writing Minor and Certificate
- English Rhetoric and Writing Minor
- English First-Year Rhetoric and Writing Program
- English, BA
- English Undergraduate Certificate in Professional and Technical Writing - User Experience

ENGLISH DEPARTMENT ACADEMIC POLICIES

Levels of Courses

Ordinarily, 1000 level courses are taken prior to 2000 level courses, and so on. Unless otherwise indicated, courses have general prerequisites as follows: for 2000 level courses, 24 prior college credits; for 3000 level courses, 30 college credits; for 4000 level courses, 45 college credits.

Prerequisite for All English Courses

Students must fulfill the ENGL 1310 requirement prior to taking any other English course beyond 1310. For English majors, ENGL 2010 is a prerequisite for all other literature courses offered through the Department of English. For non-majors, ENGL 1500 is a prerequisite for all 2000-level and non-major literature courses.

Graduate Course Offerings

In general, courses numbered 4000 may also be taken for graduate credit as a 5000 numbered course. See instructor for details. Courses numbered 5000 and 6000 are for graduate students only.

Departmental Honors

To graduate with departmental honors in English, a student must have a 3.75 GPA in the major, and a 3.5 GPA overall.

ENGLISH, BA

EMPHASES WITHIN THE ENGLISH MAJOR

- Elementary/Special Education
- Literature
- Professional/Technical Writing
- Rhetoric and Writing
- Secondary Education

GENERAL REQUIREMENTS

For all emphases, students, including transfers, must complete at least 15 credit hours with the UCCS English department and at least 18 upper-division (3000+ level) credit hours. English majors must complete all required English courses with grades of C- or better.

All English majors are required to submit an assessment determined by emphasis prior to graduation.

All English majors are assigned an advisor within the department; please see details under "Contacts" on the English department website: http://www.uccs.edu/~english/.

All English majors must register for and attend a mandatory English department workshop in their first year at UCCS. The workshop is typically held at the beginning of fall and spring semesters. Please see the English department website for information on how to register for the workshop.

STUDENTS WHO CONTEMPLATE TEACHING

Statements of curricular requirements for a Colorado teaching certificate in English may be obtained from the College of Education. Students planning to teach should also confer with a member of the College of Education faculty about the Teacher Education Program. Since requirements for Education and English make a very tight schedule, students should be fully informed as to both departmental and certification requirements by the beginning of the sophomore year.

Note: Students who wish to apply an online course taken outside UCCS towards their English major must secure written permission from the English department chair or designated advisor.

BA IN ENGLISH WITH ELEMENTARY/SPECIAL EDUCATION PRE-LICENSURE EMPHASIS

Learning Outcomes

- Students demonstrate the ability to write clearly, cogently, and thoughtfully.
- Students demonstrate language control including grammar, mechanics and syntax.
- Students demonstrate awareness of multiple theories of literacy.
- Students demonstrate analysis of texts through close & critical reading using multiple theoretical lenses.
- Students demonstrate the ability to interpret a range of texts representing diversity, various genres and historical contexts.

- Students demonstrate the ability to find appropriate primary and secondary research materials, apply them in writing to support own arguments, and correctly cite sources.

Students wishing to major in English to prepare for careers in elementary/special education take a **minimum of 33 hours of English**, including the following specific requirements:

Course Requirements

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice
- ENGL 3010 - Advanced Rhetoric and Writing
- ENGL 3110 - Advanced Grammar
- ENGL 4810 - Special Topics in the Teaching of Writing: **or**
- ENGL 4830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing
- Complete 6 hours of ENGL elective courses to meet total and upper-division requirements.

Literature Breadth Courses (6 Credit Hours)
Complete two of the following courses, including one British and one American.

Early British Breadth Courses

- ENGL 2510 - British Literature Before 1600
- ENGL 2520 - 17th and 18th Century British Literature
- ENGL 3530 - Early Modern British Literature

Late British Breadth Courses

- ENGL 2530 - Nineteenth-Century British Literature
- ENGL 2540 - British Literature After 1900

Early American Breadth Courses

- ENGL 2360 - Introduction to American Literature I
- ENGL 3330 - Early American Literature Through Romanticism
- ENGL 3340 - American Literature from 1790 to 1860
- ENGL 3350 - American Literature from 1820 to 1900

Late American Breadth Courses

- ENGL 2370 - Introduction to American Literature II
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present

Diversity Course (3 Credit Hours)
Complete one of the following.

- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature
- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 3900 - Topics in Literature
- ENGL 4860 - Special Topics in Rhetoric and Writing

Senior Literature Seminar (3 Credit Hours)
Complete one course from the following list. Must be taken in residence.

- ENGL 4200 The Eighteenth-Century British Novel: Defoe to Austen
- ENGL 4210 The Nineteenth-Century British Novel
- ENGL 4230 Development of the American Novel I
- ENGL 4240 Development of the American Novel II
- ENGL 4250 Contemporary Novel
- ENGL 4300 Studies in American Literature and Culture
- ENGL 4400 Genre Studies
- ENGL 4410 Topics in Contemporary Poetry Studies
- ENGL 4500 Studies in Anglo-Saxon and Medieval Literature
- ENGL 4700 Seminar in Literary Theory
- ENGL 4950 Seminar in Literary Topics
- ENGL 4970 Seminar in Shakespeare Studies
- ENGL 4973 Shakespeare and Sustainability
- ENGL 4980 Seminar in Major Authors

Senior Assessment--Elementary/Special Education

- Complete senior assessment--elementary/special education.

BA IN ENGLISH WITH LITERATURE EMPHASIS

Learning Outcomes

- To be able to interpret a range of literary texts representing cultural diversity, various genres, and historical contexts.
- To be able to analyze literary texts through the skills of close reading, the context of literary histories, and the lenses of literary criticism and theory.
- To be able to write cogent, clear, thoughtful essays that demonstrate the student's control over grammar and mechanics.
- To be able to use electronic and traditional methods of research effectively.

Students wishing to major in English with an emphasis in Literature must take a **minimum of 45 hours of English**, including the following specific requirements:

Course Requirements

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice
- ENGL 3010 - Advanced Rhetoric and Writing

Literature Breadth Courses (12 Credit Hours)

Take one course in each of the following four areas:

Early British Breadth Courses

- ENGL 2510 - British Literature Before 1600
- ENGL 2520 - 17th and 18th Century British Literature
- ENGL 3530 - Early Modern British Literature

Late British Breadth Courses

- ENGL 2530 - Nineteenth-Century British Literature

- ENGL 2540 - British Literature After 1900

Early American Breadth Courses

- ENGL 2360 - Introduction to American Literature I
- ENGL 3330 - Early American Literature Through Romanticism
- ENGL 3340 - American Literature from 1790 to 1860
- ENGL 3350 - American Literature from 1820 to 1900

Late American Breadth Courses

- ENGL 2370 - Introduction to American Literature II
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present

Diversity Course (3 Credit Hours)

Choose one of the following courses:

- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature
- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 3900 - Topics in Literature
- ENGL 4860 - Special Topics in Rhetoric and Writing

Senior Literature Seminar (3 Credit Hours)

Complete one course from the following list. Must be taken in residence.

- ENGL 4200 The Eighteenth-Century British Novel: Defoe to Austen
- ENGL 4210 The Nineteenth-Century British Novel
- ENGL 4230 Development of the American Novel I
- ENGL 4240 Development of the American Novel II
- ENGL 4250 Contemporary Novel
- ENGL 4300 Studies in American Literature and Culture
- ENGL 4400 Genre Studies
- ENGL 4410 Topics in Contemporary Poetry Studies
- ENGL 4500 Studies in Anglo-Saxon and Medieval Literature
- ENGL 4700 Seminar in Literary Theory
- ENGL 4950 Seminar in Literary Topics
- ENGL 4970 Seminar in Shakespeare Studies
- ENGL 4973 Shakespeare and Sustainability
- ENGL 4980 Seminar in Major Authors

Electives (18 Credit Hours)

Complete 6 credit hours from the following categories, and 12 credit hours of any other English courses to fulfill the total hours requirement. One of these courses must be on a topic pre-1800.

Major Authors

- ENGL 2970 - Shakespearean Beginnings
- ENGL 3950 - Chaucer
- ENGL 3970 - Shakespeare I

- ENGL 3980 - Shakespeare II
- ENGL 4970 - Seminar in Shakespeare Studies
- ENGL 4973 - Shakespeare and Sustainability
- ENGL 4980 - Seminar in Major Authors

Theory

- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 4700 - Seminar in Literary Theory

Genre/Movement

- ENGL 2800 - Film and Fiction
- ENGL 3410 - Poetry for the People
- ENGL 4200 - The Eighteenth-Century British Novel: Defoe to Austen
- ENGL 4210 - The Nineteenth-Century British Novel
- ENGL 4230 - Development of the American Novel I
- ENGL 4240 - Development of the American Novel II
- ENGL 4250 - Contemporary Novel
- ENGL 4310 - Harlem Renaissance
- ENGL 4400 - Genre Studies
- ENGL 4500 - Studies in Anglo-Saxon and Medieval Literature

Global

- ENGL 2600 - Literature: The Global Perspective I
- ENGL 2610 - Literature: The Global Perspective II

Senior Assessment-Literature

- Complete the senior assessment-literature.

BA IN ENGLISH WITH PROFESSIONAL AND TECHNICAL WRITING (PTW) EMPHASIS

PTW Outcomes Statements

Research (critical thinking, reading, and writing)
Students will show they can

- Use research methods to gather information
- Evaluate, analyze, navigate and synthesize appropriate primary and secondary sources
- Identify reader/user/viewer expectations
- Interpret findings and articulate results
- Produce appropriate and ethical text and graphics for displaying research data and findings

Practices and processes
Students will show they can

- Conduct user/reader/viewer analysis
- Focus on a defined purpose
- Meet the needs of the readers/users/viewers
- Respond appropriately and ethically to different rhetorical situations

- Understand writing as a collaborative and iterative process of research, discussion, negotiation, writing, and editing
- Manage projects in stages
- Evaluate and use appropriate strategies for production, revision, editing, proofreading, and presenting

Knowledge of conventions and genres
Students will show they can
- Write in multiple genres
- Evaluate ethically how each genre shapes content and usability
- Control such features as tone, syntax, grammar, punctuation, and spelling
- Identify the main features and uses of writing in a specific field
- Document resources as defined by a specific field

Collaborative learning
Students will show they can
- Participate collaboratively with others in the iterative process of research, discussion, negotiation, writing, and editing
- Participate and communicate effectively in a community
- Integrate their own ideas with those from various stakeholders
- Balance the advantages of relying on others with the responsibility of doing their parts

Technological literacy
Students will show they can
- Critically and ethically choose from a variety of technologies in order to address specific rhetorical situations and a range of readers/users/viewers needs
- Engage in a critical perspective of technology, its uses and contexts
- Analyze technology as a physical tool, and as a socially constructed system
- Use various software for writing, editing, and designing

Students wishing to major in English with an emphasis in Professional and Technical Writing (PTW) must take a **minimum of 45 hours in English**, including the following specific requirements:

Course Requirements

PTW majors satisfy the Composition requirement by taking ENGL 1310 and either ENGL 2080 or ENGL 2090. These courses do not count toward the 42 hours of English courses required for the major.

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice
- ENGL 3080 - Advanced Business and Technical Writing
- ENGL 3110 - Advanced Grammar

Literature Breadth Courses (6 Credit Hours)
Take one course in British Literature (early or late), and one course in American Literature (early or late) from the following:

Early British Breadth Courses
- ENGL 2510 - British Literature Before 1600

- ENGL 2520 - 17th and 18th Century British Literature
- ENGL 3530 - Early Modern British Literature

Late British Breadth Courses

- ENGL 2530 - Nineteenth-Century British Literature
- ENGL 2540 - British Literature After 1900

Early American Breadth Courses

- ENGL 2360 - Introduction to American Literature I
- ENGL 3330 - Early American Literature Through Romanticism
- ENGL 3340 - American Literature from 1790 to 1860
- ENGL 3350 - American Literature from 1820 to 1900

Late American Breadth Courses

- ENGL 2370 - Introduction to American Literature II
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present

Diversity Course (3 Credit Hours)

Take one of the following courses.

- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature
- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 3900 - Topics in Literature
- ENGL 4860 - Special Topics in Rhetoric and Writing

Practice Courses (9 Credit Hours)

Take three of the following courses.

- ENGL 3120 - Technical Editing and Style
- ENGL 3140 - Managing Writing Projects in Business and Industry
- ENGL 3150 - Professional Writing Internship
- ENGL 3170 - riverrun Literary and Arts Journal
- ENGL 3750 - Grant and Proposal Writing

Technological Literacy Courses (6 Credit Hours)

Take two of the following courses.

- ENGL 3130 - Web and Print Document Design
- ENGL 3160 - Tools for Technical Writers
- ENGL 3850 - Advanced Topics in Professional Writing

Advanced Practice Courses (6 Credit Hours)

Take two of the following courses.

- ENGL 4060 Diversity Topics in Professional and Technical Writing
- ENGL 4065 Intercultural Professional and Technical Writing
- ENGL 4080 Special Topics in Professional and Technical Writing
- ENGL 4800 Writing Center Theory and Practice **or** ENGL 4810 Special Topics in the Teaching of Writing:
- ENGL 4820 Classical Rhetoric

Senior Portfolio

Students must take the following course. See PTW Director for details.

- ENGL 4090 - Senior PTW Portfolio Seminar

BA IN ENGLISH WITH RHETORIC AND WRITING EMPHASIS

Learning Outcomes

I. Rhetorical Knowledge

- Students identify and name the elements of a given rhetorical situation.
- Students apply rhetorical theories to a wide range of situations for analytical and productive purposes.
- Students evaluate their own or others' rhetorical choices in light of anticipated consequences.
- Students understand how genres shape arguments.

II. Writing Process Knowledge

- Students demonstrate an understanding of the various components of the writing process, including invention, drafting, revision, and editing.
- Students demonstrate knowledge of the peer-review process and the variety of roles possible within it.
- Students demonstrate knowledge of various approaches to the teaching of writing.

III. Craft, Genre, & Editing Knowledge

- Students can compose in a variety of genres.
- Students organize their written texts in ways that are responsive to the rhetorical situation.
- Students show coherence and cohesion in their written discourse.
- Students consider, apply, and control stylistic options (prose style, figurative language, voice, register, tone, word choice, etc.).
- Students recognize and self-edit errors in syntax, grammar, usage, punctuation, mechanics, and • spelling in written discourse.
- Students peer-review each other's work.

IV. Reflective Learning

- Students consciously synthesize and integrate insights from one writing project and course into another.
- Students demonstrate awareness of their own writing process.
- Students can articulate their particular area(s) of interest within rhetoric and writing.

Students wishing to major in English to prepare for careers in Rhetoric and Writing take a **minimum of 42 hours of English**, including the following specific requirements:

Course Requirements

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice
- ENGL 3010 - Advanced Rhetoric and Writing
- ENGL 3110 - Advanced Grammar
- ENGL 4880 - Topics in Public Rhetorics
- Complete 15 credit hours of ENGL elective courses to meet total and upper-division requirements.

Rhetoric and Writing Courses (9 credit hours)
Take three courses from the following:

- ENGL 2820 - Introduction to Rhetoric and Writing Studies
- ENGL 3020 - Topics in Advanced Rhetoric and Writing
- ENGL 3800 - Writing Center Theory and Practice **or**
- ENGL 4800 - Writing Center Theory and Practice
- ENGL 3820 - Rhetoric History and Theory: Contemporary Rhetorics and the Canonical Tradition
- ENGL 4810 - Special Topics in the Teaching of Writing:
- ENGL 4820 - Classical Rhetoric
- ENGL 4830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing
- ENGL 4840 - Practicum for Writing Instructors
- ENGL 4850 - History of the English Language
- ENGL 4860 - Special Topics in Rhetoric and Writing

Diversity Course (3 Credit Hours)
Take one of the following courses (that you have not already taken). ENGL 4860 may be repeated for this requirement with the permission of the department chair.

- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature
- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 3900 - Topics in Literature
- ENGL 4860 - Special Topics in Rhetoric and Writing

Senior Assessment-Rhetoric & Writing

- Complete the Senior Assessment-Rhetoric & Writing.

BA IN ENGLISH WITH SECONDARY EDUCATION EMPHASIS

Students wishing to major in English to prepare for careers as secondary school teachers of English must take a **minimum of 45 hours of English**, including the following specific requirements:

Course Requirements

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice
- ENGL 3010 - Advanced Rhetoric and Writing
- ENGL 3110 - Advanced Grammar
- ENGL 4800 - Writing Center Theory and Practice **or**
- ENGL 4810 - Special Topics in the Teaching of Writing:
- ENGL 4830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing
- ENGL 4850 - History of the English Language
- Complete 3 credit hours of English elective courses to meet total and upper-division requirements.

Rhetoric Course or PTW Course (3 Credit Hours)

Complete one of the following courses:

- ENGL 2820 - Introduction to Rhetoric and Writing Studies
- ENGL 3020 - Topics in Advanced Rhetoric and Writing
- ENGL 3080 - Advanced Business and Technical Writing
- ENGL 3140 - Managing Writing Projects in Business and Industry
- ENGL 3170 - *riverrun* Literary and Arts Journal
- ENGL 3750 - Grant and Proposal Writing
- ENGL 3820 - Rhetoric History and Theory: Contemporary Rhetorics and the Canonical Tradition
- ENGL 4820 - Classical Rhetoric
- ENGL 4860 - Special Topics in Rhetoric and Writing

Literature Breadth Courses (12 Credit Hours)

Take one course from each of the following areas.

Early British Breadth Courses

- ENGL 2510 - British Literature Before 1600
- ENGL 2520 - 17th and 18th Century British Literature
- ENGL 3530 - Early Modern British Literature

Late British Breadth Courses

- ENGL 2530 - Nineteenth-Century British Literature
- ENGL 2540 - British Literature After 1900

Early American Breadth Courses

- ENGL 2360 - Introduction to American Literature I
- ENGL 3330 - Early American Literature Through Romanticism
- ENGL 3340 - American Literature from 1790 to 1860
- ENGL 3350 - American Literature from 1820 to 1900

Late American Breadth Courses

- ENGL 2370 - Introduction to American Literature II
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present

Diversity Course (3 Credit Hours)

Take one of the following courses.

- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature
- ENGL 3650 - Studies in Gender and Sexuality
- ENGL 3900 - Topics in Literature
- ENGL 4860 - Special Topics in Rhetoric and Writing

Senior Literature Seminar (3 Credit Hours)

Complete one course from the following list. Must be taken in residence.

- ENGL 4200 The Eighteenth-Century British Novel: Defoe to Austen
- ENGL 4210 The Nineteenth-Century British Novel
- ENGL 4230 Development of the American Novel I
- ENGL 4240 Development of the American Novel II
- ENGL 4250 Contemporary Novel

- ENGL 4300 Studies in American Literature and Culture
- ENGL 4400 Genre Studies
- ENGL 4410 Topics in Contemporary Poetry Studies
- ENGL 4500 Studies in Anglo-Saxon and Medieval Literature
- ENGL 4700 Seminar in Literary Theory
- ENGL 4950 Seminar in Literary Topics
- ENGL 4970 Seminar in Shakespeare Studies
- ENGL 4973 Shakespeare and Sustainability
- ENGL 4980 Seminar in Major Authors

Senior Assessment-Secondary Education

- Complete senior assessment-Secondary Education.

ENGLISH UNDERGRADUATE CERTIFICATE IN PROFESSIONAL AND TECHNICAL WRITING - USER EXPERIENCE

GENERAL REQUIREMENTS

- The English Undergraduate Certificate in Professional and Technical Writing - User Experience requires 21 credit hours of professional and technical writing courses.
- For information regarding the certificate or the Senior PTW Portfolio Assessment, consult PTW Director, Alex Ilyasova, for details: kilyasov@uccs.edu; (719) 255-4037.

COURSE REQUIREMENTS

- ENGL 2080 Business and Administrative Writing **or** ENGL 2090 Technical Writing and Presentation
- ENGL 3080 - Advanced Business and Technical Writing
- ENGL 3130 - Web and Print Document Design
- ENGL 3160 - Tools for Technical Writers
- ENGL 3860 - User-Experience I: Methods and Research Writing
- ENGL 3865 - User-Experience II: Theory and Management
- ENGL 4090 - Senior PTW Portfolio Seminar

ENGLISH CREATIVE WRITING MINOR

The creative writing minor, as part of the English Department, is a rigorous immersion in the craft of literature and will assist those who wish to pursue careers in writing, editing, and publishing; those who wish to teach creative writing; those who wish to study literature from the vantage point of the writer; and those who wish to augment their academic study with an emphasis on creative writing. The minor sharpens students' writing and editing skills; introduces them to various genres; and helps them to understand the nature, process, and publication of creative writing. Additionally, the creative writing minor provides opportunities for participants to hone analytic, presentational, cognitive, and creative skills related to reading, writing, analyzing, and presenting written texts.

GENERAL REQUIREMENTS

The English Creative Writing minor requires a minimum of 21 credit hours of ENGL coursework, 9 of which must be upper-division (3000+ level). English majors who have declared a Literature emphasis within the major may

complete the minor with 18 credit hours in creative writing (no literature elective). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- ENGL 1800 - Fundamentals of Creative Writing: Multiple Genres

  Complete one introductory genre course.

- ENGL 2030 - Introduction to Creative Writing - Poetry
- ENGL 2040 - Introduction to Creative Nonfiction
- ENGL 2050 - Introduction to Creative Writing - Fiction

  Complete one intermediate genre course (in same genre as the introductory genre course).

- ENGL 3030 - Intermediate Creative Writing - Poetry
- ENGL 3040 - Intermediate Creative Nonfiction
- ENGL 3050 - Intermediate Creative Writing: Fiction

  Complete two elective courses, to include the following, and/or those listed above that were not already taken as primary genre courses.

- ENGL 3060 - Special Topics in Creative Writing

  Complete in genre of emphasis.

- ENGL 4100 - Advanced Creative Writing

  Complete one literature elective course (not required for English Literature majors). The literature elective should come from your primary genre and must be approved by the faculty member who oversees that genre.

- ENGL 2370 - Introduction to American Literature II
- ENGL 2540 - British Literature After 1900
- ENGL 2610 - Literature: The Global Perspective II
- ENGL 2800 - Film and Fiction
- ENGL 3200 - Women Writers and Women's Experience
- ENGL 3320 - Born in the USA: Masterpieces of American Literature
- ENGL 3350 - American Literature from 1820 to 1900
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present
- ENGL 3410 - Poetry for the People
- ENGL 3550 - Native American Literature
- ENGL 3600 - African American Literature

ENGLISH LITERATURE MINOR

GENERAL REQUIREMENTS

The English Literature minor requires a minimum of 21 credit hours of English coursework, 9 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- ENGL 2010 - Introduction to Literary Studies (For English Majors Only)
- ENGL 3000 - Critical Theory: Foundations and Practice

Complete four Literature elective courses. At least one course must be American; at least one course must be British. Choose from:

Literature Breadth Courses (12 Credit Hours)

Early British Breadth Courses

- ENGL 2510 - British Literature Before 1600
- ENGL 2520 - 17th and 18th Century British Literature
- ENGL 3530 - Early Modern British Literature

Late British Breadth Courses

- ENGL 2530 - Nineteenth-Century British Literature
- ENGL 2540 - British Literature After 1900

Early American Breadth Courses

- ENGL 2360 - Introduction to American Literature I
- ENGL 3330 - Early American Literature Through Romanticism
- ENGL 3340 - American Literature from 1790 to 1860
- ENGL 3350 - American Literature from 1820 to 1900

Late American Breadth Courses

- ENGL 2370 - Introduction to American Literature II
- ENGL 3360 - American Literature from 1880 to 1960
- ENGL 3370 - American Literature from 1945 to the Present

Complete one 4000-level literature seminar course.

- ENGL 4200 - The Eighteenth-Century British Novel: Defoe to Austen
- ENGL 4210 - The Nineteenth-Century British Novel
- ENGL 4230 - Development of the American Novel I
- ENGL 4240 - Development of the American Novel II
- ENGL 4250 - Contemporary Novel
- ENGL 4300 - Studies in American Literature and Culture
- ENGL 4310 - Harlem Renaissance
- ENGL 4400 - Genre Studies
- ENGL 4500 - Studies in Anglo-Saxon and Medieval Literature
- ENGL 4950 - Seminar in Literary Topics
- ENGL 4970 - Seminar in Shakespeare Studies
- ENGL 4973 - Shakespeare and Sustainability
- ENGL 4980 - Seminar in Major Authors

ENGLISH RHETORIC AND WRITING MINOR

GENERAL REQUIREMENTS

The English Rhetoric and Writing minor requires a minimum of 21 credit hours of English coursework, at least 9 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- ENGL 3010 - Advanced Rhetoric and Writing
- ENGL 3110 - Advanced Grammar
- ENGL 3800 - Writing Center Theory and Practice **or**
- ENGL 4800 - Writing Center Theory and Practice
- ENGL 4830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing
- ENGL 4860 - Special Topics in Rhetoric and Writing
- Complete two elective upper-division professional/technical writing courses.

ENGLISH PROFESSIONAL AND TECHNICAL WRITING MINOR AND CERTFICATE

The English Professional and Technical Writing (PTW) program provides students with several options.

1. **The Professional and Technical Writing Minor for All Non-English Majors**
   Other students in the College of Letters, Arts and Sciences, and students in the College of Business and the College of Engineering and Applied Sciences may select a minor in Professional and Technical Writing by completing 24 credit hours in professional and technical writing courses. Course requirements for the minor may be found at the bottom of this page.
2. Students may include Professional and Technical Writing as part of a Distributed Studies, BA degree. See that program description and speak to an advisor for details.
3. **The Professional Writing Certificate for Unclassified Students**
   Unclassified students and students with a baccalaureate degree may earn the Certificate in Professional and Writing by completing 24 credit hours in selected professional writing courses. The Program therefore makes available to those already involved in writing for business and industry the opportunity to further develop professional skills important to their careers.
4. **The Professional Writing Emphasis for English Majors**
   English majors may select the Professional and Technical Writing Emphasis. See the English, BA page for complete details.

PTW OUTCOMES STATEMENTS

Research (critical thinking, reading, and writing)
Students will show they can

- Use research methods to gather information
- Evaluate, analyze, navigate and synthesize appropriate primary and secondary sources
- Identify reader/user/viewer expectations
- Interpret findings and articulate results
- Produce appropriate and ethical text and graphics for displaying research data and findings

Practices and processes
Students will show they can

- Conduct user/reader/viewer analysis
- Focus on a defined purpose
- Meet the needs of the readers/users/viewers
- Respond appropriately and ethically to different rhetorical situations
- Understand writing as a collaborative and iterative process of research, discussion, negotiation, writing, and editing
- Manage projects in stages

- Evaluate and use appropriate strategies for production, revision, editing, proofreading, and presenting

Knowledge of conventions and genres
Students will show they can
- Write in multiple genres
- Evaluate ethically how each genre shapes content and usability
- Control such features as tone, syntax, grammar, punctuation, and spelling
- Identify the main features and uses of writing in a specific field
- Document resources as defined by a specific field

Collaborative learning
Students will show they can
- Participate collaboratively with others in the iterative process of research, discussion, negotiation, writing, and editing
- Participate and communicate effectively in a community
- Integrate their own ideas with those from various stakeholders
- Balance the advantages of relying on others with the responsibility of doing their parts

Technological literacy
Students will show they can
- Critically and ethically choose from a variety of technologies in order to address specific rhetorical situations and a range of readers/users/viewers needs
- Engage in a critical perspective of technology, its uses and contexts
- Analyze technology as a physical tool, and as a socially constructed system
- Use various software for writing, editing, and designing

COURSE REQUIREMENTS

Composition/Writing Courses (6 Credit Hours)

- ENGL 2080 Business and Administrative Writing **or** ENGL 2090 Technical Writing and Presentation
- ENGL 3080 Advanced Business and Technical Writing

Practice Courses (6 Credit Hours)
Complete two of the following.
Note: ENGL 3110 is not a required course, but it is a prerequisite for ENGL 3120.
- ENGL 3120 - Technical Editing and Style
- ENGL 3140 - Managing Writing Projects in Business and Industry
- ENGL 3170 - riverrun Literary and Arts Journal
- ENGL 3750 - Grant and Proposal Writing

Technological Literacy Courses (6 Credit Hours)
Complete two of the following.
- ENGL 3130 - Web and Print Document Design
- ENGL 3160 - Tools for Technical Writers
- ENGL 3850 - Advanced Topics in Professional Writing

Advanced Practice Courses (3 Credit Hours)
Choose one of the following:

- ENGL 4060 - Diversity Topics in Professional and Technical Writing
- ENGL 4065 - Intercultural Professional and Technical Writing
- ENGL 4080 - Special Topics in Professional and Technical Writing
- ENGL 4800 - Writing Center Theory and Practice
- ENGL 4810 - Special Topics in the Teaching of Writing:
- ENGL 4820 - Classical Rhetoric

Senior PTW Portfolio Assessment (3 Credit Hours)
Contact PTW Director Alex Ilyasova for details: kilyasova@uccs.edu; 719-255-4037.

- ENGL 4090 - Senior PTW Portfolio Seminar

FILM

FACULTY

- *Professor:* Robert von Dassanowsky (Program Director)
- *Associate Professor:* Teresa Meadows

PROGRAMS OF STUDY

- Film Studies Minor
- Visual and Performing Arts, BA

FILM STUDIES MINOR

The Film Studies minor enriches many academic subjects and majors with its critical and multicultural exploration of cinematic expression.

GENERAL REQUIREMENTS

- 18 credit hours of FILM coursework, 12 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- FILM 1000 - Introduction to Film Studies
- FILM 2000 - Narrative Film

  Complete 12 credit hours of the following FILM electives.

- FILM 3330 - Film, Video and the Avant-Garde
- FILM 3400 - Hollywood's Germany: The German and Austrian Image in American Film
- FILM 3450 - German Film
- FILM 3550 - Hollywood History
- FILM 3690 - Topics in Hispanic Film
- FILM 3700 - Film Scoring and Music Composition

- FILM 3750 - Theory and Practice of Art and Alternative Film
- FILM 3850 - Austrian and Central European Film
- FILM 3900 - Special Topics in Film Studies
- FILM 3950 - Women in Film
- FILM 3990 - European Film - European History
- FILM 4000 - Italian Film
- FILM 4030 - Internship in Film Studies
- FILM 4110 - French Film
- FILM 4250 - Directors in Focus
- FILM 4251 - Hitchcock
- FILM 4252 - Kubrick
- FILM 4253 - Almodovar
- FILM 4254 - Polanski
- FILM 4500 - Film Theory
- FILM 4980 - Film Capstone: Film Studies Practice
- FILM 9400 - Independent Study

GEOGRAPHY AND ENVIRONMENTAL STUDIES

FACULTY

- *Professors:* John Harner, Tom Huber, Curt Holder (Chair), and Emily Skop
- *Professor Emeritus:* Robert Larkin
- *Professor Emerita:* Eve Gruntfest
- *Associate Professors:* David Havlick, Steven Jennings, and Brandon Vogt
- *Assistant Professors:* Cerian Gibbes
- *Senior Instructors:* George Bolling, Carole Huber, and Michael Larkin
- *Instructor:* Eric Billmeyer

PROGRAMS OF STUDY

- Geography and Environmental Studies Minor
- Geography and Environmental Studies, BA
- Applied Geography, MA

ADVISING

For more information, please see the GES department website. For graduate information: follow the MA program links; contact Emily Skop, Graduate Director, at eskop@uccs.edu; or contact Monica Beltran, department assistant, (719) 255-3016, mbeltran@uccs.edu.

GEOGRAPHY AND ENVIRONMENTAL STUDIES, BA

LEARNING OUTCOMES

- Demonstrate an understanding of processes shaping Earth's landforms and environments.

- Recognize how the actions and behaviors of diverse cultures impact the natural environment and affect sustainability.
- Demonstrate an understanding of the methods of analysis used to solve geographic problems and communicate effectively.

DEPARTMENTAL HONORS

The Department of Geography and Environmental Studies offers honors for students who have demonstrated high academic achievement. In order to be considered for departmental honors, a student must:

- Have an overall University of Colorado GPA of 3.0 or better.
- Have a 3.5 or better GPA in GES courses.
- Select a faculty advisor to mentor an honors research project. If the student's GPA is between 3.0 and 3.5, the student's research proposal must be accepted by the majority of GES faculty. If the student's GPA is above 3.5, only the advisor need approve the proposal. Students then pick two other faculty committee members. The committee will give an oral exam on the research project upon completion.
- Enroll in GES 4970 Honors in Geography.

The level of honors will be decided by the committee after the completion of these requirements. Three levels of honors are available: Distinction, High Distinction, and Highest Distinction.

GENERAL REQUIREMENTS

- 41 credit hours of GES coursework, 21 of which must be upper-division (3000+ level).
- All GES courses must be completed with a grade of C- or better.
- The Geography Elementary Education and Special Education Options each require 38 credit hours of GES coursework, 19 of which must be upper-division (3000+ level). Said courses must be completed with a grade of C- or better. Consult the College of Education for more information.

COURSE REQUIREMENTS

- GES 1000 - Environmental Systems: Climate and Vegetation
- GES 1010 - Environmental Systems: Landforms and Soils
- GES 1980 - World Regional Geography
- GES 1990 - Introduction to Human Geography

Directed Elective
Complete one of the following.

- GES 2050 - Digital Earth
- GES 3030 - Introduction to GIS
- GES 3060 - Introduction to Remote Sensing

Upper-Division Electives
Complete 18 credit hours of upper-division (3000+ level) GES coursework.

Geography Summit
Complete one of the following.

- GES 4460 - Field Studies in Geography

- GES 4900 - Geography Summit
- GES 4970 - Honors in Geography
- GES 4990 - Senior Thesis

Senior Exit Exam

- Complete the Geography Senior Exit Exam.

Elementary and Special Education Options

- GES 1000 - Environmental Systems: Climate and Vegetation
- GES 1010 - Environmental Systems: Landforms and Soils
- GES 1980 - World Regional Geography
- GES 1990 - Introduction to Human Geography

  Complete one of the following three courses.

- GES 2050 - Digital Earth
- GES 3030 - Introduction to GIS
- GES 3060 - Introduction to Remote Sensing

  Complete 19 credit hours of upper-division (3000+ level) GES elective courses.
  Complete the Geography Senior Exit Exam.

GEOGRAPHIC INFORMATION SCIENCE UNDERGRADUATE CERTIFICATE

GENERAL REQUIREMENTS

- Individuals seeking the certificate must already be students at the University of Colorado Colorado Springs in any department or any major.
- 26-27 credit hours of coursework.
- All certificate courses must be completed with a grade of C or better.

APPLYING FOR THE UNDERGRADUATE GISCIENCE CERTIFICATE

Students shall complete an application to be submitted to the certificate coordinator. The application will include demographic information (name, phone and email), the courses taken, and grades received.

REQUIRED COURSES

- GES 2050 - Digital Earth
- GES 3030 - Introduction to GIS
- GES 3050 - Introduction to Cartography **or**
- GES 4070 - Geovisualization

  Complete **one** of the following advanced courses. The other two may be taken as elective courses.

- GES 4080 - Advanced Geographic Information Systems (GIS)
- GES 4120 - Internet Geographic Information Systems
- GES 4130 - Introduction to Geospatial Computing

ELECTIVES

Select three courses (11-12 credit hours)

- GES 3060 - Introduction to Remote Sensing
- GES 3100 - Digital Field Mapping with GPS
- GES 4000 - Statistical Analysis in Geography
- GES 4070 - Geovisualization
- GES 4080 - Advanced Geographic Information Systems (GIS)
- GES 4090 - Image Processing
- GES 4120 - Internet Geographic Information Systems
- GES 4130 - Introduction to Geospatial Computing

APPLIED GEOGRAPHY, MA

The Department of Geography and Environmental Studies offers a Master of Arts in Applied Geography. The goal of the program is to provide graduate level education that enables students to address community concerns through applied geographic research. Graduates with an MA in applied geography will have integrative skills that link human activity to natural systems, and that apply a spatial perspective to human and natural processes. Areas of emphasis are:

- Physical systems, including geomorphic, climatic, biologic, and hydrologic processes
- Nature-society relations
- Urban culture and landscape change
- Geographic Information Systems (GIS), remote sensing, and geovisualization

DEPARTMENTAL GOAL

- To provide students with specific scientific and communication skills necessary to be community leaders in their area of expertise.

LEARNING OUTCOMES

- An understanding of and appreciation for the interactions between the human and natural world.
- Skills to synthesize, analyze, and evaluate diverse social and physical information.
- Ability to conceptualize spatial relationships for problem solving.
- Communication skills to clearly present solutions or recommendations.

ADMISSION REQUIREMENTS

The following are minimum standards for admission of students to the MA in applied geography degree program:

- Hold a baccalaureate degree or a master's degree from an accredited college or university, or demonstrate completion of work equivalent to the baccalaureate or master's degree given at this university.
- Have an undergraduate grade point average of 3.0 or better ("A" is equal to 4.0).

APPLICATION PROCESS

- Complete the GRE general test. There is no threshold for acceptance; scores are combined with other criteria to evaluate applications. A minimum combined score for the verbal and quantitative sections of the exam of 1000 is recommended.
- Provide three letters of recommendation.

- Provide two copies of official transcripts from all institutions attended.

PREREQUISITES

All entering graduate students are required to have the kind of knowledge presented in the department's introductory courses. It is the responsibility of the student to obtain this knowledge. Students will work with their advisors to determine the appropriate action needed to fulfill the prerequisites. Students may gain the required knowledge by formally taking the introductory courses listed below, by auditing the courses, by reading the textbooks or by any other means agreed to with the graduate advisor. This knowledge will enhance the student's ability to perform at the level expected in the GES 5010 research seminar. Students are encouraged to have some background in college math, statistics, and computer skills.

- GES 1000 - Environmental Systems: Climate and Vegetation
- GES 1010 - Environmental Systems: Landforms and Soils
- GES 1980 - World Regional Geography
- GES 1990 - Introduction to Human Geography
- GES 2050 - Digital Earth

THESIS OR NON-THESIS

Students may complete either a thesis option or a non-thesis option for the MA in Applied Geography.

Thesis Option
The department strongly encourages students to fulfill the thesis option. It requires 30 credit hours of coursework, to include 6 credit hours of thesis.

Non-Thesis Option
The non-thesis option requires 30 credit hours of coursework, a research paper, and a comprehensive exam.

COURSE REQUIREMENTS

All students must take:

- GES 5770 - History and Nature of Geography during their first fall semester
- GES 5010 - Seminar: Geographic Research during the following spring semester.

GEOGRAPHY AND ENVIRONMENTAL STUDIES MINOR

GENERAL REQUIREMENTS

The Geography and Environmental Studies minor requires a minimum of 18 credit hours of GES coursework, at least 9 of which must be upper-division (3000+ level). Additional hours may be required depending on the Directed Elective chosen. All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- GES 1000 Environmental Systems: Climate and Vegetation **or** GES 1010 Environmental Systems: Landforms and Soils
- GES 1980 World Regional Geography **or** GES 1990 Introduction to Human Geography

Complete one of the following three courses.

- GES 2050 - Digital Earth
- GES 3030 - Introduction to GIS
- GES 3060 - Introduction to Remote Sensing

Complete 6 to 9 credit hours of upper-division (3000+ level) GES elective courses, depending on your choice of elective above.

GEOLOGY

FACULTY

- *Senior Instructor:* George Bolling
- *Instructor:* Eric Billmeyer

GEOLOGY COURSES

Geology courses offer a unique opportunity for students. Credits earned in geology will count toward requirements for a degree in Letters, Arts, and Sciences as electives or toward a Minor in Geology. Selected courses will be offered each semester.

PROGRAM OF STUDY

- Geology Minor

GEOLOGY MINOR

The Geology minor is designed to improve students' understanding of geologic processes and how these processes fit into environmental issues. The program takes advantage of the unique natural setting of Colorado to allow students to deepen and expand their appreciation of nearly two billion years of local geologic history. The emphasis of the minor is the understanding of geologic processes that have shaped Colorado.

GENERAL REQUIREMENTS

The Geology minor requires a minimum of 23 credit hours of GES coursework, 11 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- GEOL 1010 - Physical Geology
- GEOL 1020 - Historical Geology
- GEOL 3410 - Introduction to Paleontology
- GEOL 4310 - Sedimentology and Stratigraphy

Complete 6 to 8 credit hours of the following elective courses.

- GEOL 1530 - Geological Development of Colorado and the West

- GEOL 3050 - Introduction to Petrology
- GEOL 3120 - Structural Geology
- GEOL 3700 - Environmental Geology
- GEOL 4110 - Geologic Field Methods
- GEOL 4360 - Glacial and Periglacial Geology
- GEOL 4660 - Field Study in Geology
- GES 4410 - Resource Management and Conservation
- GEOL 4630 - Principles of Geomorphology **or**
- GES 4310 - Principles of Geomorphology

GERONTOLOGY

FACULTY

- *Director, Gerontology Center:* Professor Sara Honn Qualls

GERONTOLOGY COURSES

Gerontology courses offer students an opportunity to explore the effects of aging on humans and their societies. Credit hours earned in gerontology may count toward the certificate, the minor, or other requirements in Letters, Arts, and Sciences.

For further information about the Gerontology Center or the minor in Gerontology, please contact the Gerontology Center, located at in the Lane Center for Academic Health Sciences at 4863 North Nevada Ave., Colorado Springs, CO 80918. You may also reach us by phone at (719) 255-8005, or by email at geron@uccs.edu.

PROGRAM OF STUDY

- Gerontology Minor

GERONTOLOGY MINOR

A minor in Gerontology may be obtained through the College of Letters, Arts, and Sciences. Offered by the Gerontology Center, this program provides students and practitioners with knowledge and skills necessary for work in the aging field. The minor in Gerontology may be pursued by students enrolled in any undergraduate program, and is listed on the transcript if completed prior to graduation.

LEARNING OUTCOMES

- Students will be able to analyze changes in psychological, social, and biological domains that occur with increased frequency in later life
- Students will be able to analyze the life context of older adults (e.g., health, housing and social services) and identify relevant resources for specific needs
- Students will be able to conduct an interview and analyze the life story of an older adult in the context of historical, developmental and contextual influences on later life

GENERAL REQUIREMENTS

The Gerontology minor requires 18 credit hours of coursework, 9 of which must be upper-division (3000+ level). All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- GRNT 3000 - Introduction to Gerontology
- GRNT 4620 - Sociology of Aging
- GRNT 4630 - Psychology of Aging
- GRNT 4980 - Professional Field Experience in Gerontology
  This experience will be under the direct supervision of experienced personnel in an approved agency or institution dealing with the special concerns of older persons.
- HSCI 2800 - Biomedical Aging: Myths and Realities

  Complete 3 credit hours from the following.

- COMM 2600 - Family Communication
- GES 3730 - Population Geography
- GRNT 2300 - Transitions in Adulthood: Lifecourse Perspectives
- GRNT 3560 - Women and Aging International: Diversity, Challenges, and Contributions
- GRNT 9400 - Independent Study in Gerontology: Undergraduate
- HSCI 4740 - Aging, Physical Activity and Health
- PHIL 3130 - Ethics of Life and Health
- PHIL 3160 - Philosophical Issues in Death and Dying
- PSY 3060 - Psychology and Health
- SOC 4670 - Sociology of Death and Dying
- VAPA 1050 - Visual and Performing Arts Foundation (This course and others that are offered with a focus on aging may be approved by the Gerontology Director.)

HISTORY

FACULTY

- *Professors:* Paul Harvey (Chair), Christopher Hill, and Robert Sackett (Director of Undergraduate Studies)
- *Professors Emeriti:* Norman Bender and Richard Wunderli
- *Professor Emerita:* Harlow Sheidley
- *Associate Professors:* Brian Duvick, Bernice Forrest, Christina Jimenez (Director of Graduate Program), and Carole Woodall
- *Assistant Professors:* Roger Martinez and Yang Wei
- *Senior Instructors:* Barbara Headle and Janet Myers
- *Instructors:* Leah Davis-Witherow and Roy Jo Sartin

PROGRAMS OF STUDY

- History Minor
- History, BA
- History, MA

HISTORY, BA

LEARNING OUTCOMES

- Articulate original arguments using critical analysis and complex reasoning.
- Use, integrate, and discuss primary source evidence effectively in writing and oral discussion, based on an understanding of the methods of historical research and analysis.
- Use, integrate, and discuss secondary sources and historiography effectively in writing and oral discussion, based on an understanding of the methods of historical research and analysis.
- Use, integrate, and discuss methodological, conceptual, and theoretical approaches effectively in writing and oral discussion.
- Demonstrate clarity of thought and critical thinking in the organization, form, framing, and development of arguments.
- Use proper writing mechanisms, appropriate authoritative voice, and active verbs/sentence structures.

GENERAL REQUIREMENTS

- The history major requires 36 credit hours of history coursework, 21 of which must be upper-division (3000+ level); 15 upper-division credit hours must be taken at the Colorado Springs campus.
- The history major education options require 30 credit hours of history coursework, 18 of which must be upper-division (3000+ level).
- Majors may choose any history faculty member as a counselor to advise them on the distribution of their courses.
- All history majors are required to have a grade of C (not C-) or better in their history courses.

DEPARTMENTAL HONORS

The History Department gives Honors at graduation. Students with a grade point average overall of 3.9 and above receive the designation of High Honors, equivalent to Summa Cum Laude; those with a grade point average of 3.7 and above receive the designation of High Honors, or Magna Cum Laude; those with a grade point average of 3.5 or above receive the designation of Honors, or Cum Laude.

DOUBLE MAJORS

Students with a double major (history and another major) must complete 30 credit hours of history courses, meeting the same course and grade requirements as detailed below.

HISTORY, BA

Civilization Courses: 12 credit hours
Complete 6 credit hours chosen from Western and American civilization courses (below), and 6 credit hours chosen from Asian, Latin American, and Middle Eastern civilization courses (below).

Western Civilization

- HIST 1010 The Ancient World
- HIST 1020 Medieval World
- HIST 1030 The Rise of Modern Europe, 1500-1815
- HIST 1040 Modern Europe, 1815-Present

American Civilization

- HIST 1510 U.S.: Birth of a Nation, 1607-1789
- HIST 1520 U.S.: Expansion and Division, 1789-1877
- HIST 1530 U.S.: Emergence of Modern America, 1865-1920
- HIST 1540 U.S.: Recent America, 1918-Present

Asian Civilization

- HIST 1110 Asian History: Southeast Asia
- HIST 1120 Asian History: The Indian Subcontinent
- HIST 1130 Asian History: China
- HIST 1135 Contemporary China
- HIST 1140 Asian History: Japan

Latin American Civilization

- HIST 1400 Latin America to 1810
- HIST 1410 Latin America Since 1810

Middle Eastern Civilization

- HIST 1600 Making of the Modern Middle East I
- HIST 1610 Making of the Modern Middle East II

Global History: 6 credit hours

Complete 6 credit hours chosen from the following courses.

- HIST 3010 Women in Classical Antiquity
- HIST 3120 The Panorama of World Civilizations to 1500
- HIST 3150 Mesopotamian History
- HIST 3160 History of Ancient Egypt
- HIST 3220 Genocide: The Case of the Nazis and Jews
- HIST 3520 History of Latinos in the U.S.
- HIST 3550 Religion and American Culture, 1500 to 2000
- HIST 3560 Modern Mexico
- HIST 3590 Latin American History Through Film
- HIST 3680 Islam and the West: Contacts, Representations, and Approaches
- HIST 3720 From Slavery to Freedom: Slavery and the Afr-Amer Experience in Colonial and Antebellum America
- HIST 3730 Vision and History in Native-American and African-American Narratives
- HIST 3890 History of Colonial India
- HIST 3920 History of the British Empire
- HIST 4030 The Ottoman Empire, 1400-1800
- HIST 4040 Reconsidering the Late Ottoman Empire and Early Turkish Republic, 1800-1938
- HIST 4050 From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- HIST 4060 Middle East Women in Film
- HIST 4130 Baghdad to Burgos: Jews, Christians, & Muslims in the Medieval Mediterranean World (600-1500 C.E.)
- HIST 4140 Women in Medieval Europe
- HIST 4150 Astrolabes, Arms, & Azulejos (Tiles):Medieval Science, Technology, & Material Culture(600-1500 C.E.)
- HIST 4160 A Crossroads of Civilizations: Medieval Spain and North Africa (600-1500 C.E.)
- HIST 4280 Beyond the Pillars of Hercules: The Trans-Atlantic Empires of Spain and Portugal (1450-1750 C.E.)
- HIST 4500 World War Two: A Global History
- HIST 4530 Civil War and Reconstruction, 1850 - 1877

- HIST 4710 Asian American History
- HIST 4730 Early China
- HIST 4740 Modern China
- HIST 4750 Modern Japan
- HIST 4760 Shoguns, Samurai and Sepukku
- HIST 4770 Vietnam Wars
- HIST 4780 History of Modern Southeast Asia
- HIST 4840 Research Seminar: History of India, 1700 - Present
- HIST 4860 Research Seminar: Mexico and U.S. Borderlands
- HIST 4880 Research Seminar: Civil Rights in American History

Electives: 15 credit hours
Complete 15 credit hours of history coursework, 12 of which must be upper division (3000+ level).

Senior Seminar: 3 credit hours

- HIST 4990 - Senior Thesis Seminar: Approaches to the Study of History

HISTORY, BA ELEMENTARY/SPECIAL/SECONDARY EDUCATION OPTION

Civilization Courses: 12 credit hours
Complete 6 credit hours chosen from Western and American civilization courses (below), and 6 credit hours chosen from Asian, Latin American, and Middle Eastern civilization courses (below).

Western Civilization
- HIST 1010 The Ancient World
- HIST 1020 Medieval World
- HIST 1030 The Rise of Modern Europe, 1500-1815
- HIST 1040 Modern Europe, 1815-Present

American Civilization
- HIST 1510 U.S.: Birth of a Nation, 1607-1789
- HIST 1520 U.S.: Expansion and Division, 1789-1877
- HIST 1530 U.S.: Emergence of Modern America, 1865-1920
- HIST 1540 U.S.: Recent America, 1918-Present

Asian Civilization
- HIST 1110 Asian History: Southeast Asia
- HIST 1120 Asian History: The Indian Subcontinent
- HIST 1130 Asian History: China
- HIST 1135 Contemporary China
- HIST 1140 Asian History: Japan

Latin American Civilization
- HIST 1400 Latin America to 1810
- HIST 1410 Latin America Since 1810

Middle Eastern Civilization
- HIST 1600 Making of the Modern Middle East I
- HIST 1610 Making of the Modern Middle East II

Global History: 3 credit hours
Complete 3 credit hours chosen from the following courses.

- HIST 3010 Women in Classical Antiquity
- HIST 3120 The Panorama of World Civilizations to 1500
- HIST 3150 Mesopotamian History
- HIST 3160 History of Ancient Egypt
- HIST 3220 Genocide: The Case of the Nazis and Jews
- HIST 3520 History of Latinos in the U.S.
- HIST 3550 Religion and American Culture, 1500 to 2000
- HIST 3560 Modern Mexico
- HIST 3590 Latin American History Through Film
- HIST 3680 Islam and the West: Contacts, Representations, and Approaches
- HIST 3720 From Slavery to Freedom: Slavery and the Afr-Amer Experience in Colonial and Antebellum America
- HIST 3730 Vision and History in Native-American and African-American Narratives
- HIST 3890 History of Colonial India
- HIST 3920 History of the British Empire
- HIST 4030 The Ottoman Empire, 1400-1800
- HIST 4040 Reconsidering the Late Ottoman Empire and Early Turkish Republic, 1800-1938
- HIST 4050 From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- HIST 4060 Middle East Women in Film
- HIST 4130 Baghdad to Burgos: Jews, Christians, & Muslims in the Medieval Mediterranean World (600-1500 C.E.)
- HIST 4140 Women in Medieval Europe
- HIST 4150 Astrolabes, Arms, & Azulejos (Tiles):Medieval Science, Technology, & Material Culture(600-1500 C.E.)
- HIST 4160 A Crossroads of Civilizations: Medieval Spain and North Africa (600-1500 C.E.)
- HIST 4280 Beyond the Pillars of Hercules: The Trans-Atlantic Empires of Spain and Portugal (1450-1750 C.E.)
- HIST 4500 World War Two: A Global History
- HIST 4530 Civil War and Reconstruction, 1850 - 1877
- HIST 4710 Asian American History
- HIST 4730 Early China
- HIST 4740 Modern China
- HIST 4750 Modern Japan
- HIST 4760 Shoguns, Samurai and Sepukku
- HIST 4770 Vietnam Wars
- HIST 4780 History of Modern Southeast Asia
- HIST 4840 Research Seminar: History of India, 1700 - Present
- HIST 4860 Research Seminar: Mexico and U.S. Borderlands
- HIST 4880 Research Seminar: Civil Rights in American History

Electives: 12 credit hours

Complete 12 credit hours of upper-division (3000+ level) elective history courses.

Senior Seminar: 3 credit hours

- HIST 4990 - Senior Thesis Seminar: Approaches to the Study of History

Auxiliary Requirements (Secondary Education Option Only): 13 credit hours

Secondary Education History, BA students must also complete the following courses.

- ECON 1010 - Introduction to Microeconomics
- ECON 2020 - Introduction to Macroeconomics
- GES 1980 - World Regional Geography **or**

- GES 1990 - Introduction to Human Geography
- PSC 1100 - The American Political System

HISTORY, MA

The UCCS History Department offers a Master's degree (MA) in History. The Department of History processes applications for admission to the program and offers courses required for the MA. The graduate program maintains high standards; it is taught only by full-time faculty with appointments to the University of Colorado Graduate Faculty. Students do not specialize in a regional history. Rather, all graduate students are exposed to a breadth of regions, time periods, and historical approaches through their course of study. Beyond quality of instruction and breadth of exposure, the core strength of the UCCS Master's in History is its rigorous training of graduate students in the process of writing a primary-source-based research paper, grounded in the relevant historiography and theory, which makes an evidence-based argument. All graduate students complete three full research papers, which they defend in an oral examination during their last semester.

Students who complete the MA program at UCCS acquire the essential skills of the historian without having become overly specialized at an early stage in their graduate training. See also Requirements for Advanced Degrees and the general requirements of the Graduate School in this catalog.

LEARNING OUTCOMES AND CORE COMPETENCIES

During their MA studies in particular historical fields of study, graduate students will hone skills, including the ability to:

- Articulate original arguments, critical analyses, and complexity of reasoning in writing and oral discussion.
- Use, integrate, and discuss primary source evidence effectively in writing and oral discussion, based on an understanding of the methods of historical research and analysis.
- Use, integrate, and discuss secondary sources and historiography effectively in writing and oral discussion, based on an understanding of the methods of historical research and analysis.
- Use, integrate, and discuss methodological, conceptual and theoretical approaches effectively in writing and oral discussion.
- Demonstrate clarity of thought and critical thinking in the organization, form, framing, and development of arguments.
- Use proper writing mechanics, appropriate authoritative voice, and active verbs/sentence structures.
- Document sources properly in citations and bibliography.

ADMISSION REQUIREMENTS

Applying to the History MA program is a two-tiered process, addressing requirements both for the Graduate School and for the Department of History. Application forms will also vary depending on whether you are a current UCCS student and/or UCCS alumni, or new to UCCS. The M.A. in History Program reviews applications continuously through the year (rolling deadline). To be considered for entrance into the program, applicants should have their materials submitted ideally a few months before the start of the semester. Applications will continue to be reviewed until two weeks before the official starting date of any given semester. Applications not completed two weeks before any given semester will not be considered for that semester. Please go to the UCCS Graduate

School Admissions website at http://www.uccs.edu/graduateschool/prospective-students/admissions.html for more information on admission tracks.

Writing Sample: For purposes of admission to the History graduate program, a writing sample is required. Writing samples in the range of 10-20 pages which highlight students' research, writing, and analytical skills are ideal. Shorter writing samples will be accepted if necessary.

GENERAL REQUIREMENTS

- 30 credit hours are required for the MA in History degree.
- In history courses, no grade lower than B- will count toward the completion of coursework for the Master's degree. Candidates must maintain a grade point average of 3.0 in their graduate courses, or face departmental probation.
- MA candidates are required to pass an oral exam that covers the coursework that they have completed. The oral examination committee will consist of three professors. Candidates will also present, and defend before the history faculty, a portfolio of three papers (submitted in triplicate) that they have written in research seminars. Candidates may have no more than six credit hours of coursework pending at the time they attempt this examination. The examination, for which a student must register, will be given each semester, including summers, at times agreed upon by candidates and the history faculty.
- The department offers to evaluate the academic progress of graduate students after two semesters of coursework, if they request this review. The purpose is to apprise students of their progress in professional training as historians.

COURSE REQUIREMENTS

All coursework will be taken within the Department of History, with the possible exception of the elective requirement described below. Further exceptions may be granted by the department's graduate faculty and according to Graduate School regulations.

- HIST 6000 - Historiography
- One elective course (3 credit hours)

  The elective course must be: an extra readings seminar, or (with permission of the History Department Graduate Faculty Committee) an upper-division (3000+ level) course from History or another department.

Readings/Research Seminars (21 credit hours)

Seminars in any given field are offered over two consecutive semesters. The first semester in a field is a "readings" seminar (6000 level, 3 credit hours); the second semester is a "research" seminar (7000 level, 4 credit hours). Students may not take the research seminar unless they have completed the corresponding readings seminar. Students must complete the readings and research sequence in at least three historical fields for a total of 21 credit hours.

During the semester-long readings seminar, students explore the history and historiography of a major regional or thematic focus. Readings seminars familiarize students with the relevant primary and secondary literature in each field covered. Students read extensively every week and meet with their professor and colleagues to discuss, clarify, and argue about what they have read, developing their intellectual powers as historians. During the subsequent semester, students enroll in the associated Research seminar where they research and write a 25-

35-page primary-source-based research paper around a central argument, which is grounded in the relevant historiography.

Depending on the rotation of faculty teaching the graduate reading/research sequences, students may select from 2-3 courses offered each semester. Students typically gain an impressive breadth of exposure to diverse historical fields since their three readings/research sequences could be in US History, Latin American History, Asian History, Middle Eastern History, or European History. A strength of the program is that students are given the opportunity to engage in focused readings, research, and writing on their chosen topic (within the field) over the course of two semesters. No course may be taken twice for credit except for the variable special topics courses offered under 6690/7690 Special Topics numbers. Exceptions to the above requirements require the approval of the history department graduate faculty committee.

HIST 6690/HIST 7690: Special Topics in Research/Readings are flexible course numbers for faculty to offer a range of new and experimental courses. Students may enroll in more than one HIST 6690/HIST 7690 seminar.

Any of the seminars detailed below may be offered only once over a period of several years. In order to plan their graduate careers, students should check the history department website to find out when specific historical fields will be taught and who will be offering them.

European History

- HIST 6110 - Readings in Medieval European History
- HIST 7110 - Research in Medieval European History
- HIST 6150 - Readings in the Renaissance and Late Medieval Europe
- HIST 7150 - Research in Renaissance and Late Medieval History
- HIST 6220 - Readings in the Reformation and Counter Reformation
- HIST 7220 - Research in the Reformation and Counter-Reformation
- HIST 6250 - Readings in the Old Regime, 1648 to 1789
- HIST 7250 - Research in the Old Regime, 1648-1789
- HIST 6310 - Readings in the Age of Revolution, 1789 - 1870
- HIST 7310 - Research in the Age of Revolution, 1789-1870
- HIST 6350 - Readings in Modern Europe, 1870 to the Present
- HIST 7350 - Research in Modern Europe, 1870 to Present

United States History

- HIST 6460 - Readings: Religion and Culture in America, 1500 to 20th Century
- HIST 7460 - Research in American Religion
- HIST 6510 - Readings in U.S. History, 1765 - 1815
- HIST 7510 - Research in U.S. History, 1765 - 1815
- HIST 6610 - Readings: United States, 1815 - 1876
- HIST 7610 - Research in U.S. History: 1815 - 1877
- HIST 6630 - Readings in the Civil War/Reconstruction Era
- HIST 7630 - Research in the Civil War and Reconstruction Era
- HIST 6660 - Readings in U.S. History: Emergence of Modern America
- HIST 7660 - Research in U.S. History: The Emergence of Modern America, 1876 - 1918
- HIST 6710 - Readings in U.S. History: The Super Power Era, 1918 - Present
- HIST 7710 - Research in U.S. History: The Super Power Era, 1918 - Present
- HIST 6760 - Readings in the Trans-Mississippi West
- HIST 7760 - Research in the Trans-Mississippi West

Asian History

- HIST 6810 - Readings in the Indian Subcontinent Since 1556
- HIST 7810 - Research in the Indian Subcontinent Since 1556
- HIST 6860 - Readings in the Pacific Rim Since 1600
- HIST 7860 - Research in the Pacific Rim Since 1600

Latin American History

- HIST 6790 - Readings in Latin American History
- HIST 7790 - Research in Latin American History
- HIST 6690 - Special Topics: Readings
- HIST 7690 - Special Topics: Research

  Readings and Research in Latin America: City and Space, and Readings and Research in Modern Mexico, are some of many options available from semester to semester under the 6690/7690 Special Topics number.

Middle Eastern History

- HIST 6750 - Readings in Modern Middle East History
- HIST 7750 - Research in Modern Middle East History

Capstone (3 credit hours)

The capstone course for the MA degree includes preparation for the required final oral examination and presentation/defense of a portfolio of the three research papers.

Refer to the Guide to HIST 9600 located on the History website under the Graduate Program.

- HIST 9600 - Independent Study in History: Graduate

Sample Course Schedule

Below is a sample schedule for a full-time graduate student who will complete the MA degree in five semesters (including one summer) or two years. This is an ideal case, but some students complete the MA in fewer semesters, and others take slightly longer to complete the degree, depending on their other work obligations.

First Year

Fall Semester

- HIST 6000 - Historiography
- Readings in Field #1

Spring Semester

- Research in Field #1
- Readings in Field #2

Second Year

Fall Semester

- Research in Field #2
- Readings in Field #3

Spring Semester

- Research in Field #3
- Elective

Summer Semester

- HIST 9600 - Independent Study in History: Graduate Includes oral exam and portfolio defense

HISTORY MINOR

GENERAL REQUIREMENTS

- The History minor requires 21 credit hours of HIST coursework, 9 of which must be upper division.
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- Complete 6 credit hours in American and/or Western Civilization, chosen from the list below.
- Complete 6 credit hours in Latin American, Asian, and/or Middle Eastern Civilization, chosen from the list below.
- Complete 9 credit hours of upper-division (3000+ level) HIST electives coursework. May be chosen from any courses not already taken from the lists below.

Western Civilization

- HIST 1010 The Ancient World
- HIST 1020 Medieval World
- HIST 1030 The Rise of Modern Europe, 1500-1815
- HIST 1040 Modern Europe, 1815-Present

American Civilization

- HIST 1510 U.S.: Birth of a Nation, 1607-1789
- HIST 1520 U.S.: Expansion and Division, 1789-1877
- HIST 1530 U.S.: Emergence of Modern America, 1865-1920
- HIST 1540 U.S.: Recent America, 1918-Present

Asian Civilization

- HIST 1110 Asian History: Southeast Asia
- HIST 1120 Asian History: The Indian Subcontinent
- HIST 1130 Asian History: China
- HIST 1135 Contemporary China
- HIST 1140 Asian History: Japan

Latin American Civilization

- HIST 1400 Latin America to 1810
- HIST 1410 Latin America Since 1810

Middle Eastern Civilization

- HIST 1600 Making of the Modern Middle East I
- HIST 1610 Making of the Modern Middle East II

HUMANITIES

FACULTY

- *Associate Professor:* Teresa Meadows, Director

All degree-seeking students admitted to the College of Letters, Arts, and Sciences must fulfill three of the nine credit hours of LAS humanities area requirements by taking one core humanities course (three credit hours) under the departmental heading "Humanities" (HUM). Students may take a second core humanities in order to satisfy three additional credit hours of the LAS general education humanities requirement. Humanities courses are upper division and, as such, presume students have senior or junior status.

The core humanities courses are team-taught, writing intensive, multi-disciplinary courses that combine the study of literature, history, art, theatre, film, music history, and philosophy, emphasizing the interaction of these fields with social, political, economic, and scientific/technological events. The focus of a course will be a specific year or topic, some with a traditional and some with a nontraditional influence. The class format may combine lectures, group discussions, presentations, guest panels, field trips, dramatic performances, and musical recitals. Faculty from the various humanities-related departments join together in teaching the courses to provide students a solid overview of humanities disciplines.

HUM course descriptions that appear within this catalog are general; each semester, different, specific topics will be offered. Since different faculty members may teach in different semesters, topics are designed in light of the interests and expertise of those teaching on a given team, in a given semester.

Each of the HUM courses in any given semester's course schedule fulfills the LAS core humanities requirement (3 credit hours) of the general humanities area requirement (9 credit hours). Each of the HUM courses offered in any given semester also satisfies the Navigate and upper-division Writing Intensive requirements in the campus-wide Compass Curriculum.

INTERDEPARTMENTAL STUDIES

FACULTY

- *Professor:* Alexander Soifer
- *Instructor:* Robert Gist

PROGRAM OF STUDY

- Mathematics as Liberal Art Minor

Interdepartmental studies offers a unique opportunity for students to experience courses which cover several disciplines.

Interdepartmental credit hours earned will count toward a degree in Letters, Arts, and Sciences as electives. Students wishing to use ID credit hours in other colleges should consult with the academic advisors of their respective colleges. Selected courses will be offered each semester.

LANGUAGES AND CULTURES

FACULTY

- *Professor:* Robert von Dassanowsky
- *Professors Emeriti:* Douglas McKay and John Miller
- *Professor Emerita:* Inez Dolz-Blackburn
- *Associate Professors:* Edgar Cota-Torres, Fernando Feliu-Moggi, Teresa Meadows (Chair), and Maria
- Sergia Steen

- *Assistant Professor, Attendant Rank:* Donna A. Moraco
- *Senior Instructors:* Andrea Brehm, Suzanne Cook, Carmen Frank, Blanca Glisson, Maria Goni, Rieko
- McAdams, and Maura Rainey
- *Instructors:* Beverly Buchanan and Ida Wilding
- *Senior Instructor Emerita:* Ilse Stratton

The University of Colorado considers the study of languages an essential part of a sound liberal education. Competence in a language other than English not only promotes international understanding and communication, but also increases students' career opportunities in commerce and finance, diplomacy, library science, education, social work, publishing, communication, scientific and technical research, and the arts. It also prepares them for graduate school, which normally requires proficiency in at least one foreign language. Students might consider taking language classes, minoring in a language, or completing the certificate in European Studies as excellent complements to their major.

PROGRAMS OF STUDY

- American Sign Language Minor
- French Minor
- German Minor
- Japanese Language and Culture Minor
- Spanish Minor
- Spanish, BA
- European Studies Certificate

Basic courses are also offered in Arabic, Chinese, Greek (Classic or Koiné), Italian, Latin and Russian. Courses in Greek and Latin satisfy requirements in the Classics minor. Students desiring to major in American Sign Language, French, German and Japanese may do so through a Distributed Studies, BA or by completing requirements for the major in French or German at the Boulder campus, by approval of the appropriate Boulder department.

Language courses at the 1000 and 2000 levels introduce students to essentials of grammar, reading, oral fluency, and aural comprehension, as well as to a general understanding of the cultural context. Courses at the 3000 and 4000 levels are taught almost exclusively in the language and help students develop higher levels of competency and application of all language skills assessed through and practiced in a broad cultural and historic context.

Foreign culture studies courses are designed to give students the opportunity to explore different facets of foreign culture, film, and literature in courses, including on-site experiences.

STUDY ABROAD

The department strongly recommends that all majors and minors include study in a setting where the language of concentration is spoken. Credit earned will normally count toward satisfaction of the major/minor requirements, but the student must see the department chair before enrolling in an external study program to assure full transfer of credit. The Department offers opportunities for study abroad in Spanish, French and German. The Global Engagement office can help explore additional options. Additional options for study abroad are available through the National Student Exchange Program.

ADDITIONAL LANGUAGE COURSES

Arabic

A language of intense historical, cultural and strategic importance in the contemporary world and the official

language of twenty-two countries, Arabic is a strong corollary to studies in the arts, business, diplomacy, literature, history and philosophy.

Chinese (Mandarin)
Chinese is the most widely spoken first language in the world and is the language of one of the world's oldest and richest cultures. The study of the Chinese language opens the way to important fields such as Chinese politics, economy, history or archaeology and complements future careers in business and diplomacy as well as studies in the arts, literature, history, philosophy and others.

Italian
The language of the great literature of the Renaissance, grand opera, and the influential neo-realist cinema, Italian is not only a language of artistic achievement, but one of strong American ethnic heritage and international business.

Greek
Greek has the longest documented history of any Indo-European language. Classical Greek is the language of Homer and the great works of literature and philosophy which are the foundations of modern mathematics, science, and western cultures. Classical Greek is a strong corollary to studies in the arts, sciences, and literature.

Latin
With 50 percent of English vocabulary derived from Latin, it is not surprising to discover that students who have studied Latin score about 150 points more on such standardized verbal tests as the SAT than do students who have not had Latin (Washington Post). Latin is also the basis of the five romance languages (Spanish, French, Italian, Portuguese, and Rumanian) and as such helps students with further language study.

Russian
Russia, expanding in social and economic importance, has a history of great literature and great art. Turgenev, Dostoyevski and Solzhenitsyn as well as the artistic treasures of the Kremlin are revealed through a study of this language.

SPANISH, BA

In the United States, Spanish is fast becoming second to English in usage. A language of practical utility, great literature (*Don Quixote*), and wide applicability (in North, Central, and South America, as well as in Europe), Spanish is a necessary skill for dealing with today's world.

TEACHING OPTION

A degree option is available for elementary, secondary and special education teachers. Please contact Academic Advising for further information.

LEARNING OUTCOMES

- Be able to speak the language well enough to satisfy routine social demands and limited nonspecific, work related tasks
- Be able to comprehend face-to-face speech in standard language spoken at a normal rate with some repetition and rewording by a native speaker not accustomed to dealing with foreigners

- Have sufficient comprehension to read authentic printed material or edited texts and material within a familiar context
- Be able to write routine social correspondence and simple discourse as well as cohesive summaries, resumes, short narratives and descriptions on factual topics in the past, present, and future times
- Possess a broad understanding of the history and civilization of the target culture
- Possess a critical and theoretically-based awareness of the literary and cultural traditions, periods, genres and contexts of the target language

GENERAL REQUIREMENTS

- The Spanish major requires 42 total credit hours: 36 credit hours in Spanish language and literature courses (beyond SPAN 2110), and 6 credit hours in Foreign and Cultural Studies.
- Spanish majors must complete all required Spanish courses with a grade of C or better.

Note: In some cases, these major requirements may result in total credit hours in the major in excess of the Letters, Arts, and Sciences 54-hour subject area requirement. Unless the student successfully petitions the Committee on Academic Progress for a waiver, the major hours exceeding the 54-hour maximum will be in addition to the 120 hours needed to graduate.

COURSE REQUIREMENTS

- SPAN 3000 - Spanish Grammar and Composition
- SPAN 3010 - Advanced Spanish Conversation and Composition
- SPAN 3100 - Literary Analysis
- SPAN 3190 - Introduction to Hispanic Literature I
- SPAN 3200 - Introduction to Hispanic Literature II
- SPAN 3250 - Hispanic Culture Studies
- SPAN 4250 - The Cultural Heritage in Latin America

Complete 9 credit hours of the following Spanish Literature electives.

- SPAN 3370 - The Latin American Essay
- SPAN 3690 - Hispanic Culture Through Film
- SPAN 4110 - Women in Hispanic Literature
- SPAN 4150 - Masterpieces of Spanish Literature
- SPAN 4210 - Hispanic Heritage of Colorado
- SPAN 4280 - Generation of 1898
- SPAN 4360 - Hispanic Short Story
- SPAN 4400 - Topics in Contemporary Literature
- SPAN 4420 - Hispanic/Latino US Literature
- SPAN 4440 - Hispanic, Chicano/a, and Mexican-American Literature
- SPAN 4450 - US Cuban Literature
- SPAN 4460 - Studies in U.S.-Mexico Border Literature
- SPAN 4510 - Contemporary Hispanic American Literature
- SPAN 4610 - Latin American Authors
- SPAN 4620 - Don Quijote I
- SPAN 4650 - Spanish or Latin American or Chicano Authors

- SPAN 4660 - Spanish Authors-Poetry
- SPAN 4970 - Senior Seminar: Spanish

  Complete 6 credit hours of the following courses in Hispanic topics.

- FCS 3230 - Southwestern Culture Studies
- FCS 3360 - U.S. Latina/o Literature
- FCS 3690 - Topics in Hispanic Film
- FCS 4210 - Hispanic Heritage of Colorado
- FCS 4253 - Almodovar
- FCS 4460 - Studies in U.S.-Mexico Border Literature
- COMM 3280 - Intercultural and Global Communication
- GES 3820 - Mexico, Central America, and the Caribbean
- HIST 1400 - Latin America to 1810
- HIST 1410 - Latin America Since 1810
- HIST 3560 - Modern Mexico
- SOC 3230 - The Chicano Community **or**
- WEST 3230 - The Chicano Community

  Complete 3 credit hours of any elected Spanish course. Students entering at the 3000 level may take these credit hours in upper-division grammar/language or Spanish literature.

EUROPEAN STUDIES CERTIFICATE

Students who are pursuing a major in Spanish, a minor in French or German, or any combination of the aforementioned, are eligible to complete the European Studies certificate.

APPLICATION

Students seeking this certificate shall demonstrate their major in Spanish and/or minor in Spanish, French, or German, and in consultation with the co-directors of the certificate, complete an application.

GENERAL REQUIREMENTS

- Completion of a program in at least one European language.
- 15 credits of coursework. 6 credit hours may be double-purposed between major/minor electives and certificate courses.

COURSE REQUIREMENTS

Culture-Based Courses

Complete 6 credit hours in culture-based courses **within** the department, in a language other than their major or minor(s). These courses will be in literature in translation, film, civilization, and/or special topics. They will be taught in English, unless the student has completed a second language or can present proficiency in a second European language. Students with proficiency in two languages should concentrate on offerings outside those languages. Courses may be selected from the following.

- EUST 3000 - Introduction to European/EU Culture

  French, including Francophone cultures

- FR 3240 - French Culture from 1700-1917

- FR 3250 - Contemporary France: Civilization & Culture
- FR 3270 - Francophone Cultures
- FR 3500 - Special Topics in French
- FR 4110 - French Film

German, including Austria and former Habsburg territories

- GER 3180 - German/Austrian Civilization and Culture from 1700-1918
- GER 3190 - 20th and 21st Century German and Austrian Civilization and Culture
- GER 3450 - German Film
- GER 3500 - Special Topics in German/Austrian Studies
- GER 3850 - Austrian and Central European Film

Spanish (as Foreign Culture Studies)

- FCS 3490 - Internship in Foreign Cultures
- FCS 3690 - Topics in Hispanic Film

Italian

- ITAL 3500 - Italian Film

Latin

- LAT 3110 - Classical Literature - Latin **or**
- FCS 3650 - Classical Literature in Translation - Latin

Foreign Culture Studies

- FCS 3890 - Field Studies in Language and Culture
- FCS 3990 - Topics in Foreign Culture

Courses from an Outside Department

Complete 6 credit hours of the following courses.

- AH 2820 - Survey: Renaissance, Baroque, and Rococo Art
- AH 3000 - Topics in Art History (if European topic)
- AH 3790 - Romanesque and Gothic Art
- AH 3840 - Baroque Art
- FILM 3950 - Women in Film (if European topic)
- FILM 3990 - European Film - European History
- FILM 4250 - Directors in Focus (if European topic)
- HIST 1030 - The Rise of Modern Europe, 1500-1815
- HIST 1040 - Modern Europe, 1815-Present
- HIST 3230 - Fascism and the Holocaust
- HIST 3250 - Germans and the Holocaust
- HIST 3350 - Germany, 1763 to 1866
- HIST 3360 - Germany Since 1866
- HIST 3370 - Hitler and German National Socialism
- HIST 3380 - Germany Since 1945
- HIST 3990 - European Film - European History

Capstone

A 3-credit European Studies thesis on a trans- or pan-European topic will be determined in consultation with the co-directors and led by the student's primary language advisor.

AMERICAN SIGN LANGUAGE MINOR

American Sign Language is fast becoming the fourth most used language in the United States and a necessary skill for dealing with today's world. American Sign Language (ASL) is a fully developed language, providing a unique modality-visual and gestural rather than the aural/oral or written skills required by most modern languages. The minor in ASL offers a strong complement to most majors, allowing students to broaden the range of their communicative options in the workplace and the world.

The minor degree program in American Sign Language (ASL) prepares students for secondary certification in schools offering ASL as a "foreign Language" credit in an EC-12 program. A degree option is available for elementary, secondary and special education teachers.

GENERAL REQUIREMENTS

- 18 credit hours in American Sign Language beyond ASL 1020, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

Prerequisites

- ASL 1010 - American Sign Language I
- ASL 1020 - American Sign Language II

COURSE REQUIREMENTS

- ASL 2110 - American Sign Language III
- ASL 2120 - American Sign Language IV
- ASL 3110 - American Sign Language V
- ASL 3190 - Introduction to American Sign Language Literature
- ASL 3590 - Deaf Culture

FRENCH MINOR

As one of the key languages of international diplomatic communication, literary creativity, and artistic achievement, French is a practical and useful language for career, personal and professional travel, and general cultural enrichment.

GENERAL REQUIREMENTS

- 18 credit hours beyond FR 1020 - Beginning French II, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Complete two of the following conversation and composition courses.

- FR 3000 - Advanced French Grammar
- FR 3010 - Advanced Conversation and Composition
- FR 3020 - French Conversation and Composition II
- FR 3050 - Professional French

Complete two of the following literature/culture/film-based courses.

- FR 3110 - Main Currents of French Literature I
- FR 3120 - Main Currents in French Literature II
- FR 3240 - French Culture from 1700-1917
- FR 3250 - Contemporary France: Civilization & Culture
- FR 3270 - Francophone Cultures
- FR 3500 - Special Topics in French
- FR 4110 - French Film

Complete 6 credit hours of elective French courses numbered 2110 and higher.

GERMAN MINOR

An important language closely related to English, German is the tongue of America's third largest trade partner, of much scientific research, and of international diplomacy. It is also the language of music's "3B's" (plus Wagner, Mozart, and Mendelssohn), of Goethe, Marx, Einstein, Kant, and Freud, spoken not only in Germany, but also in Austria and Switzerland. As such, German is a staple of any sound general education, a language that will enhance a career and enrich personal pleasure and travel.

GENERAL REQUIREMENTS

- 18 credit hours beyond GER 1020 - Beginning German II, 9 of which must be upper-division.
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Complete two of the following conversation and composition courses.

- GER 3000 - German Grammar and Composition
- GER 3010 - Advanced Conversation and Composition
- GER 3020 - Advanced Conversation and Composition II
- GER 3050 - Professional German

Complete two of the following literature/culture/film-based courses.

- GER 3130 - 18th Century German Literature
- GER 3140 - 16th and 17th Century German Literature
- GER 3160 - 20th Century German/Austrian Literature
- GER 3170 - 19th Century German/Austrian Literature
- GER 3180 - German/Austrian Civilization and Culture from 1700-1918
- GER 3190 - 20th and 21st Century German and Austrian Civilization and Culture
- GER 3400 - Hollywood's Germany: The German and Austrian Image in American Film
- GER 3450 - German Film
- GER 3500 - Special Topics in German/Austrian Studies
- GER 3850 - Austrian and Central European Film

Complete 6 credit hours of German courses numbered 2110 and higher.

JAPANESE LANGUAGE AND CULTURE MINOR

The minor in Japanese Language and Culture is a minor within the Department of Languages and Cultures which allows a minimum of required elective hours to be fulfilled through coursework in the related departments of Visual and Performing Arts and History.

GENERAL REQUIREMENTS

- 18 credit hours of JPNS coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- JPNS 3000 - Advanced Japanese I
- JPNS 3010 - Advanced Japanese II

Complete at least 12 credit hours, at least 3 of which must be upper-division, from the following.

- AH 3450 - Art of Japan
- HIST 1140 - Asian History: Japan
- HIST 4750 - Modern Japan
- HIST 4760 - Shoguns, Samurai and Sepukku
- JPNS 2110 - Intermediate Japanese I
- JPNS 2120 - Intermediate Japanese II
- JPNS 3200 - Japanese Culture and Civilization

The following courses may be taken toward the 12 credit hour requirement only when covering a Japanese-related topic.

- FCS 3890 - Field Studies in Language and Culture
- FCS 3990 - Topics in Foreign Culture
- FILM 3900 - Special Topics in Film Studies
- THTR 3900 - Special Topics in World Theater

SPANISH MINOR

GENERAL REQUIREMENTS

- 21 credit hours in Spanish courses higher than SPAN 2110, 9 of which must be upper-division.
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- SPAN 3000 - Spanish Grammar and Composition
- SPAN 3010 - Advanced Spanish Conversation and Composition
- SPAN 3100 - Literary Analysis

- SPAN 3190 - Introduction to Hispanic Literature I **or**
- SPAN 3200 - Introduction to Hispanic Literature II
- SPAN 3250 - Hispanic Culture Studies
- SPAN 4250 - The Cultural Heritage in Latin America
- Complete 3 credit hours of elective Spanish coursework. Students entering at the 3000 level may elect to take these 3 credit hours in upper-division grammar/language or literature.

MATHEMATICS

FACULTY

- *Professors:* Gene Abrams, Robert Carlson (Chair), Sarbarish Chakravarty, Greg Morrow, Barbara Prinari, Rinaldo Schinazi, and Yu Zhang
- *Professors Emeriti:* James Daly, Keith Phillips, and Kulumani Rangaswamy
- *Associate Professors:* Radu Cascaval and Zachary Mesyan
- *Assistant Professors:* Oksana Bihun and Greg Oman
- *Senior Instructors:* Shannon Michaux and George Rus
- **INSTRUCTORS:** Meredith Casey and James Parmenter

PROGRAMS OF STUDY

The Department of Mathematics at UCCS offers a wide range of courses, degrees, and programs to meet the needs of a diverse constituency in the Pikes Peak Region. The degree programs include:

- Mathematics Minor
- Statistics Minor
- Mathematics, BS
- Applied Mathematics, MS
- Master of Sciences with Math Emphasis through the Letters, Arts, and Sciences Master of Sciences Degree Program (MSc)
- Applied Science, PhD Math option through the College of Letters, Arts, and Sciences

DEPARTMENTAL HONORS

The UCCS Mathematics Department offers a special honors track to qualified math undergraduate students who are already pursuing a BS in Math degree at UCCS. Admission to the honors track is **by application only**; the application form is available at http://www.uccs.edu/Documents/math/honorsapp.pdf. A letter of recommendation from a mathematics faculty member is required. Students should normally apply no later than the beginning of their first semester of their junior year. Contact the Undergraduate Committee Chair, Dr. Zachary Mesyan, with questions: http://www.uccs.edu/~zmesyan/.

REQUIREMENTS

- Maintain a minimum 3.5 GPA in all Math courses and an overall 3.0 GPA.
- Complete five 4000+ level Math courses with at least a 3.3 GPA in these courses.
- Under the supervision of a faculty advisor, and approved by the Undergraduate Committee, complete a written report based on: an undergraduate research project, a senior project in an advanced course, or a senior thesis.

CENTER FOR EXCELLENCE IN MATHEMATICS

The Center for Excellence in Mathematics, or Math Center, is located in Engineering 233. The center began operation in the fall of 1990 as part of a federally funded Title III initiative known as Project Excel. The Math Center provides drop-in tutoring in mathematics, computer science, physics, statistics, and some engineering courses. In addition, the center provides supplemental instruction, problem sessions, workshops, space for small group study as well as a limited amount of one-on-one tutoring for UCCS students free of charge. The computers in the Math Center have a variety of mathematical and statistical software for student use. See the website for more information: http://www.uccs.edu/~mathcenter/.

MATHEMATICS ACADEMIC POLICIES

Prerequisites
Prerequisites for all 1000-level mathematics courses are directly enforced through the registration and student records systems. In lieu of the prerequisite course, a student may pass the appropriate Math Placement Test for the following courses: MATH 1040, 1050, 1110, 1120, and 1350. For pedagogical and advising purposes, students who take the Math Placement Test are strongly encouraged to do so well before the start of the semester. The Math Placement Test is taken online. See the website for details. For questions about student records, please contact Academic Advising.

Calculator Policy
Calculator usage on exams is limited to a basic scientific calculator with a minimal number of storage registers and no graphing capability.

MATHEMATICS, BS

The Department of Mathematics offers a curriculum leading to the degree of Bachelor of Science in Mathematics. This degree is well-suited for students aiming toward a variety of mathematical careers in industry or secondary education, or planning for graduate education. Modern industrial and scientific enterprises are so dependent on advanced mathematical concepts that mathematicians are needed today by almost all concerns that are engaged in such work.

Foreign languages are encouraged for students interested in research. A maximum of 8 hours of foreign languages may be taken and applied to the approved electives requirements. German, French and Russian are the approved languages.

DEPARTMENTAL GOAL

- Prepare students for employment or graduate study in a subject related to mathematics

LEARNING OUTCOMES

- Be able to apply both theoretical and computational techniques to the solution of mathematical problems
- Be able to comprehend, formulate and produce mathematical proofs
- Be able to communicate correct mathematical content in both written and oral form
- Be able to understand a broad array of interconnected concepts within mathematics

GENERAL REQUIREMENTS

- Completion of at least 47 credit hours in Mathematics
- 31 credit hours of Core Mathematics courses
- 46 credit hours for Teaching option
- A minimum 2.0 in each required mathematics course
- A CU minimum GPA of 2.0
- An Exit Interview with the Mathematics department is required prior to graduation.
- All Mathematics majors are required to meet with a faculty advisor in the Mathematics department during their first year as Mathematics majors. Mathematics students should check the Academic Advising Guides for additional information regarding the degree requirements.

COURSE REQUIREMENTS

Core Courses (31 Credit Hours)
The Mathematics Core courses allow students to become familiar with the different subfields of mathematics before choosing their focus.

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2150 - Discrete Math
- MATH 2350 - Calculus III
- MATH 2650 - Introduction to Computational Mathematics
- MATH 3110 - Theory of Numbers
- MATH 3130 - Introduction to Linear Algebra
- MATH 3400 - Introduction to Differential Equations
- MATH 3410 - Introduction to Analysis
- MATH 3810 - Introduction to Probability and Statistics

Options
Each Mathematics major will choose one of the following options to complete in addition to the Core mathematics courses.

Pure Math Option

- MATH 4040 - Senior Math Seminar
- MATH 4140 - Modern Algebra I
- MATH 4310 - Modern Analysis I
- Complete 9 additional credit hours of elected Mathematics courses numbered 4000 or higher.

4000+ level Course Recommendations
Students interested in pursuing a graduate degree in pure math are advised to take the following courses.

- MATH 4130 - Linear Algebra I
- MATH 4150 - Modern Algebra II
- MATH 4320 - Modern Analysis II

Applied Mathematics Option

- MATH 4040 - Senior Math Seminar
- MATH 4310 - Modern Analysis I
- MATH 4470 - Methods of Applied Mathematics

- MATH 4650 - Numerical Analysis
- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 1160 - Advanced Physics Lab I

Complete one of the following Computer Science course sequences.

- CS 1120 - Computational Thinking with Beginning Programming
- CS 2060 - Programming with C

or

- CS 1150 - Principles of Computer Science
- CS 1450 - Data Structures and Algorithms
- Complete 6 additional credit hours of elected Mathematics courses numbered 4000 or higher.

4000+ level Course Recommendations
Students interested in pursuing a graduate degree in applied mathematics or a career in industry are advised to take at least two of the following courses.

A graduate degree in applied math OR a career in industry:

- MATH 4430 - Ordinary Differential Equations
- MATH 4450 - Complex Variables

A graduate degree in applied science:

- MATH 4130 - Linear Algebra I
- MATH 4320 - Modern Analysis II

A career in industry:

- MATH 3670 - Introduction to Scientific Computation
- MATH 4420 - Optimization
- MATH 4480 - Mathematical Modeling
- MATH 4670 - Scientific Computation I
- MATH 4850 - Stochastic Modeling

Statistics Option

- MATH 4040 - Senior Math Seminar
- MATH 4810 - Mathematical Statistics I
- MATH 4820 - Mathematical Statistics II
- MATH 4850 - Stochastic Modeling
- Complete 6 additional credit hours of elected Mathematics courses numbered 4000 or higher.

4000+ level Course Recommendations
Students interested in pursuing a graduate degree in statistics are advised to take the following courses.

- MATH 4130 - Linear Algebra I
- MATH 4310 - Modern Analysis I
- MATH 4320 - Modern Analysis II

Secondary Teaching Option

- MATH 3210 - Introduction to Geometry
- MATH 3480 - Functions and Modeling

  Complete 9 credit hours of elected Mathematics courses numbered 4000 or higher, including at least one of the following.

- MATH 4140 - Modern Algebra I
- MATH 4310 - Modern Analysis I

  Complete the courses required for the UCCSTeach program.

- UTED 1010 - Step I: Inquiry Approaches to Teaching
- UTED 1020 - Step II: Inquiry-Based Lesson Design
- UTED 2010 - Knowing and Learning in Mathematics and Science
- UTED 3020 - Classroom Interactions
- UTED 4710 - Project-Based Instruction
- UTED 4720 - Reading in the Content Area
- UTED 4730 - Apprentice Teaching UCCS Teach and Seminar
- UTLS 3030 - Perspectives on Science and Math
- PSY 1000 - General Psychology

  Complete one of the following.

- PHIL 1000 - Introduction to Philosophy
- PHIL 1020 - Introduction to Ethics
- PHIL 1120 - Critical Thinking

Flexible

- MATH 4040 - Senior Math Seminar

  Complete 15 additional credit hours of elected Mathematics courses numbered 4000 or higher, including at least one of the following.

- MATH 4130 - Linear Algebra I
- MATH 4140 - Modern Algebra I
- MATH 4310 - Modern Analysis I

APPLIED MATHEMATICS, MS

The Department of Mathematics offers a strong graduate program leading to the Master of Science (MS) in Applied Mathematics. Specific areas of study currently available include probability and statistics, differential equations, applied analysis, algebra, and coding theory.

STUDENT LEARNING OUTCOMES

- Students will understand core graduate mathematics material and students must demonstrate substantial comprehension of Linear Algebra and Analysis, the common core subjects required of all students in the program.
- Competence in written and oral communication is essential for most mathematical careers. Such communication skills are also important in many other aspects of life, therefore students will be able to deliver written and oral presentations demonstrating comprehension of complex mathematical content

and the ability to communicate that complex mathematical content to a broad audience (general department faculty and graduate students).

- The program prepares students for a variety of mathematical careers. The current program has four identified tracks: computational and applied mathematics, education, business and management, and PhD preparation. Students should be prepared for employment requiring mathematical skill and sophistication at the Master's level.
- Students shall develop a more sophisticated view of mathematics than is achieved in the undergraduate program. The opportunity for sophisticated learning comes both in and outside the classroom. Student exposure to mathematical research and advanced applications is an important aspect of this goal.
- Students successfully completing the PhD preparation track should be able to enter quality doctoral programs with a reasonable probability of success.
- Students should have the opportunity to hear research talks in seminars and colloquia, and participate in research projects (this might come through on campus employment, independent study, or thesis work). Students are strongly encouraged to attend our biweekly colloquium.

ADMISSION REQUIREMENTS

The admission criteria include but are NOT limited to the following requirements. Any decision regarding admission is made by the Graduate Committee on an individual basis, after taking into consideration the application material and supporting documents.

- Bachelor's degree in mathematics (or a Bachelor's degree in some other field, with extensive coursework in mathematics), including a course in Real Analysis comparable to the UCCS course MATH 4310 Modern Analysis I.
- A minimum grade point average of 3.0. Under special circumstances, students may be admitted with a lower grade point average (or without a course in analysis) as provisional degree students.

Please refer to the Graduate School admissions requirements.

GRADUATE TEACHING FELLOWSHIPS

A limited number of teaching assistantships are available. For information contact the graduate advisor of the Department of Mathematics. Typically, students requesting assistantships should indicate this three months prior to the application deadline for the intended semester.

APPLIED MATHEMATICS, MS-TRACKS

To respond to the needs of both students and employers, the Mathematics department has organized this degree program into a system of four tracks, which are intended to help students develop their programs of study.

- PhD preparation track
- Applied and computational mathematics track
- Education track
- Business and management track

Detailed information about the tracks may be found on our website. Customized programs of study are also available.

GENERAL REQUIREMENTS

- A 3.0 grade point average in all coursework applied towards the degree.
- All degree courses must be part of an approved plan of study which is developed by the student and approved by the advisor (Chair of the Graduate Committee) within the first semester after being admitted to the program. This plan may be revised at any time with the approval of the advisor. The plan will require students to demonstrate some cohesiveness in the courses chosen, or to demonstrate a clear subject area of concentration.
- Students completing one of the four existing tracks of study will automatically fulfill the requirements for the MS Applied Math degree.
- At least 30 credit hours of approved graduate work, including MATH 5130 Linear Algebra I and MATH 5320 Modern Analysis II. All students must pass the comprehensive examination in Modern Analysis.
- Courses will have graduate rank only they are at the 5000 level or higher and are taught by members of the graduate school faculty.
- A student may complete up to 12 credit hours of appropriate graduate coursework in departments other than the Department of Mathematics, as part of the tracks program. Such courses MUST be PRE-approved by the advisor.
- Students may select a thesis or non-thesis option. Students pursuing the thesis option will replace up to 6 credit hours of courses with a Master's thesis.
- All students must make an oral presentation regarding some aspect of advanced mathematics. For students pursuing the thesis option, the thesis defense will qualify as such a presentation.

The department graduate committee must approve exceptions to these requirements.

COURSE REQUIREMENTS

PhD Preparation Track

- MATH 5130 - Linear Algebra I
- MATH 5150 - Modern Algebra II
- MATH 5320 - Modern Analysis II
- MATH 5330 - Real Analysis I
- MATH 5450 - Complex Variables

Complete the following. (Other 5000-level MATH courses may be substituted with the approval of the graduate advisor).

- MATH 5170 - Rings and Modules I
- MATH 5270 - Algebraic Coding Theory
- MATH 5430 - Ordinary Differential Equations
- MATH 5620 - Complex Analysis II
- MATH 5850 - Stochastic Modeling

Applied Computational Mathematics Track

- MATH 5130 - Linear Algebra I
- MATH 5320 - Modern Analysis II

- MATH 5420 - Optimization
- MATH 5430 - Ordinary Differential Equations
- MATH 5470 - Methods of Applied Mathematics
- MATH 5650 - Numerical Analysis
- MATH 5670 - Scientific Computation I
- MATH 5850 - Stochastic Modeling
- MATH 5900 - Graduate Seminar
- Complete elective MATH courses to fulfill total credit hour and thesis/non-thesis requirements as part of a plan of study created in consultation with the Mathematics Graduate Advisor.

Education Track

- MATH 5130 - Linear Algebra I
- MATH 5210 - Differential Geometry
- MATH 5320 - Modern Analysis II
- MATH 5820 - Mathematical Statistics II

Elective Strategies

After successfully passing the core list of courses above, the student must complete 12 additional graduate credit hours in mathematics. It is important to develop some depth in the areas of algebra, analysis, applied mathematics, geometry or probability. To that end, each student should specialize in two of the following areas by taking at least one course in each of the areas. Elective strategy should be decided with the Mathematics Graduate Advisor.

Algebra

- MATH 5150 - Modern Algebra II
- MATH 5170 - Rings and Modules I
- MATH 5270 - Algebraic Coding Theory

Analysis

- MATH 5330 - Real Analysis I
- MATH 5350 - Applied Functional Analysis
- MATH 5420 - Optimization
- MATH 5430 - Ordinary Differential Equations
- MATH 5450 - Complex Variables
- MATH 5620 - Complex Analysis II

Applied Mathematics and Computing

- MATH 5470 - Methods of Applied Mathematics
- MATH 5480 - Mathematical Modeling
- MATH 5520 - Perturbation Theory in Astrodynamics
- MATH 5650 - Numerical Analysis
- MATH 5840 - Computer Vision

Geometry

- MATH 5210 - Differential Geometry
- MATH 5230 - Fractal Geometry
- MATH 5250 - Introduction to Chaotic Dynamical Systems

Probability and Statistics

- MATH 5830 - Linear Statistical Models
- MATH 5850 - Stochastic Modeling
- MATH 5910 - Theory of Probability I

Business and Management Track

- MATH 5130 - Linear Algebra I
- MATH 5320 - Modern Analysis II
- MATH 5810 - Mathematical Statistics I
- MATH 5820 - Mathematical Statistics II

Complete two of the following Mathematics specialty courses.

- MATH 4480 - Mathematical Modeling
- MATH 5420 - Optimization
- MATH 5430 - Ordinary Differential Equations
- MATH 5650 - Numerical Analysis

Additional required courses for Actuarial or Finance options.

- MATH 5850 - Stochastic Modeling

Complete two of the following.

- ECON 4010 - Advanced Microeconomic Theory
- ECON 4020 - Advanced Macroeconomic Theory
- FNCE 4000 - Advanced Corporate Finance
- FNCE 4100 - Cases and Concepts in Finance

MATHEMATICS MINOR

GENERAL REQUIREMENTS

- 24 credit hours of MATH coursework
- Every course in the minor completed with a grade of C or better
- Student responsible for any prerequisites to required courses

COURSE REQUIREMENTS

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III

Complete one of the following.

- MATH 2150 - Discrete Math
- MATH 3110 - Theory of Numbers
- MATH 3410 - Introduction to Analysis
- MATH 3500 - Graph Theory
- MATH 3510 - Topics in Combinatorial Analysis
- MATH 4140 - Modern Algebra I

- MATH 4210 - Differential Geometry
- MATH 4310 - Modern Analysis I

  Complete 9 credit hours of elective MATH coursework numbered 3100 and higher. These may include courses from the list above not already taken.

STATISTICS MINOR

GENERAL REQUIREMENTS

- Complete 21 credit hours of MATH coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3100 - Statistics for the Sciences
- MATH 3810 - Introduction to Probability and Statistics

  Complete one of the following.

- MATH 4810 - Mathematical Statistics I
- MATH 4820 - Mathematical Statistics II
- MATH 4830 - Linear Statistical Models
- MATH 4850 - Stochastic Modeling

MUSEUM STUDIES AND GALLERY PRACTICE

FACULTY

- *Director:* Suzanne MacAulay

PROGRAMS OF STUDY

- Museum Studies and Gallery Practice Minor
- Visual and Performing Arts - Museum Studies and Gallery Practice, BI™

MUSEUM STUDIES AND GALLERY PRACTICE MINOR

GENERAL REQUIREMENTS

- 18 credit hours of MSGP coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MSGP 2000 - Introduction to Museum Studies and Gallery Management
- MSGP 4030 - Museum Studies and Gallery Management: Internship

- MSGP 4060 - Exhibit Design and Development
- MSGP 4070 - Collections Management

  Complete 6 credit hours of the following MSGP courses (or of approved Art History or VAPA studio courses).

- MSGP 4040 - Gallery Management I
- MSGP 4050 - Gallery Management II
- MSGP 4080 - Museum and Gallery Education
- MSGP 4090 - Museum Administration
- MSGP 4100 - Native American Perspectives on Museums
- MSGP 4200 - Special Topics in Museum Studies and Gallery Management
- MSGP 9400 - Independent Study in Museum Studies and Gallery Management

MUSIC

FACULTY

- *Associate Professor:* Glen Whitehead (Program Director)
- *Assistant Professor:* Jane Rigler
- *Senior Instructor:* Curtis Smith
- *Instructors:* Haleh Abghari and Solveig Olsen
- *Music Program Coordinator:* Colin McAllister

PROGRAMS OF STUDY

- Creative Music Performance Minor
- General Music Minor
- Music Composition and Sound Design Minor
- Music History Minor
- Visual and Performing Arts, BA
- Visual and Performing Arts - Music, BI™

CREATIVE MUSIC PERFORMANCE MINOR

The minor in Creative Music Performance gives students the opportunity to develop their voice or instrument abilities in a guided applied curriculum that integrates music ensemble, private instruction, music history, and technology.

GENERAL REQUIREMENTS

- 21 credit hours of MUS coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I

  Complete 4 credit hours of Private Instruction courses.

- MUS 1600 - Applied Music - Private Instruction
- MUS 2600 - Private Instruction: Advanced

Complete 4 credit hours of the following Ensemble courses.

- MUS 2250 - Jazz and Improvisation Ensemble
- MUS 2300 - Electronic Acoustic Ensemble
- MUS 2310 - VAPA Vocal Ensemble
- MUS 2350 - Vocal Jazz Ensemble
- MUS 2400 - Chamber Music Ensemble

Complete 9 credit hours of the following upper-division courses.

- MUS 3150 - Introduction to Ethnomusicology
- MUS 3200 - Advanced Computer Music Composition
- MUS 3850 - Topics in Music History and Research II
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics

GENERAL MUSIC MINOR

GENERAL REQUIREMENTS

- 19 credit hours of MUS coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I
- MUS 1600 - Applied Music - Private Instruction

Complete 3 credit hours of the following.

- MUS 2150 - The Computer in Music
- MUS 2850 - Topics in Music History and Research I
- MUS 2950 - Introduction to Sound and Audio Recording

Complete 2 credit hours of Ensemble electives from the following.

- MUS 1310 - University Choir
- MUS 2250 - Jazz and Improvisation Ensemble
- MUS 2300 - Electronic Acoustic Ensemble
- MUS 2310 - VAPA Vocal Ensemble
- MUS 2400 - Chamber Music Ensemble

Complete the following upper-division (3000+ level) courses.

- MUS 3200 - Advanced Computer Music Composition
- MUS 3850 - Topics in Music History and Research II
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics

MUSIC COMPOSITION AND SOUND DESIGN MINOR

The minor in Music Composition and Sound Design teaches students about the integration of multimedia and interdisciplinary practices with other art mediums and broader sound art contexts.

GENERAL REQUIREMENTS

- 20 credit hours of MUS coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I
- MUS 2010 - Advanced Music Theory
- MUS 2030 - Sight Singing and Ear Training II
- MUS 2150 - The Computer in Music

Complete 9 credit hours of the following.

- MUS 3200 - Advanced Computer Music Composition
- MUS 3700 - Film Scoring and Music Composition
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices

MUSIC HISTORY MINOR

The minor in Contemporary Music History provides an understanding of the historical roots of contemporary music. Courses cover classical music from the 17th to the 20th centuries, jazz, rock and roll, global ethnomusicology, and the divergent branches of late 20th century experimental forms.

GENERAL REQUIREMENTS

- 18 credit hours of MUS coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- MUS 2050 - Jazz History
- MUS 2100 - Rock and Roll Music
- MUS 2850 - Topics in Music History and Research I
- MUS 3150 - Introduction to Ethnomusicology
- MUS 3850 - Topics in Music History and Research II
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics

ORGANIZATIONAL LEADERSHIP AND PROFESSIONAL DEVELOPMENT

FACULTY

- *Professor:* Major Noble Turner
- *Assistant Professors*: Major Anthony Thies and Major Kelly Leaverton

- *Senior Instructor*: Master Sergeant James Goodin
- *Instructors*: Sergeant First Class James Anderson, Sergeant First Class Marcus Johnson, and Mr. Robert Crawford

PROGRAMS OF STUDY

- Army ROTC Program
- Organizational Leadership and Professional Development Minor available for qualified students.

ARMY ROTC PROGRAM

RESERVE OFFICERS' TRAINING CORPS (ROTC) PROGRAM

The focus of this program is to recruit, develop, and commission college-educated men and women to serve as officers in the United States Army. Participants in the program are commissioned as Second Lieutenants in the Army upon graduation with a bachelor's degree. They will serve in either the active Army or in the Reserve components (Army Reserves or Army National Guard) after commissioning.

The program is centered on teaching the principles of leadership and the 19 attributes and competencies of Army leaders. These principles apply to positions in the military or in civilian careers. All courses of instruction develop leadership and management skills as well as enhance the self-confidence and initiative of each student.

Organizational Leadership and Professional Development is taken in addition to the required courses for each student's major.

ROTC is a four-year program that is divided into two phases: the basic course and the advanced course.

ORGANIZATIONAL LEADERSHIP AND PROFESSIONAL DEVELOPMENT OUTCOMES

- After completing ROTC, 2nd Lieutenants will have demonstrated proficiency in six areas: Live Honorably and Build Trust; Develop, Lead, and Inspire; Demonstrate Intellectual, Military, and Physical Competence; Think Critically and Creatively; Make Sound and Timely Decisions; Communicate and Interact Effectively, and Pursue Excellence and Continue to Grow.
- The student will graduate with a Bachelor's degree, commission as a Second Lieutenant into the United States Army, and commit to serving eight years. The eight years will either be four years in the Active Army and four years in the Individual Ready Reserve or six years in the National Guard/Army Reserve and two years in the Individual Ready Reserve.

THE BASIC COURSE

The focus for these lower division courses (OLPD 1000/2000 courses) is to lay a foundation for more advanced instruction in the skills needed to be a successful leader. Students may participate, even if they do not plan on receiving a commission, in order to gain experience in leadership and management.

This phase is open to all qualified students (generally freshmen and sophomores). Students should be aware that physical training is required for successful course completion.

There is no military obligation for participation in the basic course unless a student is receiving an Army ROTC scholarship.

THE ADVANCED COURSE

The advanced course (OLPD 3000/4000 level courses) is oriented to preparing students (juniors and seniors) who have successfully completed the basic course requirements with the skills and knowledge necessary to be commissioned as a Second Lieutenant in the Army. The focus of the advanced course continues on building leadership skills and abilities.

Students participating in the advanced course have a contractual obligation to complete the program and enter the Army upon graduation.

Students must have a minimum of four semesters remaining in their coursework before graduation to participate in the advanced course and they must be in a full-time status (12 credit hours per semester, including ROTC) during each of those semesters.

ENTRY INTO THE ADVANCED COURSE

Credit for the basic course for entry into the advanced course may be achieved in a number of ways. The normal progression is to successfully complete all four basic classes (OLPD 1010, 1020, 2010 and 2020) with a grade of C or better. Students can also enter the course laterally by receiving credit for one of the following:

- Prior enlisted service in the Army, Air Force, Navy or Marines
- Participation of a minimum of three years in a JROTC program
- At least one year as a service academy Cadet

CADET LEADERSHIP COURSE

Students participating in the advanced course will be required to attend OLPD 3030 Cadet Leadership Course (CLC) which is conducted annually at Fort Knox, Kentucky. This camp is normally attended during the summer between a student's junior and senior year. It is a 29-day event that provides the best possible professional training, development and assessment for all students participating in ROTC before commissioning. The course mission includes continued military training, but the primary focus is to assess each cadet's leadership development and provide feedback to enable continued growth through the Senior year. This course represents the only opportunity in ROTC to gather all qualified students from the 273 colleges and universities across the nation on one "level playing field" for the purposes of making those assessments. Successful completion of CLC is mandatory for commissioning.

SCHOLARSHIP INFORMATION

The Army ROTC Scholarship program provides merit-based financial assistance for the education and training of highly-motivated men and women who desire to pursue careers as commissioned officers in the U.S. Army after graduation with a bachelor's degree. Four-, three- and two-year scholarships are available to qualified candidates. The scholarship pays for school tuition and fees, $1200 annual book allowance, and provides the student with a monthly, tax-free stipend of between $300 and $500 per month for up to ten months per year (depending on academic status). For more information pertaining to scholarships and enrollment eligibility please contact Mr. Don Caughey at (719) 255-3475 or dcaughey@uccs.edu.

COURSE OFFERINGS

Basic Course

- OLPD 1010 - Introduction to the Army and Critical Thinking
- OLPD 1020 - Introduction to the Profession of Arms
- OLPD 2010 - Leadership and Decision Making
- OLPD 2020 - Army Doctrine and Team Development

Advanced Course

- OLPD 3010 - Training Management and the Warfighting Functions
- OLPD 3020 - Applied Leadership in Small Unit Operations
- OLPD 3030 - Cadet Leadership Course (CLC)
- OLPD 4010 - The Army Officer
- OLPD 4020 - Company Grade Leaderships
- OLPD 4980 - Special Studies in Leadership

ORGANIZATIONAL LEADERSHIP AND PROFESSIONAL DEVELOPMENT MINOR

A minor in Organizational Leadership and Professional Development is available for students participating in the Army ROTC Program.

GENERAL REQUIREMENTS

- 18 credit hours of upper-division (3000+ level) coursework.
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- OLPD 3010 - Training Management and the Warfighting Functions
- OLPD 3020 - Applied Leadership in Small Unit Operations
- OLPD 3030 - Cadet Leadership Course (CLC)
- OLPD 4010 - The Army Officer
- OLPD 4020 - Company Grade Leaderships
- OLPD 4980 - Special Studies in Leadership

PHILOSOPHY

FACULTY

- *Professors:* Mary Ann Cutter, Dorothea Olkowski, Raphael Sassower, and Robert Welshon (Chair)
- *Professor Emeritus:* Frederic Bender
- *Associate Professor:* Sonja Tanner
- *Assistant Professors:* Geoffrey Ashton and Jeff Scholes
- *Senior Instructors:* Lorraine Marie Arangno and Patrick Yarnell
- *Instructors:* Erik Hanson, Jennifer Jensen, Joseph Kuzma, and Allison Postell

PROGRAMS OF STUDY

Philosophy teaches analytical and critical thinking, develops oral and written communication skills, and contributes to interdisciplinary understanding. Philosophy as a discipline attempts to answer perennial questions about values, human existence, and the nature of reality. Skills developed in this inquiry help philosophy students to

excel in careers in law, medicine, management, education, government, writing, computer science, psychology, sociology, and ministry, among many others. Philosophy majors consistently score in the top percentiles for all majors on the GRE, LSAT, GMAT, MCAT and other graduate and professional admissions tests.

- Philosophy Minor
- Philosophy, BA
- Philosophy and Political Science Double Major

PHILOSOPHY DOUBLE MAJORS

Adding a philosophy major to one's major in another discipline, thereby creating a double major, is an option for students who wish to obtain a broader perspective in their discipline for post-graduate work. All requirements for the philosophy major apply to double majors. Students may have two different majors in two different colleges or in the same college.

PHILOSOPHY, BA

LEARNING OUTCOMES

- Be able to display capacities for and skills in critical thinking
- Be able to write and orally express clear, logical, and grammatically correct philosophical arguments
- Be able to display detailed knowledge of the current literature or historical background of a philosophical problem
- Be able to demonstrate research skills in locating and using resources and extending inquiry on philosophical questions

GENERAL REQUIREMENTS

- The philosophy major may choose either the general degree, or specialize in one of four optional programs.
- Each degree option requires 30 credit hours of PHIL coursework, 21 of which must be upper-division (3000+ level).
- All courses must be completed with grades of C or better.
- A maximum of 54 credit hours of PHIL coursework can be applied to the degree.

COURSE REQUIREMENTS

- PHIL 1120 - Critical Thinking
- PHIL 4950 - Senior Project

  Complete 24 credit hours of PHIL elective courses to complete total and upper division requirements.

PHILOSOPHY MAJOR OPTIONS

The department offers options in areas of philosophy that focus on particular fields of study. To qualify for an option, the student must fulfill the requirements for the major including at least 30 credit hours of coursework, 12 of which must be in the option area. Satisfaction of an area option will appear on a student's transcript.

Religion and Classics

- PHIL 1050 - Philosophy and Religion
- PHIL 1100 - Introduction to Religion
- PHIL 1300 - Introduction to Philosophies of Asia
- PHIL 3070 - Religion and Sports
- PHIL 3080 - Religion and the Spirit of Capitalism
- PHIL 3100 - World Religions
- PHIL 3110 - Women and Religion
- PHIL 3120 - Greek and Roman Myth
- PHIL 3140 - Women in Classical Antiquity
- PHIL 3160 - Philosophical Issues in Death and Dying
- PHIL 3400 - Holocaust
- PHIL 3480 - Philosophies of India
- PHIL 3490 - Philosophies of China
- PHIL 3500 - Buddhist Philosophy
- PHIL 3510 - Pre-Socratic Philosophy
- PHIL 3520 - Plato
- PHIL 3530 - Hellenistic Philosophy
- PHIL 3540 - Medieval and Renaissance Philosophy
- PHIL 3550 - Aristotle
- PHIL 3600 - Philosophy of Religion
- PHIL 3610 - Jewish Philosophy
- PHIL 3620 - Christian Thought
- PHIL 3630 - Gender and Race in Biblical Literature

Justice and Global Society (International Studies)

- PHIL 1020 - Introduction to Ethics
- PHIL 1040 - The Individual and Society
- PHIL 1150 - What Is Justice?
- PHIL 1310 - A Lab of Her Own: Science and Women
- PHIL 1400 - Introduction to Sustainability and Environmental Ethics
- PHIL 3130 - Ethics of Life and Health
- PHIL 3180 - Practical Ethics
- PHIL 3190 - Ethics
- PHIL 3200 - Politics and the Law
- PHIL 3230 - Gender, Race, and Sexuality
- PHIL 3240 - Images of War and Terrorism
- PHIL 3400 - Holocaust
- PHIL 3480 - Philosophies of India
- PHIL 3490 - Philosophies of China
- PHIL 3500 - Buddhist Philosophy
- PHIL 3560 - Modern Classical Philosophy
- PHIL 3570 - Kant and the Enlightenment
- PHIL 4140 - Philosophy of Nature: Sustainability and Globalization
- PHIL 4250 - Topics in Social Theory
- PHIL 4260 - Philosophy of Law
- PHIL 4550 - Feminism, Sexuality, and Culture

Cognition, Science, Phenomenology, and Linguistics

- PHIL 1120 - Critical Thinking
- PHIL 1310 - A Lab of Her Own: Science and Women
- PHIL 3170 - Theories of Knowledge
- PHIL 3300 - Philosophy of Mind
- PHIL 3330 - Emotion and Cognition
- PHIL 3340 - Love and Hate: Philosophy, Literature, & Cognitive Science
- PHIL 3390 - Philosophy of Psychology
- PHIL 3420 - Symbolic Logic I
- PHIL 3450 - Mathematical Logic
- PHIL 4040 - Phenomenology
- PHIL 4200 - Consciousness
- PHIL 4350 - Analytic Philosophy
- PHIL 4400 - Philosophy of Science
- PHIL 4410 - Philosophy of Biology
- PHIL 4420 - Symbolic Logic II
- PHIL 4440 - Decision and Game Theory
- PHIL 4490 - Philosophy of Language

Culture and Aesthetics: East and West

- PHIL 1040 - The Individual and Society
- PHIL 1050 - Philosophy and Religion
- PHIL 1100 - Introduction to Religion
- PHIL 3100 - World Religions
- PHIL 3110 - Women and Religion
- PHIL 3230 - Gender, Race, and Sexuality
- PHIL 3240 - Images of War and Terrorism
- PHIL 3340 - Love and Hate: Philosophy, Literature, & Cognitive Science
- PHIL 3345 - Philosophy of the Body: Western and Indian Perspectives
- PHIL 3400 - Holocaust
- PHIL 3480 - Philosophies of India
- PHIL 3490 - Philosophies of China
- PHIL 3500 - Buddhist Philosophy
- PHIL 3580 - Hegel, Marx, and Nietzsche
- PHIL 3600 - Philosophy of Religion
- PHIL 3610 - Jewish Philosophy
- PHIL 3620 - Christian Thought
- PHIL 3630 - Gender and Race in Biblical Literature
- PHIL 3700 - Philosophy of Art
- PHIL 3720 - Philosophy of Film
- PHIL 3730 - Philosophy and Literature
- PHIL 4040 - Phenomenology
- PHIL 4060 - Mid 20th Century European Philosophy
- PHIL 4070 - Existentialism
- PHIL 4080 - Postmodernism

- PHIL 4250 - Topics in Social Theory
- PHIL 4550 - Feminism, Sexuality, and Culture

PHILOSOPHY MINOR

GENERAL REQUIREMENTS

- 18 credit hours of PHIL coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- PHIL 1120 - Critical Thinking
- Complete 15 credit hours of PHIL elective courses, at least 9 of which must be upper-division (3000+ level).

PHYSICS AND ENERGY SCIENCE

FACULTY

- *Professors:* James Burkhart (Chair), Robert Camley, Tom Christensen, and Zbigniew Celinski
- *Professor Emeritus:* Richard Blade
- *Associate Professors:* Anatoliy Glushchenko, Marek Grabowski, and Anatoliy Pinchuk
- *Assistant Professors:* Karen Livesey and Kathrin Spendier
- *Senior Instructors:* Robert Gist, Sam Milazzo, and Ramon Tirado
- *Instructor:* Timothy Fal

PROGRAMS OF STUDY

- Energy Science Minor
- Physics Minor
- Physics, BS
- Physics, MSc
- Applied Science, PhD

GRADUATE STUDY

There are several options for graduate studies in physics. Students may obtain a Master of Sciences (MSc). All of the courses are taken at UCCS, and thesis work may be done with a professor or in conjunction with an adjoint professor who is employed in a local solid state, optics, or space industry. For more details on this program please see Physics, MSc.

The PhD in Applied Science is designed to allow the student to emphasize, individually, Physics, Mathematics, or Applied Bioscience. An option to take a cross-disciplinary degree in a combination of the three disciplines is also available. Interested students should contact the chair of the specific program for more updated information. For the cross-disciplinary degree, the academic advisor is the dean of the College of Letters, Arts, and Sciences.

A Doctor of Philosophy (PhD) in physics can be obtained from the University of Colorado Boulder with much of the coursework and the thesis done at UCCS. Each student is evaluated on the basis of his or her experience and academic grades but, in general, will be expected to complete a year of residency at Boulder as well as passing all qualifying, comprehensive, and preliminary exams at Boulder. Application to this program is made to the Boulder Physics Department wit

PHYSICS, BS

LEARNING OUTCOMES

- Students will possess the fundamental physics knowledge that is necessary for admission into a graduate program in physics or related technical fields, such as education, industry, research, and military.
- Students will be able to apply the fundamental ideas and methods of physics and be able to analyze problems using these skills.
- Students will be able to prepare and present several research topics and defend them before peers and faculty.

DEGREE OPTIONS

The Bachelor of Science program in physics is designed to help students attain their professional goals in physics. Four options within the Bachelor of Science program enable students to achieve their particular educational objectives. Courses in each option are chosen to teach the fundamental concepts on which the field is based. The degree options are:

- Traditional Physics: This option is designed for students intending to pursue graduate studies in physics or planning to obtain an industrial position with a traditional physics degree.
- Energy Science: This option will prepare graduates for energy-related careers in industry and government and will provide the student with a strong background in the technical, economic, and instrumentation aspects of all energy resources.
- Solid State Physics: This option is designed for students presently employed by or intending employment in the semiconductor industry. It will provide theoretical foundations and practical experience in solid state physics.
- Secondary Teaching: This option is designed for students wishing to be high school physics teachers.

GENERAL REQUIREMENTS

- 33 credit hours of Physics Core courses
- 27-28 credit hours of Auxiliary Core courses
- Degree Option courses
- All PES courses must be completed with a grade of C or better.
- A maximum of 54 credits in PES will apply toward the degree.

COURSE REQUIREMENTS

Core Courses for Traditional Physics, Solid State Physics, and Energy Science Options

(Secondary Education Physics majors, see Secondary Education Teaching section below.)

PES Core (33 credit hours)

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 1160 - Advanced Physics Lab I
- PES 2130 - General Physics III
- PES 2160 - Advanced Physics Lab II
- PES 3130 - Modern Physics
- PES 3170 - Instrumentation Laboratory I
- PES 3180 - Instrumentation Laboratory II
- PES 3210 - Classical Mechanics I
- PES 3310 - Principles of Electricity and Magnetism
- PES 3410 - Thermodynamics and Statistical Mechanics
- PES 4170 - Optics Lab
- PES 4810 - Senior Physics Seminar

Auxiliary Core (27-28 credit hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III
- MATH 3400 - Introduction to Differential Equations

  Complete one of the following Computer Science courses.

- CS 1070 - Introduction to Programming in Visual Basic for Non-Majors
- CS 1150 - Principles of Computer Science
- CS 2060 - Programming with C
- CS 2080 - Programming with UNIX
- CS 2160 - Computer Organization and Assembly Language Programming

Degree Option Courses

In addition to the above core requirements, students will complete required courses in their chosen degree Option.

Traditional Physics Option (18 credit hours)

- PES 3250 - Mathematical Methods of Physics and Engineering
- PES 3320 - Principles of Electricity and Magnetism II
- PES 4250 - Quantum Mechanics
- PES 4510 - Optics
- Complete one 3100+ MATH course.

  Complete one of the following PES elective courses.

- PES 3060 - Astrophysics
- PES 3650 - Nuclear Physics and Energy Technology
- PES 3950 - Special Topics
- PES 3970 - Special Topics
- PES 4150 - Solid State Laboratory
- PES 4260 - Quantum Mechanics II
- PES 4300 - Celestial Mechanics I
- PES 4460 - Introduction to Solid State Physics I
- PES 4490 - Physics of Thin Films
- PES 4600 - Special and General Relativity
- PES 4720 - Stellar Structure and Evolution
- PES 4850 - Senior Project
- Other elective courses may be substituted with the written approval of the department chair.

Energy Science Option (19 credit hours)

- ECON 1010 - Introduction to Microeconomics
- GEOL 1010 - Physical Geology
- PES 2500 - Sustainable Energy Fundamentals

Complete three of the following technical courses.

- ENSC 3610 - Solar Energy Design
- ENSC 4800 - Photovoltaics **or**
- PES 4800 - Photovoltaics
- GES 3060 - Introduction to Remote Sensing
- GES 3100 - Digital Field Mapping with GPS
- GEOL 3700 - Environmental Geology
- GES 3200 - Practical Meteorology
- GES 4090 - Image Processing
- PES 3320 - Principles of Electricity and Magnetism II
- PES 3650 - Nuclear Physics and Energy Technology
- PES 3670 - Exotic Energy Sources
- Other elective courses may be substituted with the written approval of the department chair.

Solid State Physics Option (20 credit hours)

- PES 3250 - Mathematical Methods of Physics and Engineering
- PES 3320 - Principles of Electricity and Magnetism II
- PES 4150 - Solid State Laboratory
- PES 4250 - Quantum Mechanics
- PES 4460 - Introduction to Solid State Physics I

Complete 6 credit hours of the following technical courses.

- CHEM 4101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy
- CHEM 4111 - Physical Chemistry: Thermodynamics and Kinetics
- CS 3160 - Concepts of Programming Languages
- CS 4600 - Numerical Computing
- CS 4720 - Design and Analysis of Algorithms
- ECE 2210 - Circuit Analysis I

- ECE 3020 - Semiconductor Devices I
- ECE 4020 - Semiconductor Devices II
- MATH 3810 - Introduction to Probability and Statistics
- MATH 4450 - Complex Variables
- MATH 4470 - Methods of Applied Mathematics
- PES 4260 - Quantum Mechanics II
- PES 4480 - Surface and Interface Physics
- PES 4490 - Physics of Thin Films
- Other elective courses may be substituted with the written approval of the department chair.

Secondary Education Teaching Program

The Bachelor of Science in Physics with a secondary education option is designed for students wishing to be high school physics teachers. It requires a minimum of 40 credit hours (24 upper division) in physics. No more than 40 hours in physics may be counted toward the credit hours required for graduation. The following courses or their equivalents are required.

Physics Required Courses (40 credit hours)

- PES 1050 - General Astronomy I
- PES 1060 - General Astronomy II
- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 1160 - Advanced Physics Lab I
- PES 2130 - General Physics III
- PES 2160 - Advanced Physics Lab II
- PES 3130 - Modern Physics
- PES 3170 - Instrumentation Laboratory I
- PES 3180 - Instrumentation Laboratory II
- PES 3210 - Classical Mechanics I
- PES 4810 - Senior Physics Seminar
- Complete 9 credit hours of upper-division (3000+ level) PES elective coursework.

Auxiliary Requirements (20 credit hours)

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- MATH 1350 - Calculus I
- MATH 1360 - Calculus II
- MATH 2350 - Calculus III

UCCS Teach Courses (32 credit hours)

Education courses

- UTED 1010 - Step I: Inquiry Approaches to Teaching
- UTED 1020 - Step II: Inquiry-Based Lesson Design
- UTED 2010 - Knowing and Learning in Mathematics and Science
- UTED 3020 - Classroom Interactions

- UTED 4710 - Project-Based Instruction
- UTED 4720 - Reading in the Content Area
- UTED 4730 - Apprentice Teaching UCCS Teach and Seminar

Letters, Arts, and Sciences courses

- UTLS 3030 - Perspectives on Science and Math
- UTLS 3040 - Science Research Methods (UTLS 3040 also satisfies the statistics portion of the Reasoning Skills Requirement in LAS)

LAS General Education Courses

Humanities Area Requirement (9 credit hours)

- HUM 3990 - Special Topics in Humanities

Complete one of the following Philosophy courses.

- PHIL 1000 - Introduction to Philosophy
- PHIL 1020 - Introduction to Ethics
- PHIL 1120 - Critical Thinking
- Complete one elective course from the LAS General Humanities list.

Natural Science Area Requirement (14 credit hours)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- GEOL 1010 - Physical Geology

Social Science Area Requirement (9 credit hours)

- PSY 1000 - General Psychology
- Complete 6 credit hours of courses from approved LAS Social Science list.

Composition Requirement (6 credit hours)

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- PORT 3000 - Writing Portfolio Assessment

Reasoning Skills Requirement (4 credit hours)

Note: MATH 1350 is part of the Other Requirements for Secondary Science Certification, and UTLS 3040 is a required Education course.

- MATH 1350 - Calculus I
- UTLS 3040 - Science Research Methods

PHYSICS, MSC

ADMISSION REQUIREMENTS

Admission requirements into the MSc program are consistent with those specified by the UCCS Graduate School. See the Physics graduate program web page at http://www.uccs.edu/physics/current_students/programs/masters_program.html. Admission requirements of applicants are as follows:

- Submit two complete official transcripts of all previous graduate and undergraduate work
- Submit three letters of recommendation
- Make application through UCCS Admissions online form (http://www.uccs.edu/graduateschool/prospective-students/admissions.html).
- Deadlines: July 1 for fall semester, December 1 for spring semester, May 1st for summer semester.

ADMISSION CRITERIA

- Applicants with a BA or BS in physics or in a related area, such as chemistry, computer science, electrical engineering or mathematics, are natural candidates for graduate study in physics
- A BS or BA degree from a college or university of recognized standing, or work equivalent to that required for such a degree and equivalent to the degree given at this university
- Considerable coursework in physics
- Sufficient mathematical background, i.e. at least two semesters of mathematics beyond the normal calculus sequence, such as differential equations and mathematical methods of physics
- Promise of ability to pursue advanced study and research
- Undergraduate grade point average of at least 3.0 on a 4.0 scale

Students with an undergraduate grade point average of less than 3.0 but at or above 2.5, or students with an inadequate background, may be allowed into the program provisionally. This decision would be made by the UCCS Physics Graduate Student Committee. Provisional status would subsequently be removed and a student given regular standing after completion of nine hours of graduate courses with a 3.0 average (or better).

TRANSFER STUDENT REQUIREMENT

Students who are transferring from other physics graduate programs must meet the minimum standards outlined above and have a 3.0 average (or better) in all graduate work done previously. Full credit, up to nine hours (normally one semester of full-time coursework), will be given for coursework done previously, assuming the prior work was done at accredited institutions with approved programs. Course equivalency will be decided by the UCCS Physics Graduate Student Committee after interviewing the student and comparing textbooks, class notes, or any other helpful documentation.

DEGREE REQUIREMENTS

- 30 credit hours of coursework.
- Regular degree students must maintain at least a 3.0 grade point average each semester or summer term for all courses taken, whether or not they are to be applied toward the advanced degree intended. Students who fail to maintain this standard of performance will be subject to suspension from the Graduate School.
- The Master's Comprehensive Exam is an exit oral exam that must be passed by all students. Students electing the thesis option may substitute oral defenses of their theses. The committees for exit exams will consist of three members of the graduate faculty, one of whom is the student's advisor. The other two members will typically be from the physics department, but one may be selected from a related discipline such as electrical engineering, mathematics, computer science or chemistry.

DEGREE OPTIONS

Thesis and Non-Thesis Options

- Thesis: the student completes 30 credit hours, 6 of which are thesis work.
- Non-thesis: the student completes 30 credit hours of approved courses.

Concentration Areas
In order to design a more specialized degree, students may concentrate their elective courses in areas outside of physics. Concentration areas could include space studies, electrical engineering, mechanical engineering, geography, computer science, applied mathematics or other graduate disciplines. These concentration areas might be appropriate for students who have very well-defined career objectives which require a combination of physics with another discipline. Students should consult with the Physics graduate program advisor to establish a course sequence for the MSc degree.

Approved Graduate courses include:

- CS 5600 - Numerical Computing
- ECE 5020 - Semiconductor Devices II
- ECE 5030 - Advanced Semiconductor Device Modeling
- ECE 5050 - Microelectronics IC Fabrication Laboratory
- ECE 5070 - Electronic Property of Materials
- MAE 5410 - Astrodynamics
- MAE 5091 - Space Environment
- MATH 5450 - Complex Variables **or**
- MATH 5620 - Complex Analysis II
- PHYS 5030 - Mathematical Methods in Physics
- PHYS 5150 - Solid State Laboratory
- PHYS 5200 - Computational Physics
- PHYS 5410 - Statistical Mechanics
- PHYS 5460 - Introduction to Solid State Physics I
- PHYS 5490 - Physics of Thin Films
- PHYS 5510 - Modern Optics
- PHYS 6210 - Theoretical Mechanics
- PHYS 6250 - Introduction to Quantum Mechanics
- PHYS 6260 - Quantum Mechanics II
- PHYS 6310 - Electromagnetic Theory I
- PHYS 6320 - Electromagnetic Theory II
- PHYS 6900 - Theory of the Solid State I
- PHYS 6910 - Theory of the Solid State II
- PHYS 6950 - Special Topics in Physics
- Other courses may be substituted with the written approval of the graduate program advisor.

ENERGY SCIENCE MINOR

The energy science minor is designed to help prepare students for careers in energy fields. For students majoring in Physics, there is an energy science option. Please see Physics, BS for information.

GENERAL REQUIREMENTS

- 18 credit hours of ENSC/PES coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

Cross-lists of ENSC courses given below (including GES and PES courses) will also satisfy these requirements.

- ENSC 1500 - Introduction to Energy Science I **or**
- ENSC 1510 - Introduction to Energy Science II
- ENSC 1600 - Introduction to Solar Energy
- ENSC 1620 - Solar Energy Laboratory
- ENSC 2500 - Sustainable Energy Fundamentals

  Complete 9 credit hours of the following upper-division courses.

- ENSC 3200 - Practical Meteorology
- ENSC 3610 - Solar Energy Design
- ENSC 3650 - Nuclear Energy
- ENSC 3670 - Exotic Energy Sources
- ENSC 4060 - Introduction to Remote Sensing
- ENSC 4090 - Image Processing
- GES 3030 - Introduction to GIS
- GES 3250 - The Geography of Climate Change
- GES 4800 - Sustainability Seminar
- PES 3130 - Modern Physics
- PES 3170 - Instrumentation Laboratory I
- PES 3180 - Instrumentation Laboratory II
- PES 3410 - Thermodynamics and Statistical Mechanics
- PES 3650 - Nuclear Physics and Energy Technology

PHYSICS MINOR

GENERAL REQUIREMENTS

- 20 credit hours of PES coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- PES 1110 - General Physics I - Calculus Based
- PES 1120 - General Physics II
- PES 2130 - General Physics III
- PES 3130 - Modern Physics

  Complete 6 credit hours of upper-division (3000+ level) PES elective courses.

POLITICAL SCIENCE

FACULTY

- *Professors:* Joshua Dunn (Chair) and C. David Moon
- *Professor Emeritus:* James Null
- *Assistant Professors:* Sara Hagedorn, Inhan Kim, Steven Pittz, and Joseph Postell
- *Senior Instructor:* Leonard Riley
- *Instructor:* Mary Lou Makepeace

PROGRAMS OF STUDY

- Political Economy Minor
- Political Science Minor
- Political Science, BA
- Philosophy and Political Science Double Major

POLITICAL SCIENCE, BA

The Political Science BA has a general degree track, and three tracks representing important sub-fields of political science: American Politics/Public Law, Global Politics, and Public Administration. All four tracks are designed to prepare students for professional careers in the public or private sector, or graduate or professional study.

Federal, state and local governments are important employers of political science graduates. In the private sector, including nonprofits, the increasing interaction with government creates a growing demand for graduates with an understanding of political systems, domestically and internationally. Political Science, Law, and Public Administration are common graduate fields of study for our graduates.

LEARNING OUTCOMES

- **Students will demonstrate basic knowledge and understanding of the content materials relative to their studies in Political Science.** More specifically, students will use course content to: identify, describe, analyze, and evaluate major events, trends, peoples, groups, cultures, ideas, and institutions.
- **Conduct scholarly research in Political Science.** More specifically, students will be able to: (1) demonstrate the ability to locate and utilize scholarly materials through library research and archival research, e.g. data sets, scholarly journal articles, academic publications; (2) identify primary sources, theories, opinion polls, policy trends, and determine their perspectives; (3) discover sources that demonstrate valuable historical and current trends.
- **Apply knowledge of political processes and political methodology.** In particular, students will be able to: demonstrate the ability to analyze scholarly work, separate fact from opinion, recognize events, issues, or concepts being presented, acknowledge the historical development of issues, evaluate proposed arguments and supporting evidence; (2) associate political developments across different levels of analysis; (3) recognize political patterns and apply this knowledge to logically anticipate political outcomes.
- **Communicate an understanding of political outcomes, processes, and methodology.** More specifically, students will be able to: (1) communicate an understanding of the program's content both orally

and in written work in their own words, (2) construct arguments and analysis of political events and outcomes.

DEPARTMENTAL HONORS

The Department of Political Science offers honors for students who have demonstrated high academic achievement. In order to be awarded departmental honors, a student must:

- Have an overall CU GPA of 3.0 or higher.
- Have a 3.5 or higher in political science courses.
- Submit a major research paper prepared for any upper division political science course to a member of the faculty of the department. The paper will be read by at least two of the department faculty and if the faculty deems the paper of sufficient merit, the student will be awarded honors.

The level of honors is dependent on completion of these requirements and the level of the departmental GPA. Students who meet these requirements and have a political science GPA of between 3.5 and 3.69 will received Distinction, those whose political science GPA is between 3.7 and 3.89 are eligible for High Distinction, and those with a political science GPA equal to 3.9 or above are eligible for Highest Distinction.

INTERNSHIPS

The department encourages all students to consider enrolling for an internship during their tenure at the university. Internships provide students hands-on experience in the public sector, giving students a greater appreciation for the complexity of politics and policy making and of the legal system.

The department places students in three kinds of internships:

1. Pre-law (PSC 9480): up to 3 credit hours. Interested students should see Professor Dunn.
2. Legislative, with U.S. or Colorado legislators (PSC 3480). Interested students should see Professor Postell.
3. Public agency internships in governmental or nonprofit agencies (PSC 3980): up to 6 credit hours. Interested students should see Professor Postell.

GENERAL REQUIREMENTS

- 36 credit hours in the discipline, 21 of which must be upper-division (3000+ level). 30 credit hours must be completed with a grade of C or better.
- Students should plan to complete all required lower division courses in their chosen track prior to taking upper-division courses.
- All students must take an exit exam and complete a portfolio before graduation.

COURSE REQUIREMENTS

Political Science General Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory

- PSC 3500 Introduction to Political Inquiry

Complete one course from each of the following lists.

American Political Institutions and Behavior Courses

- PSC 2100 Politics and Policy in State and Local Communities
- PSC 3030 Political Parties
- PSC 3050 Race and Ethnicity in American Politics
- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3480 Legislative Internship
- PSC 4020 The American Congress
- PSC 4040 Political Interest Groups
- PSC 4080 US Electoral Process
- PSC 4390 The Presidency
- PSC 4470 Constitutional Law
- PSC 4480 Civil Rights and Liberties

Global Politics Courses

- PSC 2090 Political Conflict
- PSC 3110 Emerging Nations
- PSC 4140 European Politics
- PSC 4180 Gender in International Politics
- PSC 4210 International Politics
- PSC 4220 Comparative Politics
- PSC 4230 The United States in World Politics
- PSC 4240 Russian Politics
- PSC 4260 International Organization
- PSC 4270 Latin America in World Politics
- PSC 4280 International Political Economy
- PSC 4290 International Environmental Politics
- PSC 4530 Model United Nations
- PSC 4560 The Arab-Israeli Conflict
- PSC 4570 Middle Eastern Politics
- PSC 4580 African Politics
- PSC 4590 Globalization
- PSC 4600 The Politics of Terrorism

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration

- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete one of the following Capstone Courses.

- PSC 4020 The American Congress
- PSC 4210 International Politics
- PSC 4470 Constitutional Law

Complete three PSC elective courses to meet total and upper-division credit hour requirements.

American Politics/Public Law Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4470 Constitutional Law

Complete three courses from the following lists.

American Political Institutions and Behavior Courses

- PSC 2100 Politics and Policy in State and Local Communities
- PSC 3030 Political Parties
- PSC 3050 Race and Ethnicity in American Politics
- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3480 Legislative Internship
- PSC 4020 The American Congress
- PSC 4040 Political Interest Groups
- PSC 4080 US Electoral Process
- PSC 4390 The Presidency
- PSC 4470 Constitutional Law
- PSC 4480 Civil Rights and Liberties

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics

- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete three PSC elective courses to meet total and upper-division credit hour requirements.

Global Politics Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4210 International Politics
- PSC 4220 Comparative Politics

Complete three courses from the following list.

Global Politics Courses

- PSC 2090 Political Conflict
- PSC 3110 Emerging Nations
- PSC 4140 European Politics
- PSC 4180 Gender in International Politics
- PSC 4210 International Politics
- PSC 4220 Comparative Politics
- PSC 4230 The United States in World Politics
- PSC 4240 Russian Politics
- PSC 4260 International Organization
- PSC 4270 Latin America in World Politics
- PSC 4280 International Political Economy
- PSC 4290 International Environmental Politics
- PSC 4530 Model United Nations
- PSC 4560 The Arab-Israeli Conflict
- PSC 4570 Middle Eastern Politics
- PSC 4580 African Politics
- PSC 4590 Globalization
- PSC 4600 The Politics of Terrorism

Complete two elective PSC courses to meet total and upper-division credit hour requirements.

Public Administration Track

- PSC 1100 The American Political System
- PSC 2070 Introduction to International Relations **or** PSC 2450 American Political Thought
- PSC 3420 Political Theory
- PSC 3500 Introduction to Political Inquiry
- PSC 4320 Public Administration
- PSC 4460 Administrative Law

Complete three courses from the following list.

Public Administration, Policy and Law Courses

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

Complete one of the following Capstone courses.

- PSC 4020 The American Congress
- PSC 4470 Constitutional Law

Complete two PSC elective courses to meet total and upper-division credit hour requirements.

POLITICAL SCIENCE MINOR

GENERAL REQUIREMENTS

- 8 credit hours of PSC coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.
- Students choose one of the minor tracks detailed below.

COURSE REQUIREMENTS

General Political Science Track

- PSC 1010 - Introduction to Global Politics
- PSC 1100 - The American Political System

- 12 credit hours of PSC elective courses, at least 9 of which must be upper-division (3000+ level).

American Politics Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- One PSC elective course

Complete three of the following American Politics/Public Law courses.

- PSC 2100 - Politics and Policy in State and Local Communities
- PSC 3030 - Political Parties
- PSC 3050 - Race and Ethnicity in American Politics
- PSC 3430 - Law and Literature
- PSC 3450 - Modern American Political Thought
- PSC 3480 - Legislative Internship
- PSC 3980 - Internship: Public Administration
- PSC 4020 - The American Congress
- PSC 4040 - Political Interest Groups
- PSC 4060 - State Political Systems
- PSC 4070 - Urban Politics
- PSC 4080 - US Electoral Process
- PSC 4320 - Public Administration
- PSC 4350 - Environmental Policies and Administration
- PSC 4390 - The Presidency
- PSC 4460 - Administrative Law
- PSC 4470 - Constitutional Law
- PSC 4480 - Civil Rights and Liberties
- PSC 4490 - The Judicial System
- PSC 4510 - Defendant's Constitutional Rights
- PSC 4540 - Land Use Law
- PSC 4550 - Public School Law
- PSC 9480 - Prelaw Internship

Global Politics Track

- PSC 1010 Introduction to Global Politics
- PSC 1100 The American Political System
- One PSC elective course

Complete three of the following Global Politics courses.

- PSC 2090 Political Conflict
- PSC 3110 Emerging Nations
- PSC 4140 European Politics
- PSC 4180 Gender in International Politics
- PSC 4210 International Politics
- PSC 4220 Comparative Politics
- PSC 4230 The United States in World Politics
- PSC 4240 Russian Politics
- PSC 4260 International Organization

- PSC 4270 Latin America in World Politics
- PSC 4280 International Political Economy
- PSC 4290 International Environmental Politics
- PSC 4530 Model United Nations
- PSC 4560 The Arab-Israeli Conflict
- PSC 4570 Middle Eastern Politics
- PSC 4580 African Politics
- PSC 4590 Globalization
- PSC 4600 The Politics of Terrorism

Public Administration Track

- PSC 1100 The American Political System
- PSC 2450 American Political Thought
- One PSC elective course

Complete three of the following Public Administration courses.

- PSC 3430 Law and Literature
- PSC 3450 Modern American Political Thought
- PSC 3980 Internship: Public Administration
- PSC 4060 State Political Systems
- PSC 4070 Urban Politics
- PSC 4320 Public Administration
- PSC 4350 Environmental Policies and Administration
- PSC 4460 Administrative Law
- PSC 4470 Constitutional Law\
- PSC 4480 Civil Rights and Liberties
- PSC 4490 The Judicial System
- PSC 4510 Defendant's Constitutional Rights
- PSC 4540 Land Use Law
- PSC 4550 Public School Law
- PSC 9480 Prelaw Internship

PRE-PROFESSIONAL CURRICULA

HEALTH FIELDS

Professional programs in health fields are offered at institutions such as the University of Colorado Health Sciences Center in Denver, with prerequisite coursework available at UCCS.

Pre-professional degrees are not offered at UCCS, although specific options, such as the pre-med option in the Chemistry & Biochemistry Department, may be available. Generally, students complete a degree in an area of interest to them and include appropriate prerequisite coursework for the desired professional program.

Students interested in a professional program in a health field should consult an advisor in Academic Advising as soon as possible to ensure completion of all required coursework. Completion of prerequisite coursework at UCCS does not guarantee acceptance into a professional school. Students are urged to get information from the professional programs of their choice, since the requirements may differ for each school. Additionally, more

stringent residency requirements are common for professional programs, and many professional programs are very selective due to enrollment limitations.

Admission to a professional program normally requires evidence of academic achievement and letters of recommendation documenting both academic and nonacademic qualifications. Each professional program can be expected to have many more applicants than it can accommodate, so no student should count on acceptance. Students are strongly urged to select a major and specific undergraduate courses that will provide the opportunities to apply to different schools and professional programs, as well as provide alternatives outside the health science fields. In particular, students should choose appropriate chemistry courses to maximize flexibility in choosing a postgraduate program.

HEALTH PRE-PROFESSIONAL PROGRAMS

- Pre-Child Health Associate/Physician Assistant
- Pre-Dentistry
- Pre-Medicine
- Pre-Pharmacy
- Pre-Physical Therapy
- Pre-Veterinary Medicine

PRE-CHILD HEALTH ASSOCIATE/PHYSICIAN ASSISTANT

IMPORTANT: These courses are intended to help you finish your pre-requisites for CU-Denver's Pre-Child Health/Physician Assistant program. This is NOT considered a major or a minor at UCCS. UCCS does not offer a CHA/PA program. However, if you are planning to apply to the CHA/PA program at CU Denver, UCCS offers a pre-professional program to assist you in preparation for the CHA/PA program.

The CHA/PA Program is a three-year, highly academic program modeled after medical school. The CHA/PA Program is a Physician Assistant Program that offers a pediatric focus and awards a Master's of Physician Assistant Studies upon completion. Although the emphasis is on preparing a generalist physician assistant with special expertise in pediatrics, the curriculum provides the new graduate with the fundamental knowledge and skills necessary to function in a variety of roles within numerous clinical disciplines.

OBJECTIVES

- In accordance with the mission of the program, the curriculum provides comprehensive physician assistant education in primary medical care with an emphasis on pediatrics and the need for service to disadvantaged, at risk, and medically underserved populations. They work under the supervision of a physician to provide health care for all family members.
- The majority of recent graduates practice in pediatrics and family medicine, with some choosing rural settings.
- A Child Health Associate/Physician Assistant will:
    - Provide health care to adults, adolescents, and children.
    - Diagnose and treat diseases in all family members.
    - Counsel patients/parents to promote preventive health care.

- Work in a variety of settings, including but not limited to private practice offices, HMO/outpatient clinics, specialty clinics, inpatient hospital services, and newborn nurseries.

Information about the CHA/PA program may be obtained from the website: http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/PAProgram/program/Pages/Mission.aspx

For more information on the pre-professional program, contact your advisor.

Freshmen and Prospective Students: Bev Kratzer (719) 255-3745, bkratzer@uccs.edu
Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

MINIMUM ADMISSION REQUIREMENTS

The pre-professional plan is based on the admission requirements to the CHA/PA Program. One component of admission is completion of a bachelor's degree with at least 120 credit hours, to include the following courses:

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 3830 - Genetics
- BIOL 4350 - Human Anatomy
- BIOL 4360 - Human Physiology
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II

Complete a statistics course from any department. Examples include:

- BIOL 3000 - Biostatistics
- MATH 3100 - Statistics for the Sciences
- PSY 2100 - Introduction to Psychological Statistics

Complete two psychology electives (6-7 credit hours). Recommended courses include:

- PSY 1000 - General Psychology
- PSY 3060 - Psychology and Health
- PSY 3280 - Abnormal Psychology
- PSY 3620 - Developmental Psychology

Recommended upper division courses:

- BIOL 3020 - Cell Biology
- BIOL 3100 - Microbiology: Bacteriology/Mycology
- BIOL 3910 - Immunology
- CHEM 4211 - Biochemistry
- CHEM 4221 - Biochemistry I

Note: BIOL 4350 and BIOL 4360, upper division biology elective courses, and a statistics course must be taken within five years of application.

PRE-DENTISTRY

IMPORTANT: These courses are intended to help you finish your pre-requisites for CU-Denver's Dental programs. This is NOT considered a major or a minor at UCCS. UCCS does not offer a Dentistry program. However, if you are planning to apply to the Doctorate of Dental Surgery (D.D.S.) program at the University of Colorado School of Dental Medicine, UCCS offers a pre-professional program to assist you in preparation.

Most students accepted to the University of Colorado School of Dentistry have completed at least four years of undergraduate work and have received an undergraduate degree. Students must complete the Dental Admissions Test (DAT) before applying to dental school.

Information about the dentistry program may be obtained from the website: http://www.ucdenver.edu/academics/colleges/dentalmedicine/ProgramsAdmissions/Pages/ProgramsAdmissions.aspx.

For more information on the pre-professional program, contact your advisor.

Freshmen and Prospective Students: Bev Kratzer (719) 255-3745, bkratzer@uccs.edu
Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

ADMISSION REQUIREMENTS

Completion of 90 credit hours (with at least 30 hours upper division), to include the following courses:

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 2030 - Microbiology **or**
- BIOL 3100 - Microbiology: Bacteriology/Mycology
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II
- CHEM 4211 - Biochemistry
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based

RECOMMENDED COURSES

- BIOL 3020 - Cell Biology
- BIOL 3910 - Immunology
- BIOL 4350 - Human Anatomy

- BIOL 4360 - Human Physiology
- PSY 1000 - General Psychology
- Communication electives

Note: Since pre-dental students will need to graduate before entering dental school, it will be necessary to complete an academic major and other College of Letters, Arts, and Sciences degree requirements. This will include 6 hours of English Literature or Humanities, and other electives to complete degree or minimum hours.

Only 60 hours from a community college can apply to the degree.

PRE-MEDICINE

IMPORTANT: These courses are intended to help you finish your pre-requisites for CU-Denver's Medical program. This is NOT considered a major or a minor at UCCS.

Pre-professional options offered at UCCS prepare students for candidacy into professional programs offered at other facilities.

Completion of prerequisite coursework does not guarantee acceptance into any professional program. Course requirements are for the University of Colorado programs; other schools may have slightly different requirements. Students should contact other schools of interest for appropriate pre-requisite coursework.

A college program leading to a bachelor's degree is considered by the faculty and the CU School of Medicine's Committee on Admissions to offer the best preparation for a student interested in medicine. Students in the pre-medicine program are advised to choose a major and should plan to graduate with a Bachelor's degree from UCCS.

An aspirant to the field of medicine needs a people-oriented background and good communication skills as well as good grounding in the biological and physical sciences.

For more information, see http://www.ucdenver.edu/academics/colleges/medicalschool/education/Admissions/apply/Pages/Index.aspx, or contact your advisor.

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Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

ADMISSION REQUIREMENTS

The MCAT and a baccalaureate degree, or at least 120 credit hours of college credit with a major leading to a degree, are required. The MCAT must be taken before the November 1 application deadline.

COURSE REQUIREMENTS

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II

- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- 6 credit hours of mathematics (minimum requirement of college-level math courses; two courses from MATH 1040, 1050, 1350 and 1360 are recommended, with calculus strongly recommended).

and

- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based **or**
- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II

Note: Some medical schools require two semesters of biochemistry, one semester of biostatistics, and two semesters of behavioral science courses (psychology, sociology). Students are encouraged to consider additional coursework in computer science, genetics, humanities, and social sciences.

PRE-PHARMACY

IMPORTANT: This set of courses is intended to help you finish your pre-requisites for CU-Denver's Pharmacy program. This is NOT considered a major or a minor at UCCS.

The doctor of pharmacy is a program with four years of professional pharmacy coursework completed once admitted to the School of Pharmacy. PhD programs in pharmaceutical sciences are also available at the University of Colorado.

Information and application materials for all pharmacy programs are available at http://www.ucdenver.edu/academics/colleges/pharmacy/Admissions/Pages/Admissions.aspx.

For more information on the UCCS program, contact your advisor.

Freshmen and Prospective Students: Bev Kratzer (719) 255-3745, bkratzer@uccs.edu
Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

ADMISSION REQUIREMENTS

The Pharmacy College Admission Test (PCAT) is required of all applicants and should be taken as early as possible during the senior year. Students applying to the School of Pharmacy must complete 90 credit hours of undergraduate coursework, to include the following:

Seven Year Limit Courses
All math and science prerequisite courses can be no older than seven years at the time of application.

- BIOL 1300 - General Biology: Organismic Biology

- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3101 - Organic Chemistry I
- CHEM 3102 - Organic Chemistry Laboratory I
- CHEM 3111 - Organic Chemistry II
- CHEM 3112 - Organic Chemistry Laboratory II
- CHEM 4211 - Biochemistry **or**
- CHEM 4221 - Biochemistry I
- MATH 1350 - Calculus I
- PES 1010 - Physics for Life Science I - Algebra Based **or**
- PES 1110 - General Physics I - Calculus Based

Additional Courses

- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- COMM 2100 - Public Speaking
- ECON 1010 - Introduction to Microeconomics
- 9 credit hours PSY, SOC, ANTH (cultural), or HIST electives
- 22 credit hours of general education electives (science, humanities, social science, mathematics, language, business, etc.)

PRE-PHYSICAL THERAPY

IMPORTANT: These courses are intended to help you finish your pre-requisites for CU-Denver's Physical Therapy program. This is NOT considered a major or a minor at UCCS.

Physical therapy is a health profession whose practitioners are involved in the treatment of abnormalities of the muscular, skeletal and nervous systems. Persons who are disabled as a result of pain, disease, injury or developmental delay are evaluated by a physical therapist who then plans and administers an appropriate therapeutic program. Rehabilitation of individuals with cardiac or pulmonary disease also involves physical therapy in the recovery process. The physical therapy program at the University of Colorado is a Doctor of Physical Therapy curriculum.

The application process is completed online through the University of Colorado Health Sciences Center Physical Therapy Program website: http://www.ucdenver.edu/academics/colleges/medicalschool/education/degree_programs/pt/Pages/PT.aspx.

For information, contact your advisor:

Freshmen and Prospective Students: Bev Kratzer (719) 255-3745, bkratzer@uccs.edu
Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

COURSE REQUIREMENTS

A bachelor's degree (BS or BA) in a field other than physical therapy must be completed prior to matriculation into the professional program. The degree should include the following coursework.

- BIOL 3020 - Cell Biology
- BIOL 4350 - Human Anatomy (combined anatomy & physiology courses are not accepted.)
- BIOL 4360 - Human Physiology
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1511 - General Chemistry for Majors II
- MATH 1350 - Calculus I
- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based

  or

- PES 1110 - General Physics I - Calculus Based
- PES 1160 - Advanced Physics Lab I
- PES 1120 - General Physics II
- PES 2160 - Advanced Physics Lab II

  Psychology (6 credit hours)
  PSY 1000 will not be accepted. The following courses are strongly recommended.

- PSY 3280 - Abnormal Psychology
- PSY 3620 - Developmental Psychology

  Statistics (3 credit hours)
  Choose one of the following courses.

- HSCI 2060 - Health Science Statistics
- MATH 3100 - Statistics for the Sciences
- PSY 2100 - Introduction to Psychological Statistics

  Complete 3 credit hours of a Writing or English Composition course.

Note: If prerequisite science courses are older than five years, an additional 6 credit hours of upper division science coursework must be completed.

PRE-VETERINARY MEDICINE

IMPORTANT: These courses are intended to help you finish your pre-requisites for Colorado State University's DVM program. This is NOT considered a major or a minor at UCCS.

A pre-professional veterinary medicine curriculum prepares students to apply to a professional veterinary medicine program. In Colorado, a program is available at Colorado State University (CSU) in Fort Collins. See their website for more information: http://csu-cvmbs.colostate.edu/dvm-program/Pages/default.aspx.

For information, contact your advisor:

Freshmen and Prospective Students: Bev Kratzer (719) 255-3745, bkratzer@uccs.edu
Sophomore and above: Dr. Wendy Haggren - (719) 255-4156, whaggren@uccs.edu

ADMISSION REQUIREMENTS

A minimum of 60 credit hours must be completed before admission to the veterinary program at CSU, including the following:

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 3000 - Biostatistics **or**
- MATH 3100 - Statistics for the Sciences
- BIOL 3830 - Genetics
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 1411 - General Chemistry II
- CHEM 4211 - Biochemistry **or**
- CHEM 4221 - Biochemistry I
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- PES 1010 - Physics for Life Science I - Algebra Based **and**
- PES 1150 - General Physics Lab I Algebra Based

  or

- PES 1110 - General Physics I - Calculus Based **and**
- PES 1160 - Advanced Physics Lab I
- 12 credit hours of social science, humanities, or foreign language courses

Note: Since most pre-veterinary medicine students will graduate before entering veterinary school, it will be necessary to complete an academic major and other College of Letters, Arts, and Sciences degree requirements.

PSYCHOLOGY

FACULTY

- *Professors:* Charles C. Benight (Faculty Director, Clinical Training Psychology; Chair of Veteran Health and Trauma), Frederick L. Coolidge, Mary Coussons-Read, Hasker P. Davis, Edith L. Greene (Director, Psychological Science Graduate Program), Lori E. James (Director of Undergraduate Training), Michael A. Kisley (Chair), Kelli J. Klebe, Thomas A. Pyszczynski, Sara Honn Qualls (Director, Gerontology Center), Daniel L. Segal, and Sandy K. Wurtele
- *Associate Professors:* Robert L. Durham, Leilani Feliciano, and Molly Maxfield
- *Assistant Professors:* Elizabeth Daniels, Brandon E. Gavett, Andrew Lac, and Kristin Samuelson
- *Senior Instructor:* Jennifer Clarke
- *Instructor:* Tamra Cater
- *Director, UCCS Aging Center:* Sara Honn Qualls

PROGRAMS OF STUDY

- Psychology Minor
- Psychology, BA
- Psychology and Criminal Justice, Dual BA
- Psychology, MA (Clinical and Psychological Science)
- Clinical Psychology with Curricular Emphasis in Geropsychology, PhD
- Clinical Psychology with Curricular Emphasis in Trauma Psychology, PhD

PSYCHOLOGY AND CRIMINAL JUSTICE, DUAL BA

The dual degree program in Psychology and Criminal Justice is designed to make it easier for students to complete these two majors (in the College of Letters, Arts, and Sciences and School of Public Affairs, respectively).

GENERAL REQUIREMENTS

- 25 credit hours in Criminal Justice and 3 credit hours of Public Administration coursework. At least 18 of said CJ/PAD credit hours must be upper-division (3000+ level). All CJ coursework must be completed with a grade of C or better.
- 37 credit hours of Psychology coursework, 18 of which must be upper-division (3000+ level). All but electives must be completed with a grade of C- or better.
- Complete the Psychology Senior Accountability Exit Exam.

COURSE REQUIREMENTS

Criminal Justice Courses

- CJ 1001 - Introduction to Criminal Justice
- CJ 2041 - Crime Theory and Causes
- CJ 3250 - Violence in Society
- CJ 4042 - Corrections
- CJ 4043 - Law Enforcement
- CJ 4044 - Courts and Judicial Process
- CJ 4121 - Ethics in Criminal Justice
- CJ 4960 - Criminal Justice Internship
- PAD 3268 - Contemporary Issues in Social and Public Policy

Psychology Courses

- PSY 1000 - General Psychology
- PSY 1100 - The Profession of Psychology
- PSY 2100 - Introduction to Psychological Statistics
- PSY 2110 - Introduction to Psychological Research and Measurement
- PSY 3270 - Introduction to Biopsychology

  Core Content Courses
  Complete three of the following courses. Only **one** Cognition and Learning course (PSY 13130, PSY 3140, PSY 3200) may count toward this requirement.

- PSY 3280 - Abnormal Psychology

- PSY 3130 - Learning and Cognition
- PSY 3140 - Cognitive Psychology
- PSY 3200 - Psychology of Learning
- PSY 3620 - Developmental Psychology
- PSY 3400 - Social Psychology

Complete one of the following Advanced Seminar courses.

- PSY 4060 - Seminar in Health Psychology
- PSY 4110 - Seminar in Methodology
- PSY 4130 - Seminar in Learning and Cognition
- PSY 4240 - Seminar in Psychology of Personality
- PSY 4270 - Seminar in Biopsychology
- PSY 4280 - Seminar in Abnormal Psychology
- PSY 4400 - Seminar in Social Psychology
- PSY 4430 - Seminar in Social Issues
- PSY 4510 - Seminar in History of Psychology.
- PSY 4620 - Seminar in Developmental Psychology

Complete PSY and CJ elective courses to meet total and upper-division credit hours. At least 6 hours must be from PSY courses.

PSYCHOLOGY, BA

LEARNING OUTCOMES

- Display knowledge of several areas of specialization in Psychology (i.e., abnormal, biopsychology, cognitive, developmental, measurement, methodology, social).
- Demonstrate competence in scientific reasoning, information gathering, and writing skills. Following the American Psychological Association guidelines, students will utilize their scientific reasoning skills to write a research article based on a literature search using information-gathering skills (e.g., library, Internet, etc.).
- Psychology majors will find their course of study to be useful in obtaining employment or pursuing an advanced degree.

GENERAL REQUIREMENTS

- At least 36 credit hours and not more than 54 credit hours of psychology courses, 18 of which must be upper-division (3000+ level).
- A grade of at least C- in the four required foundation courses, the four core content courses, and the one Advanced Seminar.
- Accountability examination: All graduating psychology majors will take an "Accountability Examination." The examination samples the student's understanding of the core content areas. Students can sign up to take the exam in the department office during their senior year. The exam is given several times during each semester.

HONORS PROGRAM

The Psychology Department's Honors Program offers a unique opportunity for outstanding majors to gain an intense research experience in the sub-area of psychology of their choosing. In collaboration with a faculty sponsor, honors students design an empirical research project, collect data for their research, analyze the data, and write a thesis presenting their findings. Students also participate in an oral defense of their completed thesis before a three-member faculty committee. Students take three courses: PSY 3000 Honors Seminar I, PSY 3100 Statistical Models in Psychology, and PSY 4000 Honors Seminar II. Students typically begin the program (both coursework and research) during the spring semester of their junior year, and continue through their senior year. The oral thesis defense occurs in the spring semester of the senior year. Successful completion of all aspects of the program earns the student High Distinction in Psychology.

For more information, please visit the website at http://www.uccs.edu/psych/undergraduate/psychology-honors.html, and/or contact Dr. Edie Greene, Director of Undergraduate Honors Program (egreene@uccs.edu).

COURSE REQUIREMENTS

Students should complete the **four required foundation courses** (first four courses listed below) before attempting other course requirements.

- PSY 1000 - General Psychology
- PSY 1100 - The Profession of Psychology
- PSY 2100 - Introduction to Psychological Statistics
- PSY 2110 - Introduction to Psychological Research and Measurement

Core Content Courses
Complete four courses from those listed below with no more than one course from any given area.

Abnormal

- PSY 3280 - Abnormal Psychology

Biopsychology

- PSY 3270 - Introduction to Biopsychology

Cognition & Learning

- PSY 3130 - Learning and Cognition
- PSY 3140 - Cognitive Psychology
- PSY 3200 - Psychology of Learning

Developmental

- PSY 3620 - Developmental Psychology

Social

- PSY 3400 - Social Psychology

Advanced Seminar
Complete one of the following.

- PSY 4060 - Seminar in Health Psychology
- PSY 4110 - Seminar in Methodology

- PSY 4130 - Seminar in Learning and Cognition
- PSY 4240 - Seminar in Psychology of Personality
- PSY 4270 - Seminar in Biopsychology
- PSY 4280 - Seminar in Abnormal Psychology
- PSY 4400 - Seminar in Social Psychology
- PSY 4430 - Seminar in Social Issues
- PSY 4510 - Seminar in History of Psychology.
- PSY 4620 - Seminar in Developmental Psychology

CLINICAL PSYCHOLOGY WITH CURRICULAR EMPHASIS IN GEROPSYCHOLOGY, PHD

PROGRAM MISSION

The program trains students according to the scientist-practitioner model in mental health diagnosis, assessment, and intervention for adults and older adults, and in basic and applied research on the psychological functioning of adults and aging individuals. Upon completion of the program, students will be prepared to work in a range of settings, including mental health clinics and clinical practices, hospitals, nursing homes, colleges and universities, state offices, research institutes, and as consultants to a wide variety of housing and social service providers to adults and older adults.

For more information on faculty and their areas of specialization, please see the faculty web page at http://www.uccs.edu/psych/faculty-and-staff.html.

PROGRAM GOALS AND OBJECTIVES

Students will develop foundational skills in the science and practice of clinical psychology with an emphasis on aging. They will be prepared to: provide diverse, empirically-based assessment and psychotherapeutic services; conduct research; educate, and provide leadership. Specifically, the three formal goals of the program (and the objectives of each goal) are:

Goal #1: Produce graduates who have the requisite knowledge and skills for entry into the professional practice of clinical psychology

Objectives for Goal #1
1-A: Acquire knowledge and skill in clinical assessment
1-B: Acquire knowledge and skill in psychological and psychotherapeutic interventions
1-C: Acquire knowledge in the ethics of clinical practice, including ethical practice with diverse populations
1-D: Acquire knowledge of clinical supervision and consultation that is commensurate with level of training

Goal #2: Produce graduates who are capable of conducting, evaluating, and disseminating research

Objectives for Goal #2
2-A: Acquire attitudes and skills essential for life-long learning and scholarly inquiry
2-B: Acquire knowledge and skills to conduct empirical psychological research
2-C: Acquire knowledge and skills to disseminate research effectively to professional and lay audiences

Goal #3: Produce graduates who demonstrate competence in knowledge and skills in geropsychology

Objectives for Goal #3

3-A: Acquire knowledge and skills in professional practice consistent with competencies associated with graduate training within the Pikes Peak Model of Training in Geropsychology
3-B: Acquire knowledge and skills to conduct empirical research in geropsychology

PROGRAM REQUIREMENTS

Knowledge and skills in clinical psychology and basic scientific psychology are the foundations on which the geropsychology focus is built. Students in this program are preparing to be clinical psychologists first and foremost, with a focus on geropsychology as their curricular emphasis. Students entering this program are essentially agreeing to focus their work on aging rather than sampling the variety of populations and problems that might form the elective offerings in another program.

This program adheres to the scientist-practitioner model of training in clinical psychology, commonly referred to as the Boulder model. Under this model, professional psychologists are trained to be both scientists and practitioners with the goal of enhancing the interplay between science and practice. In an emerging field, such as geropsychology, it is of utmost importance that practitioners add to the existing knowledge base regarding application strategies that are effective, and that scientists be informed of applied issues in shaping their pursuit of knowledge.

The curriculum will require at least five years of post-baccalaureate work to accomplish requirements of the doctoral degree. Students complete 126 hours of required and elective courses, a comprehensive exam, a dissertation of original scholarship, clinical practical, and a clinical internship (off-site). The clinical curriculum requires specific coursework, required for licensure and accreditation, and an off-site internship year. Students who enter the program with a BA or BS degree will earn an MA en route to the doctoral degree through the mechanism of the existing MA program. Completion of the Clinical Psychology PhD program from the BA or BS starting point will typically take 5 years of residence on campus with the 6th year allocated for internship. Students should expect this time frame as the general rule, pending unusual exceptions.

ACCREDITATION

The PhD program is accredited by the Commission on Accreditation of the American Psychological Association through 2019.

Office of Program Consultation and Accreditation
American Psychological Association
750 First Street, N.E.
Washington, DC 2002-4242
Tel: (202)336-5979 Email: APAAccred@apa.org

ADMISSIONS REQUIREMENTS

Applicants should have the following credentials:

- A BS or BA degree or its equivalent from an accredited college or university.
- An overall average of 3.0 ("A" is equivalent to 4.0) or above in all undergraduate courses, and 3.5 or better in all graduate courses.
- Graduate Record Exam scores of the 50th percentile or above on the verbal and quantitative sections. The advanced psychology subject test is strongly recommended.
- Four letters of recommendation from professors and employers.

- An adequate undergraduate program in psychology including college-level mathematics, statistics, experimental psychology, and some background in the biological, physical, and social sciences.
- Applicants should have career goals consistent with the program emphasis in geropsychology and desire training consistent with the scientist-practitioner model of training.

Promising students who do not meet all the requirements may be considered as applicants. Applicants with previous graduate coursework or degree may request a review of their transcript and related materials to determine whether specific courses or thesis requirements may be waived.

Faculty of the program and of the psychology department are strongly committed to respecting diversity in all of its forms. We strive to recruit and retain a diverse faculty and student body.

Application Material and Deadlines
The application deadline for fall admission each year is December 1. See the Graduate School website at http://www.uccs.edu/graduateschool/index.html for an online application.

CONTACT INFORMATION

Questions concerning the Clinical Psychology PhD Program with curricular emphasis in Geropsychology can also be addressed by calling (719) 255-4500 or e-mailing ddubois@uccs.edu.

All written correspondence and credentials should be mailed to:

Clinical Psychology PhD Program with curricular emphasis in Geropsychology
Psychology Department
UCCS
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918-3733

CLINICAL PSYCHOLOGY WITH CURRICULAR EMPHASIS IN TRAUMA PSYCHOLOGY, PHD

PROGRAM MISSION

The program trains students according to the scientist-practitioner model in mental health diagnosis, assessment, and intervention for adults who have experienced traumas, and in basic and applied research on the psychological functioning of adults with a trauma history. Upon completion of the program, students will be prepared to work in a range of settings, including mental health clinics and clinical practices, hospitals, VA's, colleges and universities, state offices, research institutes, and as consultants to a wide variety of other professional and community providers of services to adults who are trauma survivors.

For more information on faculty and their areas of specialization, please see the faculty web page at http://www.uccs.edu/psych/faculty-and-staff.html.

PROGRAM GOALS AND OBJECTIVES

Students will develop foundational skills in the science and practice of clinical psychology with an emphasis on trauma psychology. They will be prepared to provide diverse empirically-based assessment and psychotherapeutic services, conduct research, educate, and provide leadership. Specifically, the 3 formal goals of the program (and the objectives for each goal) are:

Goal #1: Produce graduates who have the requisite knowledge and skills for entry into the professional practice of clinical psychology

Objectives for Goal #1

1-A: Acquire knowledge and skill in clinical assessment
1-B: Acquire knowledge and skill in psychological and psychotherapeutic interventions
1-C: Acquire knowledge in the ethics of clinical practice, including ethical practice with diverse populations
1-D: Acquire knowledge of clinical supervision and consultation that is commensurate with level of training

Goal #2: Produce graduates who are capable of conducting, evaluating, and disseminating research

Objectives for Goal #2

2-A: Acquire attitudes and skills essential for life-long learning and scholarly inquiry
2-B: Acquire knowledge and skills to conduct empirical psychological research
2-C: Acquire knowledge and skills to disseminate research effectively to professional and lay audiences

Goal #3: Produce graduates who demonstrate competence in knowledge and skills in trauma psychology

Objectives for Goal #3

3-A: Acquire knowledge and skills in professional practice consistent with competencies associated with graduate training in trauma psychology
3-B: Acquire knowledge and skills to conduct empirical research in trauma psychology

PROGRAM REQUIREMENTS

Knowledge and skills in clinical psychology and basic scientific psychology are the foundations on which the trauma psychology focus is built. Students in this program are preparing to be clinical psychologists first and foremost, with a focus on trauma psychology as their curricular emphasis. Students entering this program are essentially agreeing to focus their work on trauma psychology rather than sampling the variety of populations and problems that might form the elective offerings in another program.

This program adheres to the scientist-practitioner model of training in clinical psychology, commonly referred to as the Boulder model. Under this model, professional psychologists are trained to be both scientists and practitioners with the goal of enhancing the interplay between science and practice. In an emerging field, such as trauma psychology, it is of utmost importance that practitioners add to the existing knowledge base regarding application strategies that are effective, and that scientists be informed of applied issues in shaping their pursuit of knowledge.

The curriculum will require at least five years of post-baccalaureate work to accomplish requirements of the doctoral degree. Students complete 126 hours of required and elective courses, a comprehensive exam, a dissertation of original scholarship, clinical practica, and a clinical internship (off site). The clinical curriculum requires specific coursework, required for licensure and accreditation, and an off site internship year. Students who enter the program with a BA or BS degree will earn an MA en route to the doctoral degree through the mechanism of the existing MA program.

Timeline for program completion: Completion of the Clinical Psychology PhD program from the BA or BS starting point will typically take five years of residence on campus with the sixth year allocated for internship (students should expect this time frame as the general rule pending unusual exceptions).

Doctoral students are also advised that this is a 12-month program with clinical Practicum obligations during the summers and some limited Spring pre-term course requirements. Clinical and research work are continuous without regard to the semester structures and students are funded to participate year round.

This program values and promotes self-awareness as a significant component of training in clinical psychology. Students in this program engage in self-awareness exercises within their courses and practicum training. They are also strongly encouraged to engage in their own psychotherapy during their training.

ACCREDITATION

The PhD program is accredited by the Commission on Accreditation of the American Psychological Association through 2019.

Office of Program Consultation and Accreditation
American Psychological Association
750 First Street, N.E.
Washington, DC 2002-4242
Tel: (202)336-5979 Email: APAAccred@apa.org

ADMISSIONS REQUIREMENTS

Applicants should have the following credentials:

- A BS or BA degree or its equivalent from an accredited college or university.
- An overall average of 3.0 ("A" is equivalent to 4.0) or above in all undergraduate courses, and 3.5 or better on graduate coursework.
- Graduate Record Exam scores of at least 1200 cumulative on the Verbal and Quantitative sections, or above the 50th percentile on the Verbal and Quantitative sections using the new GRE scoring. The advanced psychology test is strongly recommended
- An adequate undergraduate program in psychology including college-level mathematics, statistics, experimental psychology, and some background in the biological, physical, and social sciences.
- Applicants should have career goals consistent with the program emphasis in trauma psychology.

Promising students who do not meet all of the requirements may be considered as applicants. Graduate level courses completed prior to admission may be transferable into the program. Applicants with previous graduate coursework or degree may request a review of their transcript and related materials to determine whether specific courses or thesis requirements may be waived.

Faculty of the program and of the psychology department are strongly committed to respecting diversity in all of its forms. We strive to recruit and retain a diverse faculty and student body.

Application Material and Deadlines
The application deadline for fall admission each year is December 1. See the Graduate School website at http://www.uccs.edu/graduateschool/index.html for an online application.

CONTACT INFORMATION

Questions concerning the Clinical Psychology PhD Program with curricular emphasis in Trauma Psychology can also be addressed by calling (719) 255-4500 or e-mailing ddubois@uccs.edu.

All written correspondence and credentials should be mailed to:

Clinical Psychology PhD Program with curricular emphasis in Trauma Psychology
Psychology Department
UCCS
1420 Austin Bluffs Parkway
Colorado Springs, CO 80918-3733

PSYCHOLOGY, MA

The Psychology Department offers coursework and thesis supervision for a Master of Arts degree. The program offers two tracks: Clinical Psychology and Psychological Science. In addition to the general curriculum, there are several optional subplans available, including Developmental Psychology (Psychological Science only), Cognition (Psychological Science only), Psychology & the Law (Clinical Psychology or Psychological Science), and Trauma Psychology (Clinical Psychology or Psychological Science). Both the clinical psychology and psychological science tracks are designed to prepare students for doctoral programs. A majority of students are subsequently accepted into doctoral programs. The program is designed to be completed in two academic years of full-time work and includes an empirical thesis requirement. Faculty research interests are in a variety of subspecialties within psychology. See our departmental faculty web page at http://www.uccs.edu/psych/faculty-and-staff.html for more information about faculty research areas.

LEARNING OUTCOMES

- Demonstrate competency in conducting scientific research
- Prepare students for doctoral degrees in psychology or related fields
- Develop clinical competency of the students in the clinical psychology track

ADMISSION REQUIREMENTS

- A BS or BA degree or its equivalent from an accredited college or university.
- An overall grade point average of 3.0 ("A" is equivalent to 4.0) or above in all undergraduate courses.
- Our most competitive applicants have Graduate Record Exam scores of the 50th percentile or higher on both the verbal and quantitative sections. The advanced psychology subject test is strongly recommended.
- Four letters of recommendation from professors and employers.
- An adequate undergraduate program in psychology including college-level mathematics, statistics, experimental psychology, and some background in the biological, physical, and social sciences.
- Applicants to the clinical psychology track should also have coursework and/or community experience in applied psychology.

Promising students who do not meet all the requirements may be considered as applicants. Admission to the program is competitive, and applications are reviewed by the clinical admissions committee.

Application Material and Deadlines
The application deadline for fall admission is January 1.

For information and application for the Master of Arts program, see the department website at http://www.uccs.edu/psych/graduate/ma-program.html.

PSYCHOLOGY MINOR

General Requirements

- 20 credit hours of PSY coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- PSY 1000 - General Psychology
- PSY 2100 - Introduction to Psychological Statistics

  Complete two of the following courses (only one course from 3130, 3140, or 3200 may count toward this requirement).

- PSY 3130 - Learning and Cognition
- PSY 3140 - Cognitive Psychology
- PSY 3200 - Psychology of Learning
- PSY 3270 - Introduction to Biopsychology
- PSY 3280 - Abnormal Psychology
- PSY 3400 - Social Psychology
- PSY 3620 - Developmental Psychology

  Complete 5-7 credit hours of PSY course electives to meet total and upper-division requirements for the minor.

SOCIOLOGY

FACULTY

- *Professors:* Michèle Companion, Richard Dukes, Abby Ferber, and Kee Warner
- *Professors Emeriti:* Jay Coakley, Lynda Dickson, and Robert Hughes
- *Associate Professors:* Heather Albanesi (Chair), Jeffrey Montez de Oca, and Edwardo Portillos (Director of Graduate Studies)
- *Assistant Professors:* Esther Lamidi, Hilary Smith, Stephen Suh, and Lei Zhang
- *Senior Instructors:* Lori Guasta and Christy Lofton (Co-director of Undergraduate Studies)
- *Instructors:* Morgen Thomas and Zek Valkyrie (Co-director of Undergraduate Studies)

PROGRAMS OF STUDY

- Sociology Minor
- Sociology, BA
- Sociology and Women's and Ethnic Studies (WEST) Double Major
- Sociology and Criminal Justice, Dual BA
- Sociology Accelerated BA/MA
- Sociology, MA
- Undergraduate Certificate in Criminology and Justice Studies
- Undergraduate Certificate in Disability Studies
- Undergraduate Certificate in Social Dimensions of Health and Health Care

- Undergraduate Certificate in Sociology of Diversity
- Graduate Certificate in Advanced Research Methods
- Graduate Certificate in Disability Studies
- Graduate Certificate in Sociology of Diversity
- Graduate Certificate in Teaching Sociology

ONLINE COMPLETION IN SOCIOLOGY

The Bachelor's Degree Program in Sociology offers the option of online completion. If students have either completed 60 credits at UCCS, or transferred in with an AA, they will be able to complete their Bachelor of Arts at UCCS in sociology completely online. Alternatively, students who reside in the Colorado Springs area also have the option to take a combination of online and evening/weekend courses to complete the degree. All sociology required courses are offered in online format at least once during the calendar year; most are offered every semester, including summer. A range of elective courses are also available online each semester.

Please go to http://www.uccs.edu/soc/online/online-completion.html for the current list of courses that are offered online.

For further information, please contact Dr. Heather Albanesi at halbanes@uccs.edu.

SOCIOLOGY, BA

LEARNING OUTCOMES

- To demonstrate critical thinking, write in a clear, logical manner, and clearly express sociological knowledge in verbal communication.
- To show broad knowledge about global and local societies, social behavior and provide credible explanations of how and why social development has taken a particular direction.
- To understand, analyze and assess social experience, both theoretically and practically.
- To collect, analyze and interpret sociological data effectively.
- To understand social phenomena of deviance, globalization, social change, multiculturalism, structural inequality, and the intersections of race, class, gender and other forms of stratification.
- To apply sociological knowledge in professional and community settings and be adequately prepared for graduate study.

GENERAL REQUIREMENTS

- A minimum of 36 credit hours in Sociology, at least 18 hours of which must be upper-division courses (3000 or 4000 level). Students must complete these courses with a C or better. Courses at the 5000-level may be taken by qualified undergraduates with the consent of the instructor.
- Completing the Sociology Senior Exit Exam during the final semester of coursework. The Senior Exit Exam is administered online via BlackBoard.
- The Summit Experience is designed for senior-level students who have successfully completed SOC 1110, 2120, 3150, and 3170. **This is a requirement for all Sociology majors who declare after fall 2011.**

ONLINE BA IN SOCIOLOGY

Sociology offers the option of completing the entire bachelor's degree online. All Sociology required courses are offered online at least once during the calendar year; most are offered every semester. A range of elective courses, substantive courses, and Summit-flagged courses are also available online each semester, including summer. The honors option for the Summit Experience (4980/4990) is also available to online students.

Please visit http://www.uccs.edu/soc/online.html for more information, a complete list of course offered online, and a projected schedule of online offerings.

For further information, please contact Dr. Heather Albanesi at halbanes@uccs.edu.

COURSE REQUIREMENTS

- SOC 1110 - Introduction to Sociology
- SOC 3150 - Modern Sociological Theory
- SOC 3070 - Social Research Methods
- SOC 3170 - Social Statistics

Complete three of the following substantive courses.

- SOC 3280 - Asian American Communities
- SOC 3290 - Perspectives on Race and Ethnic Relations
- SOC 3310 - Sociology of the Family
- SOC 3410 - Sociology of Law
- SOC 4040 - Sociology of Gender and Sexuality
- SOC 4080 - Men and Masculinities
- SOC 4170 - Advanced Statistics and Methods
- SOC 4110 - Sociology of Homelessness
- SOC 4190 - Deviant Behavior
- SOC 4200 - Sociology of Poverty
- SOC 4240 - Sociology of Dis/Ability
- SOC 4300 - Sociology of Sport
- SOC 4310 - Class, Stratification and Power
- SOC 4380 - Globalization and Development
- SOC 4400 - Contemporary Social Movements
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4660 - Sociology of Medicine
- SOC 4960 - Juvenile Delinquency

Complete 9 credit hours of electives to meet total and upper-division requirements.

Summit Experience

- Complete either the honors or standard-track capstone requirement.
- Complete the Sociology Senior Exit Exam.

Honors Track

Students completing the honors track will receive departmental honors upon successful completion and graduation.

- SOC 4980 Capstone Preparatory

- SOC 4990 The Sociology Capstone

Standard Track

Complete one SOC course with a Compass Curriculum Summit flag. Courses on the Substantive list that have a Summit flag may double count. Options may include the following courses. Additional options may be available in any given semester. Contact the sociology department chair, Dr. Heather Albanesi, at halbanes@ucss.edu, for more information.

- SOC 4080 - Men and Masculinities
- SOC 4170 - Advanced Statistics and Methods
- SOC 4180 - Community Organization and Analysis
- SOC 4300 - Sociology of Sport
- SOC 4310 - Class, Stratification and Power
- SOC 4380 - Globalization and Development
- SOC 4400 - Contemporary Social Movements
- SOC 4480 - Racial Storytelling: Montgomery Travel Course
- SOC 4590 - Youth Gangs
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4660 - Sociology of Medicine
- SOC 4960 - Juvenile Delinquency

SOCIOLOGY ACCELERATED BA/MA

LEARNING OUTCOMES

- Offers highly qualified UCCS sociology majors the opportunity of pursuing the Bachelor of Arts (BA) in Sociology and Masters of Arts (MA) in Sociology concurrently.
- Allows for up to 9 credit hours to be used for both the BA and MA.

GENERAL REQUIREMENTS

- The requirements for the Accelerated program are equivalent to the aggregate of the BA and MA degrees, except that up to **9 credit hours** can be applied toward both the BA and MA requirement.
- Students admitted to the Accelerated degree program will maintain their undergraduate standing until the mid-program review, which will determine the student's eligibility to continue in the Accelerated degree program. This review will be conducted the semester in which the student will complete the BA requirements (including 120 credit hours).
- A student will be considered eligible to continue upon meeting the following minimum standards and criteria: completion of the requirements for a Bachelor of Arts in Sociology, and maintenance of a minimum cumulative overall GPA of 3.25 and Sociology GPA of 3.50.

PROGRAM REQUIREMENTS

- Once admitted into the Accelerated BA/MA program (while an undergraduate student), accelerated students complete three graduate courses with a minimum grade of 3.25 in each course. They must maintain a minimum GPA of 3.25 in all coursework and in coursework applied to their major.

- After completion on the 9 graduate credits (which count toward both their BA and MA) and 111 undergraduate credits, students will be considered graduate students. They must meet all master's degree requirements except for the three courses (9 credits) they completed as undergraduates.
- If students take a combined 4000/5000 level course at the 4000 level, they cannot take the same combined course at the 5000 level.

GRADUATE CERTIFICATE IN ADVANCED RESEARCH METHODS

This certificate trains Masters-level sociologists in a range of sociological research methods. Completion of the certificate provides evidence of competence in tools of quantitative and qualitative research methodology, which can be beneficial for enhancing future career options. Specific methodologies/skills covered include:

- Advanced statistics (including multiple regression and path analysis)
- Statistical modeling software (SPSS)
- Participant observation
- Content analysis
- Ethnographic methods
- Program evaluation
- Development of predictive/explanatory models

In today's data driven culture, the ability to design, carry out and appropriately interpret modeling projects that make sense of large data sets are skills that are marketable to private (e.g. market research analysts), non-profit and state employers as well as for those students interested in pursuing the PhD.

Dr. Edwardo Portillos is the coordinator of the Graduate Certificate in Advanced Research Methods: eportill@uccs.edu; (719) 255-4153.

GENERAL REQUIREMENTS

- Minimum requirement for completion: four courses, for a total of 12-14 credit hours.
- A minimum grade of 3.3 is required for each course applied toward the certificate.
- All courses must be at the 5000 level or above in Sociology. Independent studies may not be applied.
- To complete the program, students are required to submit a transcript and a five-page self-statement, evaluating three different quantitative or qualitative research methods in application to various research projects.
- The certificate will be mailed to recipients upon completion of a certificate audit and graduation, and will appear on the transcript.

COURSE REQUIREMENTS

Complete four of the following.

- SOC 5070 - Research Methods
- SOC 5090 - Research Practicum
- SOC 5170 - Advanced Statistics and Methods
- SOC 5180 - Community Organizations and Analysis
- SOC 5200 - Program Evaluation
- SOC 5370 - Sociology of Media and Popular Culture

- SOC 5830 - Race and Ethnic Relations
- Additional sociology special-topic methods courses may be offered that can be counted toward the graduate certificate. These courses must be approved in advance by the certificate coordinator.

GRADUATE CERTIFICATE IN DISABILITY STUDIES

For graduate students wishing to develop understanding of the interdisciplinary field of disability studies, we offer a graduate certificate of specialization. Completion of the certificate provides evidence of specialized study, which can be beneficial for enhancing future career options and interests. The certificate is useful for students planning careers in the private sector and educational institutions, including social work, graduate and professional schools, community action organizations, and social services.

For further information, contact Dr. Heather Albanesi, Certificate Coordinator, at halbanes@uccs.edu; (719) 255-4137.

GENERAL REQUIREMENTS

- Complete at least four courses (12 credit hours), all with a grade of at least 3.3.
- All courses must be at the 5000+ level. Independent studies may not be used.
- Up to 3 transfer credit hours may be applied, if approved by the certificate coordinator.
- To complete the program, students are required to submit a transcript and a five-page self-statement evaluating changes in their perceptions of disability-related issues as a result of program participation and implications for future scholarly and professional work.

COURSE REQUIREMENTS

- SOC 5230 - Foundations of Disability Studies

  Complete three of the following.
- SOC 5010 - Seminar: Special Topics in Sociology when topic is Sociology of the Military, Disability, and Trauma
- SOC 5240 - Sociology of Dis/Ability
- SPED 5000 - dis/Ability Studies in Education
- WEST 3400 - Advanced Theory: An Intersectional Approach
- Additional disability-studies-related special-topic courses may be offered that can be counted toward the graduate certificate. These courses must be approved in advance by the certificate coordinator.

GRADUATE CERTIFICATE IN SOCIOLOGY OF DIVERSITY

The Graduate Faculty of the Sociology Department has a strong emphasis in diversity and inequality issues, highlighting race and ethnicity, gender, sexuality, disability, and class. For sociology graduate students wishing to concentrate in these areas, we offer a graduate certificate of specialization. Completion of the certificate provides evidence of specialized study, which can be beneficial for enhancing future career options and interests. The certificate is useful for students planning careers in the private sector and educational institutions, including social work, graduate and professional schools, community action organizations, and social services.

For further information, contact Dr. Edwardo Portillos, Graduate Director and Certificate Coordinator, at eportill@uccs.edu; (719) 255-4153.

GENERAL REQUIREMENTS

- Complete at least four courses (12 credit hours), all with a grade of at least 3.3.
- All courses must be at the 5000+ level. Independent studies may not be used.
- Up to 3 transfer credit hours may be applied, if approved by the certificate coordinator.
- To complete the program, students are required to submit a transcript and a five-page self-statement evaluating changes in their perceptions of disability-related issues as a result of program participation and implications for future scholarly and professional work.

COURSE REQUIREMENTS

Complete four of the following.

- SOC 5010 - Seminar: Special Topics in Sociology when offered as any of the following topics: Global Migration; Sex Trafficking; Social Movements; Bodies, Genders, Sexualities. Additional topics may be offered that must be approved in advance by the certificate coordinator.
- SOC 5040 - Sociology of Gender and Sexuality
- SOC 5110 - Sociology of Homelessness
- SOC 5230 - Foundations of Disability Studies
- SOC 5240 - Sociology of Dis/Ability
- SOC 5270 - Native Communities
- SOC 5300 - Sociology of Sport
- SOC 5310 - Seminar: Class, Stratification and Power
- SOC 5380 - Globalization and Development
- SOC 5390 - Diversity Issues
- SOC 5450 - Global Field Experience in Sociology
- SOC 5470 - Intersections of Privilege
- SOC 5580 - Inclusive Teaching
- SOC 5600 - Critical Analysis of Capitalism
- SOC 5640 - Power and Privilege
- SOC 5480 - Racial Story Telling - Montgomery Travel Course
- SOC 5680 - Inequality USA
- SOC 5700 - Global Feminisms
- SOC 5830 - Race and Ethnic Relations
- SOC 5920 - Spiked: Spike Lee's Cinema
- SOC 5960 - Juvenile Delinquency

GRADUATE CERTIFICATE IN TEACHING SOCIOLOGY

The certificate consists of a three-semester sequence of courses, designed to prepare graduate students in sociology to teach at the university level.

- Training in development of university-level syllabi development and diversification
- Training in sociology-specific pedagogy, including lesson planning and instructional design
- Training in assessment
- Both in-class and undergraduate guest lecture experience
- Instruction in integrating technology into teaching

- Training in how to teach the concepts of privilege and oppression in the classroom
- Increase sensitivity and strategies to address the variety of sociological phenomena that regularly appear in university classrooms

This certificate is offered to graduate students enrolled in the Master's Program in Sociology and others who hold a BA from an accredited university in sociology or a closely-related field, and who have a GPA greater than 2.75. Any student who has not been admitted into the Master's program must meet graduate admissions criteria.

For further information, contact Dr. Edwardo Portillos, Graduate Director and Certificate Coordinator: eportill@uccs.edu; (719) 255-4153.

GENERAL REQUIREMENTS

- Each course applied to the program must be completed with a grade of at least 3.3.
- To complete the program, students are required to submit a transcript and a five-page teaching philosophy.

COURSE REQUIREMENTS

- SOC 5160 - Social Theory II
- SOC 5580 - Inclusive Teaching
- SOC 5590 - Teaching Sociology

Student Teaching (Choose A or B)

A. SOC 5100 Teaching Practicum

- SOC 5100 Teaching Practicum: Graduate Student Instructor (3 credit hours)
- No financial compensation
- Each student will work as a Teaching Assistant for one semester (attend classes, help grade, hold review sessions for exams, etc.)
- Teaching assistants will teach at least two lectures or components of lecture
- Teaching assistants will write a reflection paper at conclusion of course

B. Paid Teaching Assistant

- Paid $1250 for the semester
- Expectation of 10 hours/week (duties outlined in TA application)
- Teaching assistants will teach at least two lectures or components of lecture

UNDERGRADUATE CERTIFICATE IN CRIMINOLOGY AND JUSTICE STUDIES

The Sociology Department has a strong emphasis in multiple aspects of the criminal justice system, highlighting the impact of law and society, corrections systems, and structures of deviance in the social order.

For students wishing to concentrate in these areas, we offer a certificate of specialization. Completion of the certificate provides evidence of specialized study, which can be beneficial for enhancing future career options and interests. The certificate is marketable to a wide variety of employers and educational institutions, including law enforcement, law school, social work, graduate and professional schools, community action organizations, and social services. Participation in the certification program also provides students with opportunities for networking and mentoring.

Dr. Michèle Companion is the coordinator of the Undergraduate Certificate in Criminology and Justice Studies.

GENERAL REQUIREMENTS

- Minimum requirement for completion: four courses/12 credit hours.
- A minimum grade of 3.3 is required for each course applied.
- All courses must be upper-division (3000+ level) in Sociology. Independent studies may not be applied.

COURSE REQUIREMENTS

- SOC 3410 - Sociology of Law
- SOC 3400 - Criminology

  Courses eligible to fulfill the additional two-course requirement include, but are not limited to, the following:

- SOC 3360 - Sociology of Drugs and Addiction
- SOC 3490 - Youth Gangs
- SOC 4190 - Deviant Behavior
- SOC 4520 - Sociology of Corrections and Rehabilitation
- SOC 4960 - Juvenile Delinquency
- Additional special topic courses may be offered in a given semester that can be counted toward the certificate. These courses must be approved in advance by the Certificate Coordinator or the Sociology Department Chair.

CERTIFICATION PROCESS

Students wishing to enroll in a certificate program must turn in an application to the Certificate Coordinator, ideally when they declare their major. Students are strongly encouraged to enroll by their junior year to ensure that certificate requirements are met.

Students must submit their transcript to the coordinator to verify that they have met the requirements for the certificate at the beginning of their final semester. To complete the certificate program, students are required to submit a five-page, typewritten self-statement, evaluating changes in their perceptions of criminology and justice studies as a result of program participation and the implication for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit and graduation.

UNDERGRADUATE CERTIFICATE IN DISABILITY STUDIES

Participating faculty:

- Heather Albanesi, Sociology, LAS
- Andrea Herrera, WEST, LAS
- Scott Kupferman, Teaching and Learning, COE
- Morgen Thomas, Sociology, LAS

This certificate is designed for students who wish to:

- Develop understanding in the interdisciplinary field of disability studies
- Provide evidence of specialized study
- Indicate preparedness for graduate school

- Increase their appeal for a wide variety of employers and educational institutions, including social work, graduate and professional schools, community action organizations, and social services.

GENERAL REQUIREMENTS

- Complete four courses/12 credit hours.

COURSE REQUIREMENTS

- SOC 4230 - Foundations of Disability Studies

  Complete three of the following.

- SOC 2010 - Special Topics in Sociology - Lower Division when topic offered is Deaf People in Society.
- SOC 4010 - Special Topics in Sociology when topic offered is Sociology of the Military, Disability, and Trauma
- SOC 4120 - Body, Culture, and Power
- SOC 4240 - Sociology of Dis/Ability
- SOC 4650 - Sociology of Mental Illness
- SPED 3000 - dis/Ability Studies in Education
- SPED 4020 - Significant Support Needs
- WEST 3400 - Advanced Theory: An Intersectional Approach
- Additional disability-studies-related-special-topics courses that can be counted toward the certificate may be offered in any given semester. These courses must be approved in advance by Heather Albanesi, Certificate Coordinator.

UNDERGRADUATE CERTIFICATE IN SOCIAL DIMENSIONS OF HEALTH AND HEALTH CARE

The Sociology Department has a strong emphasis in multiple social dimensions of health and health care, highlighting the impact of ones position in the social structure on risk of exposure to various disease vectors and risks of disaster impacts, access to health care and the likelihood of treatment, and health outcomes. Stereotypes, stigma, and social construction of body image and "worthiness" of people and diseases for medial, financial, and political intervention play a central role in this process. Mitigating and aggravating factors such as race, sex, disability, culture, values, religion, wealth, age, and other social dimensions will be considered in relation to risk and vulnerability to disease, injury, and disasters.

For sociology majors, minors, and other students wishing to concentrate in these areas, we offer an undergraduate certificate of specialization. The certificate is commendable to a wide variety of employers and educational institutions, including disaster response centers, organizations, and non-governmental organizations, aging services, social work, graduate and professional schools, mental health organizations, and social services. Participation in the certification program also provides students with opportunities for networking and mentoring.

Dr. Michèle Companion (mcompani@uccs.edu) is the coordinator of the Undergraduate Certificate in Social Dimensions of Health and Health Care.

GENERAL REQUIREMENTS

- All students must earn a minimum grade of B+ (3.3) in each course applied to the certificate.

- Students who are not Sociology majors or minors must complete 3 additional credit hours of lower division Sociology credit before enrolling in the certificate program. **All courses must be offered through the Sociology program.** Independent studies may not be used to earn this certificate.
- This certificate requires at least four courses/12 credit hours.

COURSE REQUIREMENTS

Complete at least one of the following two courses. (Both courses may be taken.)

- SOC 3350 - Sociology of Health and Illness
- SOC 4660 - Sociology of Medicine

Complete two to three of the following.

- SOC 3340 - Food, Health, and Inequality
- SOC 3360 - Sociology of Drugs and Addiction
- SOC 4120 - Body, Culture, and Power
- SOC 4230 - Foundations of Disability Studies
- SOC 4240 - Sociology of Dis/Ability
- SOC 4620 - Sociology of Aging
- SOC 4650 - Sociology of Mental Illness
- SOC 4670 - Sociology of Death and Dying
- Additional special topics courses may be offered in a given semester that can be counted toward the certificate. These courses must be approved in advance by the Certificate Coordinator.

CERTIFICATION PROCESS

Students wishing to enroll in this certificate program must turn in an application to the Certificate Coordinator and are encouraged to enroll by their junior year. To complete the program, students are required to submit a transcript and a five-page, typewritten self-statement which evaluates the changes in the student's perceptions of the social dimensions of health and health care as a result of program participation, and implications for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit and graduation.

UNDERGRADUATE CERTIFICATE IN SOCIOLOGY OF DIVERSITY

The Sociology Department has a strong emphasis in diversity and inequality issues, highlighting race and ethnicity, gender, sexuality, and class. For sociology majors, minors, and other students wishing to concentrate in these areas, we offer a certificate of specialization. Completion of the certificate provides evidence of specialized study, which can be beneficial for enhancing future career options and interests. The certificate is marketable to a wide variety of employers and educational institutions, including social work, graduate and professional schools, community action organizations, and social services. Participation in the certification program also provides students with opportunities for networking and mentoring. Dr. Abby Ferber is the coordinator of the Certificate in the Sociology of Diversity.

GENERAL REQUIREMENTS

- Minimum requirement for completion: four courses, for a total of 12 credit hours.
- A minimum grade of 3.3 is required for each course applied toward the certificate.

- All courses must be upper division (3000+ level) and in Sociology. Independent studies may not be used to earn this certificate.
- Up to 3 Sociology transfer credits may be applied to the certificate.

COURSE REQUIREMENTS

Complete four of the following.

- SOC 2110 - Sex and Society
- SOC 2200 - Introduction to Racial and Ethnic Groups
- SOC 2250 - Gender Images
- SOC 3210 - American Minority Communities
- SOC 3230 - The Chicano Community
- SOC 3240 - African American Community
- SOC 3250 - Power, Privilege and Social Difference
- SOC 3270 - Native Communities
- SOC 3280 - Asian American Communities
- SOC 3290 - Perspectives on Race and Ethnic Relations
- SOC 3320 - African American Families
- SOC 3610 - Gender and Society
- SOC 4040 - Sociology of Gender and Sexuality
- SOC 4080 - Men and Masculinities
- SOC 4210 - Social Services and Welfare Reform
- SOC 4230 - Foundations of Disability Studies
- SOC 4240 - Sociology of Dis/Ability
- SOC 4300 - Sociology of Sport
- SOC 4310 - Class, Stratification and Power
- SOC 4390 - Diversity Issues
- SOC 4600 - Critical Analysis of Capitalism
- SOC 4470 - Intersections of Privilege
- SOC 4480 - Racial Storytelling: Montgomery Travel Course
- SOC 4700 - Global Feminisms
- Additional special topic courses may be offered that can be counted toward the certificate. These courses must be approved in advance by the Certificate Coordinator or the Sociology Department chair.

CERTIFICATION PROCESS

Students wishing to enroll in a certificate program must turn in an application to the Certificate Coordinator, ideally when they declare their major. Students are strongly encouraged to enroll by their junior year to ensure that certificate requirements are met. Students that are not sociology majors or minors must complete three (3) credit hours of additional lower division sociology credit before enrolling in the certificate program.

Students must submit their transcript to the coordinator to verify that they have met the requirements for the certificate at the beginning of their final semester. To complete the certificate program, students are required to submit a five-page, typewritten self-statement, evaluating changes in their perceptions of diversity issues as a result of program participation and the implication for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit and graduation.

SOCIOLOGY, MA

The Department of Sociology offers a Master of Arts degree in Sociology. All coursework for the MA degree can be taken on the Colorado Springs campus, although students may take appropriate and approved courses at the Denver or Boulder campuses. Admission to the MA program in Colorado Springs does not constitute admission to the graduate programs at Denver or Boulder.

LEARNING OUTCOMES

- Demonstrate advanced critical thinking; write in a clear, logical manner, and clearly express sociological knowledge in verbal communication.
- Gain in-depth knowledge of several substantive areas of sociology.
- Show broad knowledge about global and local societies, social behavior and provide credible explanations of how and why social development has taken a particular direction.
- Understand, analyze and assess social experience, both theoretically and practically.
- Collect, analyze, and interpret sociological data effectively.
- Understand social phenomena of deviance, globalization, social change, multiculturalism, structural inequality, and the intersections of race, gender and other forms of stratification.

MA Application and Admission

The student is referred to The UCCS Graduate School section of this catalog for a complete listing of all rules and regulations that apply to MA programs on this campus of the University of Colorado.

For Sociology-specific information, including policies on admissions, grades, course load, and plagiarism, and departmental financial assistance, please see the Sociology department's graduate program webpage at http://www.uccs.edu/soc/graduate.html.

Information may also be obtained from Rosemary Kelbel, Graduate Program Coordinator, Department of Sociology, UCCS.

MA REQUIREMENTS

Required Exams
All MA students must pass the Preliminary and Qualifying Exams, and either a Thesis Defense or a Comprehensive Examination, depending on their chosen MA Plan.

The Preliminary Examination
Students' progress will be reviewed after completion of the first 6 hours of graduate level courses to ensure adequate qualifications to proceed in the program. Students will be notified of the results of this review process and appropriate recommendations for further progress will be included.

The Qualifying Examination
After completing 18 graduate hours, including the required core sociology courses, students must prepare an Admission to Candidacy form and the Diploma Card, available on the UCCS Graduate School's website at http://www.uccs.edu/graduateschool/current-students/graduating-this-semester.html. The student's academic record will be reviewed and a plan for either a thesis (Plan I) or coursework (Plan II) must be approved to continue

in the program. If problems are identified, appropriate steps will be specified in order to become a candidate for the degree.

GENERAL REQUIREMENTS

There are two options for completing the requirements for the degree.

Plan I: Thesis
Complete a total of 24 hours of approved coursework, including the required courses, plus an acceptable thesis for 6 hours of credit.

Upon completion of the master's thesis and approval of the Chair of the thesis committee, a defense is scheduled. The goal of the defense is to engage in a thorough discussion of the thesis project and implications for continued research in the thesis topic.

Plan II: Comprehensive Oral Examination and Portfolio
Complete a total of 30 hours of approved coursework, including the required core sociology courses. Students are encouraged to develop individualized areas of concentration with their elective credits. Elective coursework may include approved courses from other UCCS Graduate programs, for example the School of Public Affairs, Applied Geography and the College of Education.

The comprehensive oral examination is based on a discussion of the materials provided by the student in her/his graduate student portfolio. Portfolios should be turned in to the graduate program coordinator two weeks before the comprehensive examination. Portfolios are not returned to the student, but become part of the graduate archive in the sociology department.

COURSE REQUIREMENTS

- SOC 5050 - Proseminar in Sociology
- SOC 5070 - Research Methods
- SOC 5160 - Social Theory II
- *Students who have not taken an undergraduate course in Social Theory are also required to take SOC 5150 - Social Theory I

  Complete one of the following advanced methods courses.

- SOC 5170 - Advanced Statistics and Methods
- SOC 5180 - Community Organizations and Analysis
- SOC 5200 - Program Evaluation
- SOC 5370 - Sociology of Media and Popular Culture
- SOC 5830 - Race and Ethnic Relations (Participant Observation method)

  Complete elective and/or thesis courses to reach total number of credit hours required in your degree plan.

SOCIOLOGY MINOR

GENERAL REQUIREMENTS

- 22 credit hours of SOC coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- SOC 1110 - Introduction to Sociology
- SOC 3070 - Social Research Methods
- SOC 3150 - Modern Sociological Theory **or**
- SOC 3170 - Social Statistics

Complete 10-11 credit hours of SOC course electives, to include at least 9 credit hours of upper-division (3000+ level) coursework. Students are encouraged to consult with sociology faculty to identify courses that best address their academic and professional interests, and to consider the capstone sequence, SOC 4980 and SOC 4990.

THEATRE AND DANCE

FACULTY

- **ASSOCIATE PROFESSOR:** Kevin Landis (Program Director)
- *Assistant Professor:* Max Shulman
- **SENIOR INSTRUCTOR:** Leah Chandler-Mills
- *Instructor:* Tiffany Tinsley-Weeks

PROGRAMS OF STUDY

- Dance Minor
- Theatre Minor
- Visual and Performing Arts, BA

DANCE MINOR

GENERAL REQUIREMENTS

- 21 credit hours of DNCE/THTR coursework, 12 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- DNCE 2700 - Fundamentals of Dance Technique
- THTR 1000 - Introduction to Theatre
- THTR 2020 - Acting Workshop I

Complete two of the following Specialization courses.

- DNCE 3700 - Special Topics in Dance Technique
- DNCE 3710 - Basic Modern Dance Technique I
- DNCE 3720 - Basic Modern Dance Technique II
- DNCE 3730 - Jazz Dance Technique
- DNCE 3740 - Ballet Dance Technique

Complete two of the following.

- DNCE 4700 - Dance Composition

- DNCE 4710 - Dance Composition 2
- DNCE 4900 - Spec Tpcs in Music and Dance:

THEATRE MINOR

GENERAL REQUIREMENTS

- 18 credit hours of THTR coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

- THTR 1000 - Introduction to Theatre
- THTR 2000 - Introduction to Technical Theatre
- THTR 2020 - Acting Workshop I

Complete one of the following theatre history courses.

- THTR 3201 - Topics in Early Theatre History
- THTR 3202 - Topics in Modern Theatre History
- THTR 3230 - What's Funny? The Nature and Form of Dramatic Comedy
- THTR 3240 - Women in Theatre
- THTR 3960 - Nationalism, Romanticism, and Melodrama
- THTR 3970 - The Nordic Legacy
- THTR 3980 - The Manifestoes of the Avant-Garde

Participate in three productions, in at least two of the following areas, for a total of 3 credit hours.

- THTR 3390 - Theatre Practicum: Acting
- THTR 3391 - Theatre Practicum: Technical
- THTR 3392 - Theatre Practicum: Directing/Stage Management

Complete 3 credit hours of elective upper-division (3000+ level) THTR coursework. Practicum credits may not be applied to this requirement.

VISUAL AND PERFORMING ARTS (VAPA)

FACULTY

- *Professors:* Suzanne MacAulay (Chair) and Robert von Dassanowsky
- *Professors Emeritae:* Julia Hoerner and Lin Fife
- *Associate Professors:* Matthew Barton, Corey Drieth, Kevin Landis, Teresa Meadows, and Glen
- Whitehead
- *Assistant Professors:* Jane Rigler
- *Visiting Assistant Professor:* Lauren Kinnee
- *Senior Instructors:* Leah Chandler-Mills, Pauline Foss, Claire Rau, and Curtis Smith
- *Instructors:* Haleh Abghari, Marina Eckler, Solveig Olsen, Nikki Pike, Stacy Platt, Tiffany Tinsley-Weeks
- *Music Program Coordinator:* Colin McAllister

PROGRAMS OF STUDY

- Art History Minor
- Dance Minor
- Film Studies Minor
- Museum Studies and Gallery Practice Minor
- Music Minors
- Theatre Minor
- Visual Arts Minor
- Visual and Performing Arts Minor
- Visual and Performing Arts, BA
- Visual and Performing Arts - Museum Studies and Gallery Practice, BI™
- Visual and Performing Arts - Music, BI™

VISUAL AND PERFORMING ARTS, BA

The Visual and Performing Arts Department offers a cross-disciplinary degree that encourages innovative collaboration between disciplines. This focus integrates art history, dance, film studies, museum and gallery practice, music, theatre, and visual arts. Students complete this degree with a primary concentration in one area and develop a comprehensive knowledge in each of the major disciplines. Through studio arts, performance, theory, scholarship, and creative uses of media and technology, students will engage in an investigative approach to the arts, where the local and global converge; where cross-fertilization inspires critical thinking, dialogue and improvisation; and where diversity of thought is intrinsic to artistic process and practice. When students complete this degree, they will have the skills and knowledge to enter graduate school or a variety of careers in the arts.

The Gallery of Contemporary Art, the Heller Center for Arts & Humanities, THEATREWORKS, and the Visual Resource Center offer students opportunities and venues for professional practice and interactions with visiting artists and scholars.

DEPARTMENTAL POLICIES

Arts Fees
Students enrolled in certain AH, DNCE, FILM, MUS, MSGP, THTR, VA, and VAPA courses will be assessed fees to help defray the cost of supplies. Course fees range from $15-$40 per class per semester. Check the course schedule for fees, or use the fee estimator at the Student Financial Services website: http://www.uccs.edu/bursar/estimate-your-total-bill.html. There is a full refund of the deposit for courses dropped the first two weeks of the term.

Departmental Goals
Students are members of a departmental campus culture with shared interests in the exchange of ideas about arts scholarship and performance by attending a variety of university and local performances and art events.

LEARNING OUTCOMES

Comprehension and development: perceptions concerning changes in attitude toward certain areas of performance vis-à-vis understanding and greater tolerance for innovation and experimentation.

- Ability to recognize and comprehend aesthetic criteria, artistic genres, and the intention of a variety of performative acts in different contexts

- Understand fundamental characteristics of performance and artistic expressiveness and their application cross-culturally and across disciplinary practices
- Ability to critique direct outcomes of art and performance (e.g., symbolism, metaphoric content, tropes such as parody and satire, cultural representation, improvisatory interaction, subversive intent, etc.)
- Ability to use the full range of resources to understand the complexity of any given arts-related topic, and to generate the requisite knowledge and evidence to create a compelling and coherent research project
- Ability to work collaboratively in groups across the arts disciplines

VISUAL AND PERFORMING ARTS, BA OPTIONS

- Art History Option
- Film Studies Option
- Music Options
- Theatre Option
- Visual Art Option

These options are described below. In addition, each option offers a minor, and there are BI degree options (Visual and Performing Arts - Museum Studies and Gallery Practice, BI™; Visual and Performing Arts - Music, BI™). See each department's page for more information.

COURSE REQUIREMENTS

Each option of the VAPA, BA consists of the following course distribution.

60-62 Total Credit Hours

- VAPA Courses: 9 credit hours (6 of which must be upper division)
- Cross-Disciplinary Courses: 3-6 credit hours
- Primary Concentration Courses: 36-50 credit hours, to include a capstone course

Art History Option

General Requirements

Students intending to earn a Bachelor of Arts in Visual and Performing Arts with an Art History option must complete 60 credit hours as follows:

- 9 in VAPA
- 39 in Art History
- 6 in Visual Art
- 6 within another VAPA option for the cross-disciplinary component

VAPA Course Requirements

Complete one 1000-level course.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two 3000+ level courses.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Cross-Disciplinary Electives
Complete 6 credit hours of 2000-level or higher coursework from other VAPA areas: AH, DNCE, FILM, MSGP, MUS, or THTR.

Art History Requirements (39 credit hours)

- AH 1500 - Art and Ideas: Michelangelo to Basquiat

  Complete 12 credit hours of 2000-level survey courses.

- AH 2000 - Survey: Special Topics
- AH 2800 - Survey: Ancient Art
- AH 2810 - Survey: Medieval Art
- AH 2820 - Survey: Renaissance, Baroque, and Rococo Art
- AH 2850 - Survey: American Art
- AH 2860 - Survey: Modern Art I
- AH 2870 - Survey: Modern Art II
- AH 2890 - Survey: Nineteenth Century Art
- Complete 21 credit hours of upper division (3000+ level) courses from at least four of the following areas of Art History: Ancient Cultures, the Medieval World, the Art of Africa, North American Native Arts, Mesoamerican Art, Islamic Art and Architecture, Asian Art, Renaissance and Baroque Art of Europe, the Arts of the Pacific Rim, the History of Women in the Arts, Public Art and Architecture, Art of the Contemporary Period, and Current Issues in Art History.
- AH 4980 - Senior Seminar in Art History

Visual Art Requirements (6 credit hours)
Please note: Students with the proper prerequisites may elect to take any upper-division visual arts courses to fulfill the Art History Visual Arts requirement.

Complete 6 credit hours of the following Visual Arts courses.

- VA 1010 - Beginning Studio-2D
- VA 1020 - Beginning Studio 3D
- VA 1040 - Beginning Drawing
- VA 2100 - Digital Imaging
- VA 2110 - Introduction to Photography
- VA 2130 - Beginning Painting

Film Studies Option

The Film Studies option in the Visual and Performing Arts major is devoted to the study of film as a multicultural and transnational artistic discipline. The emphasis of this track is on film history, theory, and analysis. The department provides an interdisciplinary approach to the study of the moving image, which prepares the student for graduate programs in advanced film and media study, or as a component to film making.

General Requirements

Students intending to earn a Bachelor of Arts in Visual and Performing Arts with a Film Studies option must complete 54 credit hours as follows:

- 9 in VAPA
- 39 in Film Studies
- 6 within another option for the cross-disciplinary component

VAPA Courses

Complete one 1000-level course.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two 3000+ level courses.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Cross-Disciplinary Electives

Complete 6 credit hours of 2000 level or higher coursework from other VAPA areas: AH, DNCE, MSGP, MUS, THTR, or VA.

Film Studies Requirements (39 credit hours)

- FILM 1000 - Introduction to Film Studies
- FILM 2000 - Narrative Film
- FILM 4500 - Film Theory
- FILM 4980 - Film Capstone: Film Studies Practice

Complete two of the following National Cinema courses.

- FILM 3400 - Hollywood's Germany: The German and Austrian Image in American Film
- FILM 3450 - German Film
- FILM 3550 - Hollywood History
- FILM 3690 - Topics in Hispanic Film
- FILM 3850 - Austrian and Central European Film
- FILM 4000 - Italian Film

- FILM 4110 - French Film

  Complete one of the following Director or Thematic Genre courses.

- FILM 2800 - Film and Fiction
- FILM 3330 - Film, Video and the Avant-Garde
- FILM 3700 - Film Scoring and Music Composition
- FILM 3900 - Special Topics in Film Studies
- FILM 3950 - Women in Film
- FILM 3990 - European Film - European History
- FILM 4250 - Directors in Focus
- FILM 4251 - Hitchcock
- FILM 4252 - Kubrick
- FILM 4253 - Almodovar
- FILM 4254 - Polanski

  Complete 15 credit hours of elective, upper-division (3000+ level) FILM coursework.
  Complete 3 credit hours of Practical coursework, chosen from the following.

- FILM 4030 - Internship in Film Studies
- FILM 9400 - Independent Study Nonproduction (festivals, journalism, teaching assistant duties, etc.) settings are recommended for the internship, but a production setting is acceptable if the student has filmmaking knowledge and demonstrated ability. Independent study consists of a research project dealing with some aspect of the film studies program not covered in course offerings. The student must propose the topic to a film studies faculty member who serves as the student's instructor.

Music Options

The VAPA Music Program offers two major tracks with interdisciplinary components:

- Composition and Sound Design
- Creative Music Practice, Performance and Technology

The Composition and Sound Design track connects traditional western composition, contemporary and experimental music, jazz and improvisation, computer music, world and non-western traditions with interdisciplinary arenas of sound art and sound design in multimedia, installation, video, theatre and film scoring.

The Creative Music Practice, Performance and Technology track identifies the performer/creative artist as a major paradigm in our musical culture. Musicians in this track can be from a range of traditions, any and all instruments in classical, jazz, singer/songwriter, vocal music - opera, music theatre, rap and hip-hop, DJ, laptop culture, and more. Students will embark on a comprehensive curriculum and rigorous training on their instruments/voice, to develop individual artistic directions in performance, composition and improvisation.

Students can reach their highest potential in our hybrid chamber music program which combines technology with traditional instrumental performance. Ensembles include the Creative Music Ensemble, Jazz Ensemble, Electro Acoustic Ensemble (rock/jazz/avant-garde/experimental), Chamber Music Ensemble, Mountain Lion Band, VAPA Vocal Ensemble, University Choir, Chamber Orchestra of the Springs, Musical Theatre and Theatreworks Student Productions.

Both tracks develop fluency in music technology, music history, music theory and aural skills, and interdisciplinary courses across the arts. Students are encouraged to minor in or develop secondary specializations in other arts fields. Moreover, the VAPA Music Program's priority on individual mentoring enables students to focus on a

targeted range of specializations in performance, improvisation, composition, sound design, film scoring, music theatre, history and/or entrepreneurship.

General Degree Requirements
Students are required to take private lessons from our award-winning faculty and participate at a high-level in instrumental and/or choral ensembles such as the Jazz and Improvisation Ensemble, University Choir, Jazz Vocal Ensemble, Chamber Ensemble, Electro Acoustic Ensemble, Computer Music, and Music Theater Performance.

Students intending to earn a Bachelor of Arts in Visual and Performing Arts with a Music option (either concentration) must complete 62 credit hours as follows:

- 9 in VAPA
- 3 within another VAPA option for the cross-disciplinary requirement
- 50 in Music

VAPA Courses
Students in both concentrations are required to fulfill the following VAPA course requirements.

Complete one 1000-level course.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two 3000+ level courses.

- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices

And one of the following.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Cross-Disciplinary Elective
Students in both music concentrations must complete 3 credit hours of 2000 level or higher coursework from another VAPA area: AH, DNCE, FILM, MSGP, THTR, or VA.

Composition and Sound Design Music Requirements (50 credit hours)

- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I
- MUS 1040 - Class Piano
- MUS 2010 - Advanced Music Theory
- MUS 2030 - Sight Singing and Ear Training II
- MUS 2150 - The Computer in Music
- MUS 2300 - Electronic Acoustic Ensemble

- MUS 2850 - Topics in Music History and Research I
- MUS 2950 - Introduction to Sound and Audio Recording
- MUS 3200 - Advanced Computer Music Composition
- MUS 3700 - Film Scoring and Music Composition
- MUS 3850 - Topics in Music History and Research II
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics
- MUS 4980 - Music Capstone: Senior Thesis

Complete 2 credit hours of Ensemble courses.

- MUS 1310 - University Choir
- MUS 2250 - Jazz and Improvisation Ensemble
- MUS 2310 - VAPA Vocal Ensemble
- MUS 2400 - Chamber Music Ensemble
- MUS 4300 - Creative Music Ensemble: The Score and Composition

Complete the following Applied Lessons courses for a total of 7 credit hours.

- MUS 1600 - Applied Music - Private Instruction (2 credit hours)
- MUS 2600 - Private Instruction: Advanced (2 credit hours)
- MUS 3600 - Private Instruction: Junior Recital (2 credit hours)
- MUS 4600 - Private Instruction: Senior Recital (1 credit hour)

Complete 6 credit hours of the following music Elective courses.

- MUS 2450 - Music Theatre Performance and Practice
- MUS 3150 - Introduction to Ethnomusicology
- MUS 4030 - Internship in Music
- MUS 4250 - The Business of Music: Entrepreneurship and Creative Enterprise
- MUS 4950 - Special Topics
- MUS 4960 - Advanced Special Topics

Creative Music Performance and Technology Music Requirements (50 credit hours)

- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I
- MUS 1040 - Class Piano
- MUS 2010 - Advanced Music Theory
- MUS 2030 - Sight Singing and Ear Training II
- MUS 2150 - The Computer in Music
- MUS 2300 - Electronic Acoustic Ensemble
- MUS 2850 - Topics in Music History and Research I
- MUS 2950 - Introduction to Sound and Audio Recording
- MUS 3850 - Topics in Music History and Research II
- MUS 4300 - Creative Music Ensemble: The Score and Composition
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics
- MUS 4980 - Music Capstone: Senior Thesis

Complete 5 credit hours of Ensemble courses.

- MUS 2250 - Jazz and Improvisation Ensemble
- MUS 2310 - VAPA Vocal Ensemble

- MUS 2400 - Chamber Music Ensemble

Complete 8 credit hours (2 credit hours each) of the following Applied Lessons courses.

- MUS 1600 - Applied Music - Private Instruction
- MUS 2600 - Private Instruction: Advanced
- MUS 3600 - Private Instruction: Junior Recital
- MUS 4600 - Private Instruction: Senior Recital

Complete 6 credit hours of the following music Elective courses.

- MUS 2450 - Music Theatre Performance and Practice
- MUS 3150 - Introduction to Ethnomusicology
- MUS 3200 - Advanced Computer Music Composition
- MUS 3700 - Film Scoring and Music Composition
- MUS 4030 - Internship in Music
- MUS 4250 - The Business of Music: Entrepreneurship and Creative Enterprise
- MUS 4960 - Advanced Special Topics

Theatre Option

The basic sequence of required courses comprising the Theatre option is designed to provide the student with a theoretical/historical grounding in the art of the theatre and the opportunity to put theories into practice in performance situations. Electives allow students to create a focus of study according to their interests. The academic theatre program sponsors a major student production every spring and several student-directed shows throughout the year. Students may also have the opportunity to participate in productions of THEATREWORKS, the regional repertory company at the University of Colorado at Colorado Springs. Students are advised that theatre courses, especially acting courses, are progressive and should be taken in sequence.

General Degree Requirements
Students intending to earn a Bachelor of Arts in Visual and Performing Arts with a Theatre option must complete 60 credit hours as follows:

- 9 in VAPA
- 45 in Theatre
- 6 within another VAPA option for the cross-disciplinary requirement

VAPA Courses

Complete one 1000-level course.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two 3000+ level courses.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama

- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Cross-Disciplinary Electives
Complete 6 credit hours of 2000 level or higher coursework from other VAPA areas: AH, DNCE, FILM, MSGP, MUS, or VA.

Theatre Requirements (45 credit hours)

- THTR 1000 - Introduction to Theatre
- THTR 2000 - Introduction to Technical Theatre
- THTR 2020 - Acting Workshop I
- THTR 3201 - Topics in Early Theatre History
- THTR 3202 - Topics in Modern Theatre History
- THTR 4060 - Directing I
- THTR 4980 - Theatre Capstone: Advanced Theatre Production

  Complete 5 credit hours of THTR practicum courses, including at least 1credit hour of each.

- THTR 3390 - Theatre Practicum: Acting
- THTR 3391 - Theatre Practicum: Technical
- THTR 3392 - Theatre Practicum: Directing/Stage Management

  Complete 6 credit hours of lower-division THTR electives.

- THTR 2010 - Stagecraft Laboratory
- THTR 2030 - Acting Workshop II
- THTR 2040 - Voice and Articulation I
- THTR 2050 - Improvisational Theatre
- THTR 2060 - Music Theatre Performance and Practice
- THTR 2600 - Theatre for Children
- THTR 2700 - Fundamentals of Dance Technique
- THTR 2900 - Special Topics in Theatre

  Complete 12 credit hours of upper division (3000+ level) THTR electives.

- THTR 3020 - Advanced Acting Studio I
- THTR 3030 - Advanced Acting Studio II
- THTR 3040 - Voice and Articulation II
- THTR 3050 - Stage Combat
- THTR 3060 - Advanced Musical Theatre: Performance and Practice
- THTR 3100 - On-Camera Performance
- THTR 3110 - Auditions and the Business of the Theatre
- THTR 3230 - What's Funny? The Nature and Form of Dramatic Comedy
- THTR 3240 - Women in Theatre
- THTR 3400 - Shakespeare in Production
- THTR 3510 - Stage Management
- THTR 3520 - Costume Design
- THTR 3530 - Theatre Make-up: Design
- THTR 3540 - Properties and Set Dressing

- THTR 3550 - Lighting for Theatre
- THTR 3590 - Advanced Topics in Technical Theatre
- THTR 3600 - The World of the Play
- THTR 3700 - Special Topics in Dance
- THTR 3900 - Special Topics in World Theater
- THTR 3960 - Nationalism, Romanticism, and Melodrama
- THTR 3970 - The Nordic Legacy
- THTR 3980 - The Manifestoes of the Avant-Garde
- THTR 4000 - Internship in Theatre
- THTR 4070 - Directing II
- THTR 4200 - Special Topics in Dramatic Literature
- THTR 4400 - Culminating Directing Project
- THTR 9400 - Independent Study in Theatre

Visual Art Option

The Visual Art option, either as a major or minor within the cross-disciplinary VAPA degree, offers students a wide range of media, including: digital media, drawing, painting, photography, sculpture/installation, sound collage, and video. Students are encouraged to explore hybrid processes and collaborative relationships between the disciplines of art history, dance, film, museum studies and gallery practice, music, and theatre.

General Degree Requirements
Students intending to earn a Bachelor of Arts in Visual and Performing Arts with a Visual Art option must complete 60 credit hours as follows:

- 9 in VAPA
- 39 in Visual Art
- 6 in Art History
- 6 within another VAPA option for a cross-disciplinary component

VAPA Courses

Complete one 1000-level course.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two 3000+ level courses.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Cross-Disciplinary Electives
Complete 6 credit hours of 2000 level or higher coursework from other VAPA areas: AH, DNCE, FILM, MSGP, MUS, or THTR.

Visual Art Requirements (39 credit hours)

- AH 1500 - Art and Ideas: Michelangelo to Basquiat
- VA 1010 - Beginning Studio-2D
- VA 1020 - Beginning Studio 3D
- VA 1040 - Beginning Drawing
- AH 3860 - Contemporary Art
- VA 3980 - Seminar in Studio Problems
- VA 4980 - Professional Seminar

Complete 24 credit hours of VA elective courses, 15 of which must be upper division (3000+ level or higher).

VISUAL AND PERFORMING ARTS - MUSEUM STUDIES AND GALLERY PRACTICE, BI™

The Bachelor of Innovation™ (BI) degree in Visual and Performing Arts - Museum Studies and Gallery Practice (MSGP) combines academic studies and professional training to prepare you for variety of careers at museums, galleries, science centers, cultural centers, historical societies, etc. The degree is structured so that you will not only gain a depth of understanding in museum studies and art history, but also a breadth of other arts disciplines, business, and entrepreneurship.

The major is composed of core courses in museum and gallery practice, art history, visual and performing arts (VAPA), and innovation and cross-disciplinary studies. You will learn about the different types of museums and organizations, develop the necessary skills for collections management and exhibition design, as well as examine the ways in which objects and cultures are represented. In addition, you will study the history of art and visual culture from prehistoric cave drawings to the latest theories in contemporary art and culture. The Innovation core will introduce you to entrepreneurship, grant and proposal writing, and invaluable team projects with regional organizations. The cross-discipline component includes business, creative communication, engineering technology, or globalization.

For more information, please visit http://www.uccs.edu/vapa/index/museum.html.

GENERAL REQUIREMENTS

- 33 credit hours of VAPA department coursework, 18 of which must be upper-division (3000+ level). All VAPA department coursework must be completed with a grade of C or better.
- 24 credit hours of Innovation Core coursework.
- 15 credit hours of Cross-Discipline Core coursework.

COURSE REQUIREMENTS

VAPA Core - 33 credit hours

- MSGP 2000 - Introduction to Museum Studies and Gallery Management
- MSGP 4040 - Gallery Management I
- MSGP 4060 - Exhibit Design and Development
- MSGP 4070 - Collections Management
- MSGP 4200 - Special Topics in Museum Studies and Gallery Management
- AH 1500 - Art and Ideas: Michelangelo to Basquiat

- AH 2000 - Survey: Special Topics
- AH 2860 - Survey: Modern Art I
- AH 4920 - Art since 1945

Complete one of the following Non-Western Upper-Division Art History courses.

- AH 3430 - African American Art
- AH 3450 - Art of Japan
- AH 3460 - Islamic Arts
- AH 4340 - Arts of Indigenous Cultures
- AH 4450 - Meso-American Art and Architecture: Sacred Time and Space
- AH 4470 - Art and Ritual of the South Pacific

Complete one of the following courses.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde
- VAPA 3990 - Performance Art

Innovation Core - 24 credit hours

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Discipline Core - 15 credit hours

Complete one of the Cross-Discipline Cores listed below. Each Cross-Discipline Core consists of 15 credit hours. See the BI website for specific courses: www.innovation.uccs.edu.

- Business
- Engineering Technology
- Globalization

VISUAL AND PERFORMING ARTS - MUSIC, BI™

The Bachelor of Innovation degree is not simply career preparation; it engages and imparts the skills of creative and innovative thinking. The experiential learning aspects of the curriculum involve students directly in the interdisciplinary nature of innovation projects working with local organizations and companies as an integral part of the program. Innovation is an attitude, a state of mind, a creative process, and also a specific task or action.

GENERAL REQUIREMENTS

- 38 credit hours VAPA department coursework, 18 of which must be upper-division (3000+ level). All VAPA department courses must have a grade of C or better.
- 24 credit hours of Innovation Core coursework.
- 15 credit hours of Cross-Discipline Core coursework.

COURSE REQUIREMENTS

VAPA Core - 38 Credit Hours

Complete one of the following 1000-level VAPA courses.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space

Complete each of the following.

- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- MUS 1010 - Music Theory I
- MUS 1030 - Sight Singing and Ear Training I
- MUS 1040 - Class Piano
- MUS 2010 - Advanced Music Theory
- MUS 2030 - Sight Singing and Ear Training II
- MUS 2150 - The Computer in Music
- MUS 4980 - Music Capstone: Senior Thesis

Complete 1 credit hour of each of the following.

- MUS 1600 - Applied Music - Private Instruction
- MUS 2600 - Private Instruction: Advanced
- MUS 3600 - Private Instruction: Junior Recital

Complete 2 credit hours of the following.

- MUS 4600 - Private Instruction: Senior Recital

Complete 4 credit hours of Ensemble courses.

- MUS 1310 - University Choir
- MUS 2210 - Mountain Lion Pep/Concert Band
- MUS 2250 - Jazz and Improvisation Ensemble
- MUS 2300 - Electronic Acoustic Ensemble
- MUS 2310 - VAPA Vocal Ensemble
- MUS 2400 - Chamber Music Ensemble

Complete three of the following elective courses.

- MUS 2950 - Introduction to Sound and Audio Recording
- MUS 3200 - Advanced Computer Music Composition
- MUS 3700 - Film Scoring and Music Composition
- MUS 4250 - The Business of Music: Entrepreneurship and Creative Enterprise
- MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics

Innovation Core - 24 Credit Hours

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Disciplinary Courses* - 15 credit hours

Students choose **one** concentration:

- Business - 15 credit hours
- Engineering Technology - 15 credit hours
- Globalization - 15 credit hours

*For specific courses, see the BI Overview at http://innovation.uccs.edu/cross-diciplinary-core/

VISUAL AND PERFORMING ARTS MINOR

In addition to the standing minors in the specializations of Art History, Dance, Film Studies, Museum and Gallery Practice, Music, Theatre, and Visual Arts, the department offers a cross-disciplinary minor which provides a strong basis in the collaborative aspects of the seven areas comprising Visual and Performing Arts.

GENERAL REQUIREMENTS

- 18 credit hours of coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

Complete one of the following.

- VAPA 1020 - Ethnography of Performing Arts
- VAPA 1050 - Visual and Performing Arts Foundation
- VAPA 1100 - Art in Time and Space
- VAPA 1500 - Arts Innovations: Methods and Practices

Complete two of the following.

- VAPA 3900 - Theory and Practice in the Visual Performing Arts (can be taken twice, but must be different topics.)
- VAPA 3910 - Animating the Human
- VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes
- VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices
- VAPA 3960 - Nationalism, Romanticism, and Melodrama
- VAPA 3970 - The Nordic Legacy
- VAPA 3980 - The Manifestoes of the Avant-Garde

Complete one of the following capstone courses.

- VAPA 3990 - Performance Art
- AH 4980 - Senior Seminar in Art History
- FILM 4980 - Film Capstone: Film Studies Practice
- MUS 4980 - Music Capstone: Senior Thesis
- THTR 4980 - Theatre Capstone: Advanced Theatre Production
- VA 4980 - Professional Seminar
- Complete two courses from two different VAPA areas: Art History, Dance, Film, Museum Studies & Gallery Practice, Music, Theatre, and/or Visual Arts. At least one course must be upper-division (3000+ level).

VISUAL ARTS

FACULTY

- *Associate Professor:* Matthew Barton (co-Director) and Corey Drieth (co-Director)
- *Senior Instructors:* Pauline Foss and Claire Rau
- *Instructors:* Marina Eckler, Nikki Pike, Stacy Platt

PROGRAMS OF STUDY

- Visual Arts Minor
- Visual and Performing Arts, BA

VISUAL ARTS MINOR

GENERAL REQUIREMENTS

- 18 credit hours of VA coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C- or better.

COURSE REQUIREMENTS

The elected pair of 1000-level VA courses must be completed before enrolling in any 2000+ level VA courses.

- VA 1010 Beginning Studio-2D **or** VA 1040 Beginning Drawing
- VA 1020 - Beginning Studio 3D

Complete one 2000-level VA course. Consult with a VA faculty advisor for course selection.

Complete 9 credit hours of upper-division (3000+ level) VA electives in one media. Consult with a VA faculty advisor for course selection.

WOMEN'S AND ETHNIC STUDIES (WEST)

FACULTY

- *Professors:* Abby Ferber and Andrea Herrera (Director)
- *Associate Professor:* Janice Gould, Stephany Rose, and Carole Woodall

- *Assistant Professors:* Dena Samuels and Stephen Suh
- *Instructor:* Kimberly Holcomb

MISSION STATEMENT

Our mission is to think critically about the intersections of race, ethnicity, class, gender, sexuality, disability, and other constructed social categories; to understand history, culture and society from a range of perspectives, including those emanating from communities whose stories and lives have been marginalized or silenced; and to develop consciousness about multi-ethnic and gender issue locally, domestically, globally and transnationally. Ultimately, our vision is to develop skills to shape our collective future in ways that foster diversity and equity.

The Women's and Ethnic Studies Program (WEST) is an interdisciplinary course of study that includes a major and a minor. Both the major and minor--as well as our certificate programs in Gender and Sexuality Studies, Global Studies, Latina/o Studies, and Native American and Indigenous Studies--center on the experiences and cultural expressions of women and/or racial and ethnic groups both in the United States and across the world. Our theoretical framework focuses on how race/ethnicity, gender, class, nationality, sexuality, disability, and other constructed hierarchies influence people's life chances and alliances. The WEST program emphasizes analytical sophistication, cross-disciplinary thinking, creative and innovative teaching, and community engagement. WEST promotes curricular and faculty development and sponsors a variety of cultural programming, including the Rosa Parks and Cesar Chavez Scholarship competitions, in collaboration with the Multicultural Office for Student Access, Inclusiveness, and Community (MOSAIC), and the Matrix Center for the Advancement of Social Equity and Inclusion.

By teaching and modeling ways to work effectively with individuals and groups from various backgrounds and experiences, WEST provides students with the knowledge and skills that are applicable to a wide range of graduate or professional programs and career opportunities, including:

- Human Resource Management
- Human Relations
- Administration
- Politics and Government
- Teaching
- Law and Law Enforcement
- International Relations
- Healthcare and Counseling
- Community Organizing, Non-Government Organizations (NGOs), and Non-profits
- Urban Planning
- Public Relations
- Ethnography and Social Work

PROGRAMS OF STUDY

- Women's and Ethnic Studies (WEST) Minor
- Women's and Ethnic Studies (WEST), BA
- Women's and Ethnic Studies (WEST), BI™
- Sociology and Women's and Ethnic Studies (WEST) Double Major
- Gender and Sexuality Studies Undergraduate Certificate (WEST)
- Global Studies Undergraduate Certificate (WEST)

- Latino/a Studies Undergraduate Certificate (WEST)
- Native American and Indigenous Studies Undergraduate Certificate (WEST)

WOMEN'S AND ETHNIC STUDIES (WEST), BA

Women's and Ethnic Studies (WEST) is an interdisciplinary program that brings together faculty from across the campus. The WEST major centers on the histories, experiences, and cultural expressions of women and racial or ethnic groups not only in the United States but also across the world. Our approach is intersectional in that it explores the connections among race, class, gender, sexuality, disability, and other socially constructed hierarchies. WEST emphasizes cultural responsiveness, critical and cross-disciplinary thinking, creative and innovative teaching, community engagement, and local and global awareness. We aim to create an equitable and sustainable world by analyzing structural inequality from a historical and cultural perspective and exploring strategies to achieve these goals. WEST offers one-on-one mentoring, small classes, travel courses, and a range of scholarship and internship opportunities.

LEARNING OUTCOMES

- Interdisciplinary approach: To think critically about the intersections of race/ethnicity, class, gender, sexuality, nationality, disability, and other hierarchies. Understanding history, culture and society from a range of perspectives, including those emanating from communities whose stories and lives have been marginalized or silenced.
- Scholarly sophistication: To write sophisticated self-reflective, critical or analytical, and research papers; promote creative expression; and express oneself with clarity and confidence.
- Developing knowledge: To develop consciousness about a range of socio-political issues locally, domestically, globally and transnationally. To become well versed in the rapidly increasing scholarship on women and racial/ethnic groups with special focus on transnational studies; literary and artistic achievements; historical, social, political, and economic conditions; families and communities; and people's strategies for liberation.
- Engaged teaching and learning: To excel in classes that allow students to develop their critical voices, value their contributions, and challenge and inspire their intellectual imaginations. To study with a multiracial/ethnic group of faculty.
- Community: To develop a sense of belonging to an intellectual, scholarly field and community, which is innovative, multiracial, and inclusive, and learn to work with integrity and openness with people from diverse backgrounds. To build bridges across categories such as race/ethnicity, class, sexuality, nationality, age, disability, and religion, and to apply this knowledge to other disciplines and communities; to see a link between theory and practice.
- Social change: To develop skills to shape our collective future in ways that foster diversity and equity. To gain the preparation needed to earn graduate degrees and/or obtain employment in WEST-related fields and work with people from a range of backgrounds.

DUAL MAJOR

The WEST major, with its low credit hour requirements, is designed to provide the **ideal second major**. A dual major in WEST and any other discipline provides skills to address issues of diversity relevant to every field. Today's job market requires cultural proficiency and experience in working with diverse and global populations. A Sociology and Women's and Ethnic Studies (WEST) Double Major is also available.

GENERAL REQUIREMENTS

The major requires a minimum of 30 credit hours of WEST coursework, 21 of which must be upper division (3000+ level). 15 of the 21 upper-division credit hours must be taken at UCCS. No more than 54 credit hours of WEST courses can be applied toward the degree. All WEST courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

Core Courses

Complete each of the following.

- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 3300 - Methodologies in Women's and Ethnic Studies
- WEST 3400 - Advanced Theory: An Intersectional Approach (Fall only)
- WEST 4950 - Capstone Senior Seminar This course has an internship component, and is only offered in Spring. Students are required to meet with the capstone course instructor during the fall semester prior to enrolling in the course in order to discuss their senior capstone projects.

Substantive Areas

At least one class must be completed from each of the following three substantive areas (for a total of three courses).

Courses cannot be counted in more than one area.

Check updated lists at http://www.uccs.edu/west/current_students/substantive.html.

Transnational/Global Studies

- WEST 3070 Global Men and Masculinities
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3480 Global Women's Issues
- WEST 3550 Native American Literature
- WEST 3560 Women and Aging International: Diversity, Challenges, and Contributions
- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4050 From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4100 Native American Perspectives on Museums
- WEST 4120 Indigenous Views on Sustainability: All My Relations
- WEST 4170 The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4700 Global Feminisms

Creative and Artistic Expression

- WEST 2040 Global Black Women Writers
- WEST 2500 Race and Gender at the Movies
- WEST 3020 Me, Myself, and I: Life Writing, Autobiography and the Creation of the Self
- WEST 3100 Women of Color: Image and Voice
- WEST 3360 U.S. Latina/o Literature
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3550 Native American Literature
- WEST 3990 Readings in Multiethnic Literature

- WEST 4060 Middle East Women in Film
- WEST 4100 Native American Perspectives on Museums

Social Movements, Communities, and History

- WEST 2030 Hiphop and the Performance of Identities
- WEST 2070 Foundations in Native American Studies
- WEST 3060 Multi-Racial Identities
- WEST 3090 Peep Show: Sexuality in Popular Culture
- WEST 3130 Gender, Race, and Sexuality
- WEST 3150 Power, Privilege, and Social Difference
- WEST 3290 Perspectives on Race and Ethnic Relations
- WEST 3480 Global Women's Issues
- WEST 3620 Media and Consumption: Monopolies, Myths, and Misrepresentations
- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4120 Indigenous Views on Sustainability: All My Relations
- WEST 4140 Unnatural Disasters: Hurricane Katrina, Climate, and Our Future on a Changing Planet
- WEST 4160 The Transatlantic Slave Trade: A Comparative, Cross-cultural Perspective
- WEST 4170 The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4280 Native American Philosophical Thought
- WEST 4500 Social Justice and Sustainability: Living Mindfully
- WEST 4700 Global Feminisms

Exit Questionnaire

All WEST students are required to complete an exit questionnaire as seniors.

WOMEN'S AND ETHNIC STUDIES (WEST), BI™

The BI in Women's and Ethnic Studies degree provides an opportunity for students to integrate a scholarly, community-oriented, socially engaged and interdisciplinary major with a grounding in business, entrepreneurship, and technology. This degree will help prepare students to enter career fields in business, engineering and technology by cultivating the skills and knowledge to work with diverse clients and markets. In addition, this degree will attract more women and students of color to careers in which they remain under-represented.

The degree is structured so that students will gain a depth of understanding in WEST, and a breadth of knowledge and experience through an Innovation core and Cross-disciplinary courses. The Innovation core introduces students to entrepreneurship, grant and proposal writing, and team projects with regional organizations. The Cross-discipline component includes business, creative communication, engineering technology, or globalization.

GENERAL REQUIREMENTS

- A minimum of 120 credit hours must be completed with a cumulative CU grade point average of 2.0; at least 45 of these credit hours must be upper-division level (3000+ level).

COURSE REQUIREMENTS

WEST Courses

The Women's and Ethnic Studies BI requires a minimum of 30 credit hours of WEST coursework, 21 of which must be upper-division (3000+ level). All WEST courses must be completed with a grade of "C" or better.

WEST Core

- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 3300 - Methodologies in Women's and Ethnic Studies
- WEST 3400 - Advanced Theory: An Intersectional Approach

WEST Substantive Areas

Complete one course (3 credit hours) from EACH of the following three substantive areas (9 credit hours total). Courses cannot be counted in more than one area. Check updated lists at http://www.uccs.edu/west/current_students/substantive.html.

Transnational/Global Studies

- WEST 3070 Global Men and Masculinities
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3480 Global Women's Issues
- WEST 3550 Native American Literature
- WEST 3560 Women and Aging International: Diversity, Challenges, and Contributions
- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4050 From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4100 Native American Perspectives on Museums
- WEST 4120 Indigenous Views on Sustainability: All My Relations
- WEST 4170 The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4700 Global Feminisms

Creative and Artistic Expression

- WEST 2040 Global Black Women Writers
- WEST 2500 Race and Gender at the Movies
- WEST 3020 Me, Myself, and I: Life Writing, Autobiography and the Creation of the Self
- WEST 3100 Women of Color: Image and Voice
- WEST 3360 U.S. Latina/o Literature
- WEST 3380 Caribbean Literature, History, and Theory
- WEST 3550 Native American Literature
- WEST 3990 Readings in Multiethnic Literature
- WEST 4060 Middle East Women in Film
- WEST 4100 Native American Perspectives on Museums

Social Movements, Communities, and History

- WEST 2030 Hiphop and the Performance of Identities
- WEST 2070 Foundations in Native American Studies
- WEST 3060 Multi-Racial Identities
- WEST 3090 Peep Show: Sexuality in Popular Culture
- WEST 3130 Gender, Race, and Sexuality
- WEST 3150 Power, Privilege, and Social Difference
- WEST 3290 Perspectives on Race and Ethnic Relations
- WEST 3480 Global Women's Issues
- WEST 3620 Media and Consumption: Monopolies, Myths, and Misrepresentations
- WEST 3680 Islam and the West: Contacts, Representations, and Approaches
- WEST 4120 Indigenous Views on Sustainability: All My Relations

- WEST 4140 Unnatural Disasters: Hurricane Katrina, Climate, and Our Future on a Changing Planet
- WEST 4160 The Transatlantic Slave Trade: A Comparative, Cross-cultural Perspective
- WEST 4170 The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4280 Native American Philosophical Thought
- WEST 4500 Social Justice and Sustainability: Living Mindfully
- WEST 4700 Global Feminisms

WEST Electives
Complete three upper-division WEST or cross-listed WEST courses (9 credit hours).

Innovation Core

- BLAW 2010 - Business and Intellectual Property Law
- ENTP 1000 - Introduction to Entrepreneurship
- ENTP 4500 - Entrepreneurship and Strategy
- INOV 1010 - The Innovation Process
- INOV 2010 - Innovation Team: Analyze and Report
- INOV 2100 - Technical Writing, Proposals, and Presentations
- INOV 3010 - Innovation Team: Research and Execute
- INOV 4010 - Innovation Team: Design and Lead

Cross-Disciplinary Courses* - 15 credit hours
Students choose **one** concentration:

- Business - 15 credit hours
- Engineering Technology - 15 credit hours
- Globalization - 15 credit hours

*For specific courses, see the BI Overview at http://innovation.uccs.edu/cross-diciplinary-core/

GENDER AND SEXUALITY STUDIES UNDERGRADUATE CERTIFICATE (WEST)

Coordinator: Kimberly A. Holcomb, MA, ACAD 411
Email: kholcomb@uccs.edu
Ph: (719) 255-4117

Gender and Sexualities Studies seeks to understand sexuality as a social phenomenon, social construct, and identity. Following various threads of both the feminist as well as the LGBTQ rights movements, the burgeoning academic field of Gender and Sexualities Studies has witnessed the development of academic associations and journals, as well as courses and programs at universities across the nation and the globe. As an academic field, Gender and Sexualities Studies adheres to a multi- and inter-disciplinary approach that views sexualities and gender as social identities shaped by oppression and privilege.

The certificate in Gender and Sexualities Studies gives students the intellectual and methodological tools to enable them to play a leadership role in gender and sexuality research, policy, and practice at a broad range of public and private organizations.

GENERAL REQUIREMENTS

To enroll in the certificate program, get the application as a PDF from the WEST website, http://www.uccs.edu/~west/, from the coordinator, or from the WEST office: ACAD 406. Ph: (719) 255-4553.

Meet with the coordinator to turn in the completed application as soon as possible after completing the certificate prerequisite.

- Independent studies may not be used to earn this certificate.
- All courses be WEST courses or cross-listed with WEST courses.
- A minimum grade of 2.0 (C) is required for each course applied to the certificate
- Courses counted toward this certificate may not count toward other WEST certificates.

In order to complete the certificate program, students are required to submit to the coordinator a transcript and a five-page, typewritten self-reflective statement evaluating her/his perceptions regarding the knowledge gained in the concentration and implications for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit by the coordinator, and graduation.

COURSE REQUIREMENTS

Complete four of the following (or their corresponding cross-list).

- SOC 2110 - Sex and Society
- SOC 2250 - Gender Images
- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- WEST 3090 - Peep Show: Sexuality in Popular Culture
- WEST 3130 - Gender, Race, and Sexuality
- WEST 3270 - Archaeological Approaches to Gender and Sexuality
- WEST 4040 - Gender and Sexuality
- WEST 4080 - Men and Masculinities
- WEST 4900 - Special Topics Upper Division when topic offered is Bodies, Genders, and Sexualities

GLOBAL STUDIES UNDERGRADUATE CERTIFICATE (WEST)

Coordinator: Dr. Carole Woodall, COLU 2045
Email: cwoodall@uccs.edu
Ph: (719) 255-3768

The WEST program approaches the study of global social phenomena as a complex and dynamic product of multiple regional, ethnic, and institutional identities from a transnational perspective. It offers a variety of courses that explore the intersections among gender, race, class, sexuality, identity, sovereignty, citizenship, local and global levels of social interaction, international networks, social movements, and grassroots organizing that allow for social activism and agency of global women and other under-represented populations. For WEST majors, minors, and other students wishing to concentrate in these areas, we offer a certificate of specialization in Global Studies.

The certificate is marketable to a wide variety of employers and educational institutions, including social work, graduate and professional schools (Globalization Studies, Middle-Eastern Studies, Asian Studies, Indigenous Studies, Africana Studies, Latino/a Studies, Immigration Studies), community action organizations (non-profits and NGOs), government agencies and social services. Participation in the certificate program also provides students with opportunities for networking and mentoring within these specializations and more.

GENERAL REQUIREMENTS

To enroll in the certificate program, get the application as a PDF from the WEST website, http://www.uccs.edu/~west/, from the coordinator, or from the WEST office: ACAD 406. Ph: (719) 255-4553.

Meet with the coordinator to turn in the completed application as soon as possible after completing the certificate prerequisite.

- Independent studies may not be used to earn this certificate.
- All courses be WEST courses or cross-listed with WEST courses.
- A minimum grade of 2.0 (C) is required for each course applied to the certificate
- Courses counted toward this certificate may not count toward other WEST certificates.

In order to complete the certificate program, students are required to submit to the coordinator a transcript and a five-page, typewritten self-reflective statement evaluating her/his perceptions regarding the knowledge gained in the concentration and implications for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit by the coordinator, and graduation.

COURSE REQUIREMENTS

After completing prerequisite WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement, students are required to complete 12 credit hours of WEST courses, 9 of which must be upper division.

Complete four of the following.

- WEST 3040 - Women Around the World
- WEST 3140 - Women in Classical Antiquity
- WEST 3380 - Caribbean Literature, History, and Theory
- WEST 3400 - Advanced Theory: An Intersectional Approach
- WEST 3420 - North American Indians
- WEST 3480 - Global Women's Issues
- WEST 3560 - Women and Aging International: Diversity, Challenges, and Contributions
- WEST 3580 - Immigrant Histories
- WEST 3680 - Islam and the West: Contacts, Representations, and Approaches
- WEST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident
- WEST 4060 - Middle East Women in Film
- WEST 4100 - Native American Perspectives on Museums
- WEST 4120 - Indigenous Views on Sustainability: All My Relations
- WEST 4160 - The Transatlantic Slave Trade: A Comparative, Cross-cultural Perspective
- WEST 4170 - The Empire Strikes Back: Postcolonial Literature, History, and Theory
- WEST 4180 - Gender in International Politics
- WEST 4410 - Topics on Women in the Middle East
- WEST 4700 - Global Feminisms
- WEST 4760 - Women's Space, Women's Place: Women's Role in Changing the Face of the Earth
- WEST 4900 - Special Topics Upper Division when topic is Rhetorics of Truth and Reconciliation

Additional courses may be offered that can count toward the certificate. These courses must be approved in advance by the certificate coordinator.

LATINO/A STUDIES UNDERGRADUATE CERTIFICATE (WEST)

Coordinator: Dr. Andrea Herrera, ACAD 426
Email: aherrera@uccs.edu
Ph: (719) 255-4001

The WEST program is committed to deepening the understanding of the histories, cultures, and perspectives of groups whose stories and experiences have been marginalized, with special emphasis on those within our own community. Thus, an area that we are developing within the program is Latino/a Studies. Approached with a special emphasis on cultural and historical context, the Latino/a Studies Certificate is designed to highlight the diverse experiences of the various Latino/a communities in the United States and abroad, and engage students in the ongoing debate regarding how transnational Latina/o identifications are constructed and defined in the wake of the globalization, migration, and diaspora. The courses offered in this concentration emphasize the manner in which cultural identification has been approached, theorized and defined, and the manner in which ethnic/racial, cultural and social identity has been conceptualized in terms of intertwined categories such as class, gender, ability, and sexual or religious orientation.

Given the particular demographics of the geographical region in which we are located, a certificate in Latino/a Studies is attractive to a wide range of employers and educational institutions, including social work, graduate and professional schools, community action organizations (non-profits and NGOs), heath care providers, government agencies, and social/ legal services. A specialization in Latino/a Studies also provides students with opportunities for networking and mentoring.

GENERAL REQUIREMENTS

To enroll in the certificate program, get the application as a PDF from the WEST website (http://www.uccs.edu/~west/), from the coordinator, or from the WEST office: ACAD 406. Ph: (719) 255-4553. Meet with the coordinator to turn in the completed application as soon as possible after completing the certificate prerequisite.

- Independent studies may not be used to earn this certificate.
- All courses be WEST courses or cross-listed with WEST courses.
- A minimum grade of 2.0 (C) is required for each course applied to the certificate
- Courses counted toward this certificate may not count toward other WEST certificates.

In order to complete the certificate program, students are required to submit to the coordinator a transcript and a five-page, typewritten self-reflective statement evaluating her/his perceptions regarding the knowledge gained in the concentration and implications for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit by the coordinator, and graduation.

Students are strongly encouraged to study in a setting where Spanish is spoken. Travel courses are offered, for example, by Women's and Ethnic Studies and the Departments of Languages & Cultures, Anthropology, and Geography at UCCS, and are also available through the Office of International Education at UC Boulder and Denver.

COURSE REQUIREMENTS

After completing prerequisite WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement, students are required to complete 12 credit hours (9 of which must be upper division) of the WEST or SPAN courses detailed below.

Complete four of the following courses.

- WEST 3060 - Multi-Racial Identities
- WEST 3230 - The Chicano Community
- WEST 3360 - U.S. Latina/o Literature
- WEST 3380 - Caribbean Literature, History, and Theory
- WEST 3490 - Youth Gangs

- WEST 3520 - History of Latinos in the United States
- WEST 3580 - Immigrant Histories
- WEST 3990 - Readings in Multiethnic Literature
- WEST 4170 - The Empire Strikes Back: Postcolonial Literature, History, and Theory
- SPAN 3000 - Spanish Grammar and Composition **or**
- SPAN 3010 - Advanced Spanish Conversation and Composition

No more than two of the following courses may be applied to the four-course total.

- SPAN 4210 - Hispanic Heritage of Colorado
- SPAN 4420 - Hispanic/Latino US Literature
- SPAN 4430 - Hispanic US Drama
- SPAN 4440 - Hispanic, Chicano/a, and Mexican-American Literature

Additional courses may be offered which can count toward the certificate. These courses must be approved in advance by the coordinator.

NATIVE AMERICAN AND INDIGENOUS STUDIES UNDERGRADUATE CERTIFICATE (WEST)

Coordinator: Dr. Janice M. Gould, ACAD 408
Email: jgould@uccs.edu
Ph: (719) 255-5147

The Women's and Ethnic Studies program (WEST) has a strong emphasis in diversity and social justice issues, highlighting race and ethnicity, gender, sexuality, class, disability and environmental justice. An area that we are developing within the program is Native American and Indigenous Studies, which investigates not only American Indian issues but also the concept of Indigenous knowledge worldwide, with special emphasis on Indian Nations within the United States, First Nations in Canada, and Pacific Islanders.

Completion of a certificate in Native American and Indigenous Studies can be beneficial for enhancing future career options and interests. It is marketable to a wide variety of employers and institutions, including specific American Indian tribes and tribal organizations, Native American communities, environmental organizations, libraries, archives, and museums, Government organizations (state and national parks, Bureau of Indian Affairs, National Museum of the American Indian), and graduate programs and professional schools (for example, Anthropology, Art History, Museum Studies, Environmental Studies, Education, and Law). Specializing in Native American and Indigenous Studies also provides students with opportunities for networking and mentoring.

GENERAL REQUIREMENTS

To enroll in the certificate program, get the application as a PDF from the WEST website (http://www.uccs.edu/~west/), from the coordinator, or from the WEST office: ACAD 406. Ph: (719) 255-4553. Meet with the coordinator to turn in the completed application as soon as possible after completing the certificate prerequisite.

- Independent studies may not be used to earn this certificate.
- All courses be WEST courses or cross-listed with WEST courses.
- A minimum grade of 2.0 (C) is required for each course applied to the certificate
- Courses counted toward this certificate may not count toward other WEST certificates.

In order to complete the certificate program, students are required to submit to the coordinator a transcript and a five-page, typewritten self-reflective statement evaluating her/his perceptions regarding the knowledge

gained in the concentration and implications for future scholarly and professional work. The certificate will be mailed to recipients upon completion of a certificate audit by the coordinator, and graduation.

COURSE REQUIREMENTS

Complete 12 credit hours, 9 of which must be upper-division (3000+ level), of required WEST courses.

- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement **or**
- WEST 2070 - Foundations in Native American Studies

  Complete two to three of the following courses (6-9 credit hours).

- WEST 3300 - Methodologies in Women's and Ethnic Studies
- WEST 4100 - Native American Perspectives on Museums
- WEST 4120 - Indigenous Views on Sustainability: All My Relations
- WEST 4280 - Native American Philosophical Thought

  One of the following courses may be taken (instead of the third course from the above list) to complete the 12 credit hour requirement.

- WEST 3220 - Native Communities
- WEST 3250 - The Prehistory and History of Native American Cultures of the Southwest
- WEST 3420 - North American Indians
- WEST 3820 - Native American Languages and Cultures
- WEST 4340 - Indigenous Arts of the Americas
- WEST 4400 - Indigenous Peoples and Cultures of the Southwest

  Additional courses may be offered which can count toward the certificate. These must be approved in advance by the coordinator or WEST program director. See the WEST website for an updated course list.

WOMEN'S AND ETHNIC STUDIES (WEST) MINOR

GENERAL REQUIREMENTS

- 18 credit hours of WEST coursework, 9 of which must be upper-division (3000+ level).
- All courses must be completed with a grade of C or better.

COURSE REQUIREMENTS

- WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement
- Complete five WEST elective courses. At least three must be upper-division (3000+ level).

WRITING PORTFOLIO

FACULTY

- *Director, Writing Across the Curriculum/Portfolio Assessment & Assistant Professor Attendant Rank:* Michelle Neely

To demonstrate that they have achieved proficiency in written communication, all UCCS students will submit samples of work they have completed for other courses. This must be done at least one full semester prior to

graduation. In order to submit the writing portfolio, students will register for PORT 3000 - Writing Portfolio Assessment, a 0-credit hour course, and follow emailed instructions about the submission process. For more information, visit http://www.uccs.edu/~writingportfolio/.

Phone: (719) 255-4038
Email: portfoli@uccs.edu

LETTERS ARTS, AND SCIENCES PROGRAMS OF STUDY TABLE

Department/ Program	Minor	Bachelor of Arts	Bachelor of Science	Bachelor of Innovation	Accel. Bachelors Masters	Master of Arts	Master of Sciences	PhD	Certificate
Applied Science								PhD ^	
Anthropology	Minor	BA							
Biochemistry	Minor	BA	BS						
Biology	Minor	BA	BS				MSc		
Chemistry	Minor	BA	BS		BS/MSc BA/MSc		MSc		
Classics	Minor								
Cognitive Archaeology									(U) (G)
Cognitive Studies	Minor								(U)
Communication		BA				MA			
Digital Filmmaking and Media Arts	Minor								
General Communication	Minor								
Leadership Studies	Minor								
Media Studies	Minor								

Organizational and Strategic Communication	Minor								
Disability Studies									(U) (G)
Distributed Studies**		BA							
Economics	Minor	BA							Economic Education (G)
Political Economy	Minor								
English		BA							
Creative Writing	Minor								
Literature	Minor								
Rhetoric & Writing	Minor								
Professional and Technical Writing	Minor								(U) (U)
Geography and Environmental Studies	Minor	BA				MA (Applied Geography)			GIScience (U)
Geology	Minor								
History	Minor	BA				MA			
Languages & Cultures									
American Sign Language	Minor								
French	Minor								
European Studies									(U)
German	Minor								
Japanese	Minor								

Spanish	Minor	BA							
Mathematics	Minor		BS				MS (Applied Math) MSc	PhD^	
Statistics	Minor								
Mathematics as a Liberal Art	Minor								
Organizational Lead-ership & Professional Development	Minor								
Philosophy	Minors	BA							
Physics	Minor		BS				MSc	PhD^	
Energy Science	Minor								
Political Science	Minor	BA							
Political Economy	Minor								
Pre-Law	Minor								
Psychology	Minor	BA				MA		PhD * PhD *	
Gerontology	Minor								
Sociology	Minor	BA			BA/MA	MA			Advanced Research Methods (G) Criminology & Justice Studies (U) Social Dimensions of Health & Health Care (U) Sociology of Diversity (U) (G) Teaching Sociology (G)
Sustainable Development	Minor								

Visual & Performing Arts (VAPA)	Minor	BA							
Art History	Minor	VAPA, BA							
Dance	Minor								
Film Studies	Minor	VAPA, BA							
Museum Studies & Gallery Practice	Minor			BI					
Music	Minor	VAPA, BA		BI					
Contemporary Music Composition & Sound Design	Minor								
Music Performance	Minor								
Contemporary Music History	Minor								
Theatre	Minor								
Visual Arts (Studio)	Minor	VAPA, BA							
Women's & Ethnic Studies	Minor	BA		BI					Gender & Sexuality Studies (U) Global Studies (U) Latino/a Studies (U) Native American & Indigenous Studies (U)

^PhD options in Interdisciplinary, Mathematics, and Physics
* PhD in Clinical Psychology with a curricular emphasis in Geropsychology or Trauma
** Distributed Studies majors include: Business Economics, Justice Studies and Public Administration
(U) Undergraduate Certificate
(G) Graduate Certificate

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences

GENERAL INFORMATION

University Hall
Telephone (719) 255-4420
www.uccs.edu/~bethel

MISSION

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences is a distinguished and innovative college providing excellence in education, scholarship, and practice in the health professions.

VISION

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences will provide interdisciplinary leadership for new directions in health promotion and wellness, as well as illness care and disease prevention, in the community and beyond through innovation in education, practice, research, and scholarship for health science professionals.

GOALS

- Provide high quality comprehensive undergraduate nursing, graduate nursing, and health sciences educational experiences designed to prepare students to meet the present and future health care needs and expectations of the public and to excel personally and professionally as local and global citizens
- Graduate culturally competent health care professionals who value diversity and lifelong learning and are prepared for leadership roles in a broad array of health care environments
- Integrate technology into teaching/learning, research, and operational processes
- Invest in health care scholarship, practices, and educational processes that integrate the academic expectations/requirements of the faculty, student learning opportunities, and the health care needs of the community
- Create a climate of innovation and entrepreneurship that fosters excellence in health care practice, research, and scholarship

ACCREDITATION

The Undergraduate Nutrition program is accredited by the Accreditation Council for Education in Nutrition and Dietetics. The Baccalaureate Nursing Program is approved by the Colorado State Board of Nursing. The Baccalaureate in Nursing, Master's in Nursing, and DNP programs are accredited by the Commission on Collegiate Nursing

Education. The College also holds membership in the Accreditation Council for Education in Nutrition and Dietetics, the Colorado Association of Colleges of Nursing, the Colorado Council of Nurse Educators, the American Association of Colleges of Nursing, and Sigma Theta Tau (Xi Phi Chapter). The undergraduate Strength & Conditioning option is a recognized education program by the National Strength & Conditioning Association.

FACULTY

Dean: Nancy Smith; **Associate Dean:** Deborah Kenny; **Chairs:** Jacqueline Berning, Amy Silva-Smith; **Professors, Tenure Track:** Jacqueline Berning, Kathryn Blair, Mary Ann Kluge, Nancy Smith; **Professor Emerita:** Mary Enzman-Hines, Jenenne Nelson; **Associate Professors, Tenure Track:** Melissa Benton, Amanda Elder, Andrea Hutchins, Barbara Joyce, Deborah Kenny, Nanna Meyer, Deborah Pollard, Amy Silva-Smith; **Assistant Professors, Tenure Track:** Jay Dawes, Helen Graham, Margaret Harris, Morgan Lee, Jennifer Pharr; **Associate Professors, Clinical Teaching Track:** Craig Elder, Jeff Spicher; **Assistant Professors, Clinical Teaching Track:** Kerry Peterson, Lynn Phillips, Carole Traylor; **Clinical Instructor:** Jennifer Jones; **Senior Instructors:** Lynne Bryant, K.C. Craig, Sue Davis, Ben Galatzan, Eileen Gerrard-Gough, Sherry Lee, Denise Millot, Kim Schenck; **Instructors:** Gina Burton, Sherry Farley, Susan Finke, Susan Garrett, Cheryl Hawkinson, Margaret Hunt, Jessica Kirby, Michelle LeCompte, Sherry McCormick, Janol Montroy, Denise Ostovich, Deborah Pina-Thomas, Mysha Tompkins, Deb Tuffield, Mary Claire Wahl.

PROGRAMS OF STUDY

The programs at the undergraduate and graduate level that are available for completion through the University of Colorado Colorado Springs are listed on the Programs of Study table at the end of this chapter.

BETH-EL ACADEMIC POLICIES

GENERAL ACADEMIC POLICIES

All students are responsible for knowing and following the provisions set forth in this Catalog, in the Registration Handbook, and in the College Student Handbooks. It is also the responsibility of the student to know and observe program requirements and deadlines.

The Catalog that governs a student's graduation requirements is the one in effect at the time of a student's most recent admission into the college of the student's degree program. The academic policies and regulations stated herein are in effect at the time this Catalog is published but may be subject to change.

In an effort to regularly enhance the programs offered as well as meet the needs of our students, changes are made periodically to the curricula. These changes may not be reflected in this Catalog. Students are encouraged to visit the website and the student handbook for current information.

Background Check and Drug Screening

All nursing and health science students participating in any clinical/practicum placement will be required to participate in a background check at the time of admission or first clinical/practicum course or as directed. Drug screens are also required of all nursing students. If the student is unable to pass or successfully appeal a negative background check, he/she will not be able to continue in the course and the program. Inability to participate in clinical/practicum experiences will force withdrawal from nursing or health science programs.

Computer Competency Requirements

Students are expected to have basic computer skills upon entering the College. If not, students can take a computer literacy course to count for general education elective credit.

Course Pass/Fail Registration

With the exception of NURS 2990 or 3990, students in the College of Nursing and Health Sciences may not use courses taken on a pass/fail basis to satisfy degree requirements.

Grading Policies

Incomplete Grades: Please refer to the Academic Policies, Registration, and Records section of this Catalog for an explanation of incomplete grades.

Standards of Performance: Undergraduate

To remain in good academic standing, undergraduate students must maintain a cumulative CU grade point average of 2.0 or better for all courses attempted. In addition, no course grade below a C- is applicable to the degree program. For undergraduate nursing students, no course grade below a C is allowed if the course is a required health science or nursing course.

Probation and Suspension Policy

Academic Probation for Nursing Prep Students
Students may be placed on academic probation if their CU GPA falls below 2.0 or if they receive a grade below a C in required health science or nursing courses for the first time. They may continue with required courses unless the failed course/courses are prerequisites for upcoming courses. In that case, the failed course/courses must be repeated prior to progressing. If the failed course/courses are general education courses, the students must meet with the Advisor in Academic Advising to create a plan for future success. Students may remain on academic probation for a maximum of three semesters. If, by the end of their third semester of probation, their CU GPA has not been raised to 2.0 or better, they will be subject to suspension from the College. **Note:** For Nursing, please consult the Nursing Student Handbook policies.

Academic Probation for Health Sciences Students
Students may be placed on academic probation if their CU GPA falls below 2.0 or if they received a grade below a C- in required health science courses for the first time. They may continue with required courses unless the course/courses in which they received a grade below a C- are prerequisites for upcoming courses. In that case, the course/courses in which they received a grade below a C- must be repeated prior to progressing. If the course/courses in which they received a grade below a C- are general education courses, the students must meet with the Advisor in Academic Advising to create a plan for future success. Students may remain on academic probation for a maximum of three semesters. If, by the end of their third semester of probation, their CU GPA has not been raised to 2.0 or better, they will be subject to suspension from the College.

Academic Probation for Health Sciences Students in the Nutrition Option
Students in the Nutrition Option may be placed on academic probation if their CU GPA falls below 2.8 or if they receive a grade below a C- in any required courses for the first time. They may continue with required courses unless the course/courses in which they received a grade below a C- are prerequisites for upcoming courses. In that case, the course/courses in which they received a grade below a C- must be repeated prior to progressing. If the course/courses in which they received a grade below a C- are general education courses, the students must meet with the Advisor in Academic Advising to create a plan for future success. Students may remain on academic

probation for a maximum of two semesters. If, by the end of their second semester of probation, their CU GPA has not been raised to 2.8 or better, they will be subject to suspension from the College.

Probation for Nursing Students
Students who hold a clinical nursing seat in the nursing program may be placed on academic probation if their CU GPA falls below 2.0 or if they receive a grade below a C in required health science or nursing courses. Unsatisfactory clinical performance may also result in student clinical probation. The student must consistently improve all clinical performance ratings to satisfactory by the date determined by the clinical faculty member to pass the course. It is possible to receive a failing grade in clinical without having previously been placed on probation. Clinical failure constitutes failure of the entire course, regardless of academic scores on theory content.

Academic Suspension for Undergraduate Nursing Students
Students must maintain a "C" (74%) or better in all required nursing courses. Students with one course failure (this applies only to NURS XXXX, non-elective, 3 credit or greater classes), including failures related to safety or professional conduct in any undergraduate nursing option, can no longer progress in the nursing program. If students incur a course failure they may appeal once through the Admissions and Progressions Committee for continuation in the nursing program.

All first and second year courses must be completed before progressing to NURS 3100 or NURS 3200. If a failure to progress is greater than one academic year, the student must reapply to the nursing program.

Academic Suspension for Health Sciences Students
Receiving a grade below a C- for two required health sciences core and/or specialty courses of two credits or greater will result in dismissal from the College. Students may petition in writing to the Department Chair for re-admission to the College within 30 calendar days. Dismissal from the Health Sciences Program does not imply dismissal from the University of Colorado Colorado Springs.

Undergraduate Graduation Requirements

To be eligible to graduate with a BS in the College of Nursing and Health Sciences, a student must:

- Be admitted into the degree major at least 30 credits prior to graduation
- Grades: see Standards of Performance above
- Complete the Writing Portfolio as outlined in the Academic Policies, Registration, and Records section of this Catalog
- Satisfactorily complete any previously identified University designated assessments

UNDERGRADUATE ADMISSION

NURSING

Students who have a previous conviction for a felony as well as some misdemeanors may not be eligible to be placed in clinical assignments and may be ineligible for a license as a Registered Nurse in Colorado, even if they complete a degree in nursing. A Background Check Policy is provided in the Beth-El Nursing Student Handbook and on the Beth-El Nursing webpage. Contact the Colorado State Board of Nursing for additional information prior to application to Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences.

Admission Criteria for Students Applying as Freshmen

- An un-weighted GPA of 3.0 or better in high school course units
- Composite score of 24 or higher on the ACT or a total score of 1080 on the SAT

Nursing Prep Students

Students who meet admission criteria are admitted into the Nursing program under Nursing Prep. Nursing Prep students complete general education requirements.

There are limited clinical facilities in Colorado Springs, which limits how many students we can accept into clinical courses. Students in the Nursing Prep major are expected to complete all first level courses maintaining a GPA of 3.0. Individual progress will be reviewed every semester by the Academic Advisor. Once the student has completed the first level courses with a GPA of 3.0, the student should contact the Academic Advisor in Academic Advising to apply to the nursing major.

This application would include the following:

- Completion of the Traditional BSN Clinical Application
- Completion of a background check
- Completion of the Admission Assessment Exam

The Admission Assessment Exam tests the course material the student has completed during the first level coursework. The admission committee will review all applicants at that time to determine who will be accepted as a nursing major. Students who are accepted as a nursing major will start their second year coursework and continue to progress through the curriculum. Those students who are not selected for admission may change their major to another field of study, apply to another school, or choose to apply the following semester. Students are only allowed to apply twice and will be considered along with all of the other students applying with no preferential consideration because they are seeking admission again. Due to the limited number of clinical spots available, selection will be determined based on GPA and grade on the Admission Assessment Exam. More than four years may be required to complete the program. Nursing Prep students must meet with their Academic Advisor prior to registration for any semester.

If a Nursing Prep or Nursing Intent Student opts to take a NURS XXXX course prior to admission to a Traditional Clinical BSN seat and earns a C- or lower, the student's performance will be considered during the final selection process and may jeopardize the student's standing in the application cohort.

Nursing Intent Students

Students not admitted directly into the Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences may still be admitted to UCCS in University Studies. Students are encouraged to complete the pre-requisite courses and maintain a minimum cumulative GPA of 3.0. When ready to apply for clinical nursing, the student should meet with the Nursing Advisor in Academic Advising. Eligibility to apply and be considered for a clinical nursing seat would include the completion of:

- Traditional BSN Clinical Application
- Background check
- Admission Assessment Exam

The Admission Assessment Exam tests the course material the student has completed during the first level coursework. The Admissions and Progressions Committee will review all applicants at that time to determine who will

be accepted as a nursing major. Admission eligibility to the University of Colorado Colorado Springs does not constitute a guarantee of enrollment in any specific nursing program.

If a Nursing Prep or Nursing Intent Student opts to take a NURS XXXX course prior to admission to a Traditional Clinical BSN seat and earns a C- or lower, the student's performance will be considered during the final selection process and may jeopardize the student's standing in the application cohort.

Accelerated BSN Program

Students who have completed a bachelor's degree in a non-nursing field may be eligible to apply for the accelerated BSN program. The cumulative GPA must be at least 2.5 or higher and a passing score on the Admission Assessment Exam in order to be considered for this program. All required general education, pre-requisite courses and degrees must be completed by the end of the fall semester of the application year. All science courses should be less than 10 years old. Waivers of the 10 year requirement may be considered on a case-by-case basis upon verification of applicable work experience in the science field. The applicant has the responsibility to initiate the request for a waiver and supporting documentation as requested to the nursing recruiters or nursing advisors. Contact accbsn@uccs.edu for specific information.

RN to BSN and Dual Enrollment

RN to BSN
A registered nurse with an associate degree or diploma can choose the RN to BSN curriculum option. Beth-El participates in the Colorado articulation plan which facilitates mobility from one educational program to another. Each student will have variations in the plan due to completion of coursework prior to entering Beth-El or due to scheduling variation (full-time or part-time). RN students are advised to apply to the nursing program prior to completion of general education requirements. Include a copy of RN License with application and a letter from the clinical manager stating that the applicant has completed 1,000 clinical hours in the last 3 years and a 2.5 GPA. If the applicant is within 3 years of graduation a letter is not necessary. This program is offered online; pre-requisites are not necessarily offered online. Check our website for current authorized states.

Dual Enrollment
The Dual Enrollment is for students who are currently enrolled in a Colorado associate degree nursing program. After completing first semester courses, the individual may apply to start coursework towards a bachelor's degree in nursing while completing their associate degree in nursing. Dual Enrollment requires a cumulative 2.5 GPA. Check website for current authorized states.

HEALTH SCIENCES

Admission Criteria for Students Applying as Freshmen

- Rank in the upper 40% of high school graduating class
- An un-weighted GPA of 2.8 or better in suggested high school course units
- Composite score of 24 on the ACT or a total score of 1080 on the SAT

Freshmen applicants whose records vary in any way from the above admissions criteria will be considered on an individual basis by evaluation of their overall academic records including (a) the quality of their high school program of study; (b) the level of their college entrance test scores (SAT or ACT); and (c) any information unique to an individual situation.

Suggested High School Course Units for Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences Students

English	4 years
Math-College Prep	3 years
Chemistry	1 year
Biological Science	1 year
Non-lab Science	1 year
Social Sciences	2 years
Foreign Language	2 years
Academic Electives	1 year

ALLIED HEALTH COMPLETION OPTION

This upper division completion option is available for students who have completed training in allied health areas such as radiation technology, dental hygiene, medical technician, paramedic, respiratory therapy, etc. Students must complete a certificate or an associate's degree in an allied health area from an accredited program other than UCCS that includes at least 40 training credit hours in order to complete the portfolio requirement of this option. Since this is a completion option, students are not admitted to this option as freshman, and must submit their allied health portfolio before being admitted.

TRANSFER STUDENTS: NURSING

Students who have attended a collegiate institution other than CU may apply as transfer students if they have completed 24 credit hours of transferable college level work. Applicants for the nursing program must have a cumulative GPA of 3.0 or better. Transfer students must be in good standing and eligible to return to all institutions previously attended. While transferability of credit is determined by the Admissions Office, final application to the degree program is determined by the College of Nursing and Health Sciences. Students who meet admission criteria are admitted into the Nursing program under Nursing Prep. Students who are admitted to the Nursing Preparation Program with a 3.0 GPA must maintain a 3.0 GPA. Once the first level coursework is completed with a 3.0 GPA, they may apply for admission to the nursing program as a nursing major.

This application would include the following:

- GPA of 3.0 or greater
- Completion of Intent to Apply
- Completion and passing of a criminal background check
- Completion of a Pre-Admission Assessment Exam

TRANSFER STUDENTS: HEALTH SCIENCES

Students who have attended a collegiate institution other than UCCS or who have been admitted to a different college within UCCS may apply to transfer into the Health Sciences program once 30 credit hours have been completed with a cumulative GPA of 2.5 or better. Students who have completed 30 or more credits at UCCS without achieving a cumulative GPA of 2.5 or better will be reviewed on a case-by-case basis to determine if additional hours may be completed before they are no longer eligible for admission to Health Sciences. While transferability of credits is determined by the Office of Admissions, final application to the degree program is determined by the Department of Health Sciences.

TRANSFER STUDENTS: NUTRITION OPTION IN HEALTH SCIENCES

Students who have attended a collegiate institution other than UCCS, or who have been admitted to a different college within UCCS, may apply to transfer into the Nutrition Option in the Health Sciences program once 30 credit hours have been completed at UCCS with a cumulative GPA of 2.8 or better and their cumulative GPA, including transfer courses, is 2.8 or better. Students who have completed 30 or more credits at UCCS without achieving a cumulative GPA of 2.8 or better will be reviewed on a case-by-case basis to determine if additional hours may be completed before they are no longer eligible for admission to the Nutrition option in Health Sciences. While transferability of credits is determined by the Office of Admissions, final application to the degree program is determined by the Department of Health Sciences.

TRANSFER STUDENTS: ALLIED HEALTH COMPLETION OPTION

Students who have attended a collegiate institution other than UCCS or who have been admitted to a different college within UCCS may apply to transfer into the Allied Health Completion Option in the Health Sciences program once 30 credit hours have been completed with a cumulative GPA of 2.5 or better AND their allied health portfolio has been approved by the Department of Health Sciences. Students who have completed 30 or more credits at UCCS without achieving a cumulative GPA of 2.5 will no longer be eligible for admissions to Health Sciences due to ongoing inability to meet the academic standard for admission Students who have completed 30 or more credits at UCCS without meeting the academic standard for admission to Health Sciences can request a review of their academic record on a case-by-case basis to determine if additional hours may be completed to try and meet the academic standard for admission to Health Sciences. While transferability of credits is determined by the Office of Admissions, final application to the degree program is determined by the Department of Health Sciences.

RETURNING STUDENTS: NURSING

Students who were previously admitted into the Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences and who must reapply, must meet the admission criterion of a cumulative GPA of 3.0 or better. If no clinical courses have been completed, students will be readmitted into Nursing Prep to complete general education requirements and await availability of clinical spot. If clinical courses have been completed, assessment of clinical skills may be required with determination of clinical placement based upon the assessment and availability of clinical spot.

EXTENDED STUDIES

The Extended Studies Program for the Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences, BEES, provides a variety of accessible educational opportunities in traditional and non-traditional formats with a focus on career development as well as advancement and enhancement of personal knowledge and professional experience. Additionally, BEES offers the acquisition of additional university credit for licensure, certification, and re-certification purposes. Many BEES credit classes are transferable to UCCS degree programs.

BEES serves as an educational outreach arm to the communities and individuals it serves, with on-campus, online and hybrid course formats. Courses are offered for both semester-hour credit and continuing educational units. Students benefit from outstanding instruction and the experience of participating in a university environment, whatever their educational background or experience. BEES also administers the Sexual Assault Nurse Examiner (SANE) **education,** RN-Refresher, Spanish/English Medical Interpreter, Community Paramedic**, and** Medical Laboratory Science (MLS) programs.

BEES is a self-funded program and part of the Colorado Statewide Extended Campus. Contact by phone at (719) 255-4651 or by email at bees@uccs.edu. Additional program information and a list of current courses may be found at http://www.uccs.edu/bees.

CERTIFICATE PROGRAMS

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences offers four levels of certificate programs: **Professional Development Non-Credit, Undergraduate, Graduate, and Post-Master's Certificates**.

Students with master's degrees in nursing may apply for these certificate programs: family, adult/gerontology, and nursing education. Please request information from the College.

Certificate programs can be taken through the College's department of Extended Studies.

Additional certificate program offerings:

- Forensic Nursing
- Disaster Public Health

HEALTH SCIENCES

EXERCISE SCIENCE, BS

The Bachelor of Science in Exercise Science provides undergraduate education for individuals seeking careers in a wide variety of health fields. Some of the most common career and job opportunities under the umbrella of exercise science include: athletic trainer, exercise physiologist, medical physician, occupational therapist, physical therapist, physician assistant, cardiac rehabilitation specialist, and strength and conditioning specialist. The degree will prepare students for advanced professional degree programs. Students may enroll in a broad exercise major, or select the Strength and Conditioning Option. Students interested in pursuing the Master of Science in Athletic Training through the concurrent degree path can select the Strength and Conditioning, Athletic Training Prep Option.

LEARNING OUTCOMES

- Students will understand the physiological, anatomical, bio-mechanical, nutritional, and psychological principles that govern and influence exercise and sport performance.
- Students will understand the application of physiological, anatomical, bio-mechanical, nutritional, and psychological factors that contribute to exercise, physical activity, and sport performance.
- Students will be able to measure a variety of fitness and sports performance-related values in a variety of individuals.
- Students will be able to demonstrate and apply the knowledge and skills of research design, measurement, and evaluation used in the field of exercise science.
- Students will be able to demonstrate reasoning, problem solving, and critical thinking in the context of exercise science.

GENERAL EDUCATION COURSE REQUIREMENTS (22 CREDITS)

Must include an Arts, Humanities, and Culture and Sustainability elective.

- GPS 1010 - Gateway Program Seminar
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- MATH 1050 - Elementary Functions of Calculus
- PSY 1000 - General Psychology
- HSCI 3630 - Culture and Health

EXERCISE SCIENCE OPTION

Course Requirements (38 credits)

- BIOL 1300 - General Biology: Organismic Biology
- BIOL 1310 - General Biology: Organismic Biology Laboratory
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- BIOL 3300 - Exercise Physiology
- BIOL 4550 - Biomechanics/Kinesiology
- HSCI 2060 - Health Science Statistics
- HSCI 2070 - Nutrition for Health Professionals
- **or**
- BIOL 2050 - Nutrition for Health Sciences
- HSCI 3201 - Health Behavior Change
- HSCI 4670 - Health Assessment
- HSCI 4950 - Exercise Testing and Prescription

Auxiliary Requirements (20 credits)

- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- PES 1010 - Physics for Life Science I - Algebra Based
- PES 1150 - General Physics Lab I Algebra Based
- PES 1020 - Physics For Life Science II
- PES 2150 - Physics Lab II Algebra Based

Open Electives (40 credits)

40 credit hours of electives must be taken for the Exercise Science Degree.

- A minimum of 6 credit hours must come from HSCI
- A minimum of 6 credit hours must come from BIOL (excluding botany and ecology)

STRENGTH AND CONDITIONING OPTION

This option provides students with the necessary knowledge, hands-on skills, and abilities to enhance health, fitness, and athletic performance. Successful completion of this option will result in a Bachelor of Science in

Exercise Science: Strength and Conditioning Option, and completion of the National Strength and Conditioning Association Education Recognition Program.

Course Requirements (22 credits plus 18 credits of electives)
Students in the Strength and Conditioning Option must take the following courses in place of Open Electives (counts towards the 6 credits of HSCI electives).

- HSCI 3310 - Applied Sport and Exercise Psychology
- HSCI 3330 - Sports Nutrition: Basic Principles
- **or**
- BIOL 4300 - Advanced Nutrition
- HSCI 3460 - Organization and Administration
- HSCI 4030 - Sports Specific Training Principles and Techniques
- HSCI 4031 Sports Specific Training Principles and Techniques Lab
- HSCI 4610 - Sports Injuries and Prevention
- HSCI 4490 - Exercise Considerations for Special Populations
- HSCI 4620 - Internship in Health Sciences

STRENGTH AND CONDITIONING: ATHLETIC TRAINING PREP OPTION

This option prepares students for entry into the Master of Science in Athletic Training* (MSAT) at UCCS. (Admission into the MSAT is not guaranteed.) Students will have the opportunity to enter a 5-year concurrent degree program, ultimately leading to both the Bachelor of Science in Exercise Science: Strength and Conditioning Option and the Master of Science in Athletic Training. Students will also complete the National Strength and Conditioning Association Education Recognition Program.

Course Requirements (22 credits plus 18 credits of electives)
Students in the Athletic Training Prep Option must take the following courses in place of Open Electives (counts towards the 6 credits of HSCI electives).

- HSCI 3310 - Applied Sport and Exercise Psychology
- HSCI 3330 - Sports Nutrition: Basic Principles
- **or**
- BIOL 4300 - Advanced Nutrition
- HSCI 4030 - Sports Specific Training Principles and Techniques
- HSCI 4031 Sports Specific Training Principles and Techniques Lab
- HSCI 4620 - Internship in Health Sciences
- HSCI 5490 - Exercise Considerations for Special Populations
- HSCI 6120 - Health Science Leadership
- HSCI XXXX Foundation of Athletic Training I (course in development)

Note: The Master of Science in Athletic Training (MSAT) program will be a professional preparation program beginning Fall 2018, leading to eligibility for national certification as an Athletic Trainer through the Board of Certification, Inc. (BOC) **upon successful award of accreditation status.** (The program will begin seeking CAATE accreditation status in July, 2018, anticipating a decision in Spring 2020.)

Total Credits: 120

HEALTH CARE SCIENCE, BS

The Bachelor of Science in Health Care Science prepares the graduate for professional practice in health-related settings. The program includes a foundation in general education as well as a broad understanding of health care delivery systems.

Options within the program to develop advanced specialization in a specific or chosen discipline include Allied Health Completion, Health and Wellness Promotion, Medical Laboratory Science, Nutrition, or Senior Fitness Instruction. An upper division completion option is available in allied health areas such as radiation technology, dental hygiene, or respiratory therapy for students with associate degrees or certificates in these areas.

LEARNING OUTCOMES

- Students will demonstrate the knowledge necessary to function in their health sciences area.
- Students will demonstrate the ability to assess, plan, and implement interventions in their chosen discipline.
- Students will demonstrate the ability to incorporate research and theory in health sciences practice.
- Students will recognize improvements in written and oral communication.
- Students will find their degree program/course of study to be of high quality and useful.

ALLIED HEALTH COMPLETION OPTION - BS IN HEALTH CARE SCIENCE

An upper division completion option is available for students who have completed training in allied health areas such as radiation technology, dental hygiene, medical technician, paramedic, respiratory therapy, etc. Students must have completed a certificate or an associate's degree in an allied health area from an accredited program other than UCCS that included at least 40 training credit hours in order to complete the portfolio requirement of this option. Students must submit the following allied health portfolio components to the Department of Health Sciences and have their allied health portfolio approved by the Department of Health Sciences before they can declare this option:

1. Transcripts from an accredited institution or program documenting at least 40 credits of training during the program
2. A current resume
3. A copy of the student's certificate, registration or license to practice in their allied health field

Students then complete the health science program listed below in order to be awarded a bachelor's degree, the BS in Health Care Science.

General Education Course Requirements

- Humanities Elective (3 credits)
- Sustainability Elective (3 credits)
- BIOL 1010 - Introduction to Human Biology
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- GPS 1010 - Gateway Program Seminar
- MATH 1040 - College Algebra
- PSY 1000 - General Psychology

Credits: 24

Health Science Prerequisites

- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- CHEM 1201 - Introduction to Chemistry
- CHEM 1211 - Introduction to Organic and Biochemistry
- HSCI 2060 - Health Science Statistics

Credits: 19

Health Science Core Requirements

- HSCI 3201 - Health Behavior Change
- HSCI 3520 - Health Communication
- HSCI 3630 - Culture and Health
- HSCI 4010 - Health Science Research

Credits: 12

Allied Health Option Requirements

- Upper Division HSCI Electives (12 credits)
- Accredited Allied Health Program Portfolio (40 credits)
- HSCI 4810 Allied Health Completion Capstone (1 credit)
- Natural Science Electives (6 credits)
- Electives 3000+ (6 credits)

Credits: 65

Total Program Credits: 120

HEALTH AND WELLNESS PROMOTION OPTION - BS IN HEALTH CARE SCIENCE

General Education Course Requirements

- Explore Elective
- Sustainability Elective
- BIOL 1010 - Introduction to Human Biology
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- GPS 1010 - Gateway Program Seminar
- MATH 1040 - College Algebra
- PSY 1000 - General Psychology

Credits: 24

Health Science Prerequisites

- PES 1010 - Physics for Life Science I - Algebra Based
- HSCI 1020 - Personal Fitness and Wellness
- CHEM 1201 - Introduction to Chemistry
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- HSCI 2060 - Health Science Statistics

Credits: 22

Health Sciences Core Requirements

- HSCI 3201 - Health Behavior Change
- HSCI 3520 - Health Communication
- HSCI 3630 - Culture and Health
- HSCI 4010 - Health Science Research

Credits: 12

Health and Wellness Promotion Option Requirements

- HSCI 1000+ Activity Course
- HSCI 3000+ Health Science Electives
- BIOL 3300 - Exercise Physiology
- HSCI 2010 - Intro to Health Science Professions
- HSCI 2070 - Nutrition for Health Professionals
- HSCI 4050 - Obesity and Weight Management
- HSCI 4580 - Physical Activity and Public Health
- HSCI 4590 - Concepts of Health and Disease
- HSCI 4620 - Internship in Health Sciences
- HSCI 4640 - Program Planning
- HSCI 4670 - Health Assessment
- HSCI 4830 - Intervention Methods and Strategies
- HSCI 4840 - Program Evaluation
- HSCI 4950 - Exercise Testing and Prescription
- BIOL 4220 - Epidemiology

Credits: 62

Total Credits: 120

MEDICAL LABORATORY SCIENCE/MED TECH OPTION - BS IN HEALTH CARE SCIENCE

The clinical internship provided in the UCCS Medical Laboratory Science (MLS) program is in conjunction with the University of Nebraska Medical Center. Students are required to attend an 13-week student laboratory in Kearney, Nebraska, and will then return to Colorado Springs for the remaining nine months of clinical training at affiliate hospital laboratories. After the completion of the clinical year, students are eligible to take the American Society of Clinical Pathology (ASCP) Board of Certification exam as a Medical Laboratory Scientist (formerly Medical Technologist or Clinical Laboratory Scientist). The MLS (ASCP) certification allows individuals to practice/work in hospital laboratories throughout the United States.

Students in the UCCS 3+1 MLS option (3 years of the undergraduate curriculum is completed with UCCS and 1 year jointly with UCCS and UNMC) must successfully complete the application and selection process for placement in the clinical year. UCCS 3+1 option students are not guaranteed admission to the clinical year. Deadline for the application for the clinical year is November 30th of the third year.

General Education Course Requirements

- MATH 1350 and BIOL 3000 are required for a UCCS Human Biology major
- Explore and Sustainability Elective
- Explore Elective
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 2090 - Technical Writing and Presentation
- GPS 1010 - Gateway Program Seminar

- MATH 1040 - College Algebra

  or

- MATH 1350 - Calculus I

Credits: 22

MLS Option Requirements

BIOL 2010, 2020, and 3020 are prerequisites for other UCCS courses; recommended but not required by UNMC. BIOL 4350 and 4360 are required for a UCCS Biology major.

- BIOL 2020 - Human Anatomy and Physiology II
- **or**
- BIOL 4360 - Human Physiology
- BIOL 2030 - Microbiology
- **and**
- BIOL 2130 - Microbiology Laboratory
- **or**
- BIOL 3100 - Microbiology: Bacteriology/Mycology
- **and**
- BIOL 3110 - Bacteriology/Mycology Laboratory
- BIOL 3830 - Genetics
- BIOL 3910 - Immunology
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- CHEM 3001 - Organic Chemistry
- CHEM 3002 - Organic Chemistry Laboratory
- CHEM 4211 - Biochemistry
- HSCI 2060 - Health Science Statistics
- HSCI 4080 - Pathophysiology for the Health Sciences (fall only)

Credits: 49

Health Science Core Requirements

- HSCI 3630 - Culture and Health
- HSCI 4010 - Health Science Research

Credits: 6

MLS Professional Requirements

- Summer (student lab in Omaha, Nebraska) 7
- Fall 15
- Spring 21

Credits: 43

Total Program Credits: 120

NUTRITION OPTION - BS IN HEALTH CARE SCIENCE

This program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND). Students may earn the credentials of a Registered Dietitian by completing an ACEND-accredited Dietetic Internship Program (DI) after completion of the Nutrition program, and pass the National Registration Exam for Dietitians.

Verification Statement
To receive a verification statement for completion through the Didactic Program in Dietetics, a student must take a minimum of 25 credits at the 3000 level or above, to include the following courses through the Department of Health Sciences, Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences, University of Colorado Colorado Springs, and have earned academic credit for the remaining coursework listed on the Verification Completion Checklist.

- HSCI 2080 - The Profession of Dietetics
- HSCI 3920 - Community Nutrition
- HSCI 3940 - Nutrition Science and Food Preparation
- HSCI 3950 - Food Systems Management I
- HSCI 4020 - Food Systems Management II
- HSCI 4430 - Advanced Nutrition I
- HSCI 4440 - Advanced Nutrition II
- HSCI 4910 - Dietetic Internship Application Process
- HSCI 4920 - Nutrition Assessment
- HSCI 4930 - Medical Nutrition Therapy I
- HSCI 4940 - Nutrition Practicum
- HSCI 4960 - Medical Nutrition Therapy II

International Students
International students must take a minimum of the following courses from the University of Colorado Colorado Springs:

- HSCI 3920 - Community Nutrition
- HSCI 3940 - Nutrition Science and Food Preparation
- HSCI 3950 - Food Systems Management I
- HSCI 4020 - Food Systems Management II
- HSCI 4430 - Advanced Nutrition I
- HSCI 4440 - Advanced Nutrition II
- HSCI 4920 - Nutrition Assessment
- HSCI 4930 - Medical Nutrition Therapy I
- HSCI 4940 - Nutrition Practicum
- HSCI 4960 - Medical Nutrition Therapy II

Note: If not taken at the University of Colorado Colorado Springs, the equivalent course to HSCI 3920 Community Nutrition must have been completed through an approved/accredited U.S. or Canadian academic program.

Individuals with International Degrees
Individuals with international degrees are encouraged to view the Academy of Nutrition and Dietetics Fact Sheet for additional information about becoming a Registered Dietitian credentialed by the Commission on Dietetic Registration (CDR).

General Education Courses

- Humanities Electives (3 credits)
- General Education Electives (9 credits)
- Explore Elective
- ACCT 2010 - Introduction to Financial Accounting
- BIOL 1350 - General Biology: Introduction to the Cell
- BIOL 1360 - General Biology: Introduction to the Cell Laboratory
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- GPS 1010 - Gateway Program Seminar
- MATH 1040 - College Algebra or higher math course

Credits: 22

Health Science Prerequisites

- Social Science Elective (3 credits)
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- CHEM 1401 - General Chemistry I
- CHEM 1402 - General Chemistry Laboratory I
- CHEM 1411 - General Chemistry II
- CHEM 1412 - General Chemistry Laboratory II
- HSCI 2060 - Health Science Statistics

Credits: 25

Health Science Core Requirements

- HSCI 3201 - Health Behavior Change
- HSCI 3520 - Health Communication
- HSCI 3630 - Culture and Health
- HSCI 4010 - Health Science Research

Credits: 12

Nutrition Option Requirements

- HSCI 3000+ HSCI Elective (6 credits)
- MKTG 3000 - Principles of Marketing
- CHEM 3001 - Organic Chemistry
- CHEM 3002 - Organic Chemistry Laboratory
- CHEM 4211 - Biochemistry
- HSCI 2070 - Nutrition for Health Professionals
- HSCI 2080 - The Profession of Dietetics
- HSCI 3920 - Community Nutrition
- HSCI 3940 - Nutrition Science and Food Preparation
- HSCI 3950 - Food Systems Management I
- HSCI 4020 - Food Systems Management II
- HSCI 4080 - Pathophysiology for the Health Sciences
- HSCI 4430 - Advanced Nutrition I

- HSCI 4440 - Advanced Nutrition II
- HSCI 4910 - Dietetic Internship Application Process
- HSCI 4920 - Nutrition Assessment
- HSCI 4930 - Medical Nutrition Therapy I
- HSCI 4940 - Nutrition Practicum
- HSCI 4960 - Medical Nutrition Therapy II
- PSY 1000 - General Psychology

Credits: 61

Total Program Credits: 120

SENIOR FITNESS INSTRUCTOR OPTION - BS IN HEALTH CARE SCIENCE

General Education Course Requirements

- Explore Elective
- Sustainability Elective
- BIOL 1010 - Introduction to Human Biology
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research (Complete Competency Exam)
- GPS 1010 - Gateway Program Seminar
- HSCI 2060 - Health Science Statistics
- MATH 1040 - College Algebra or higher math course
- PSY 1000 - General Psychology

Credits: 24

Health Science Prerequisites

- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- CHEM 1201 - Introduction to Chemistry
- HSCI 1020 - Personal Fitness and Wellness
- PES 1010 - Physics for Life Science I - Algebra Based
- HSCI 2060 - Health Science Statistics

Credits: 22

Health Science Core Requirements

- HSCI 3201 - Health Behavior Change
- HSCI 3520 - Health Communication
- HSCI 3630 - Culture and Health
- HSCI 4010 - Health Science Research

Credits: 12

Senior Fitness Instructor Option Requirements

- GRNT 3000+ Gerentology Electives (6 credits)
- HSCI 1000-level Activity Elective
- HSCI or GRNT 3000+ Elective
- BIOL 3300 - Exercise Physiology
- BIOL 4550 - Biomechanics/Kinesiology

- GRNT 3000 - Introduction to Gerontology
- GRNT 4620 - Sociology of Aging
- GRNT 4630 - Psychology of Aging
- GRNT 4980 - Professional Field Experience in Gerontology
- HSCI 2010 - Intro to Health Science Professions
- HSCI 2800 - Biomedical Aging: Myths and Realities
- HSCI 4620 - Internship in Health Sciences (9 credits)
- HSCI 4670 - Health Assessment
- HSCI 4740 - Aging, Physical Activity and Health
- HSCI 4950 - Exercise Testing and Prescription
- HSCI 4030 - Sports Specific Training Principles and Techniques
- HSCI 4490 - Exercise Considerations for Special Populations
- HSCI 4830 - Intervention Methods and Strategies
- PSY 3280 - Abnormal Psychology
- or
- PSY 3620 - Developmental Psychology

Credits: 62

Total Program Credits: 120

HEALTH CARE SCIENCE MINORS

Minors are available in two areas of Health Sciences: Health and Wellness Promotion, and Nutrition. The following department guidelines have been established for minor programs from the Health Sciences Department.

- A minimum of 18 credit hours, with grades of C- or better must be taken in a minor area, including a minimum of 9 upper-division credit hours. Additionally, a cumulative GPA of 2.0 must be obtained overall.
- Minor requirements may not be taken pass/fail.
- Students will be allowed no more than 9 credit hours of transfer credit towards a minor.
- Coursework applied towards a minor may also be applied towards general education requirements.
- Prerequisites may be required for some courses listed for the minor, but the prerequisite courses may not necessarily count toward minor hours.
- Please see the Health Sciences Advisor in Academic Advising for any questions regarding the minor.

HEALTH AND WELLNESS PROMOTION MINOR OPTION

Choose from the following courses:

- BIOL 3300 - Exercise Physiology
- BIOL 4550 - Biomechanics/Kinesiology
- HSCI 1020 - Personal Fitness and Wellness
- HSCI 2070 - Nutrition for Health Professionals
- HSCI 3201 - Health Behavior Change
- HSCI 3310 - Applied Sport and Exercise Psychology

- HSCI 3330 - Sports Nutrition: Basic Principles
- HSCI 3520 - Health Communication
- HSCI 4030 - Sports Specific Training Principles and Techniques
- HSCI 4050 - Obesity and Weight Management
- HSCI 4080 - Pathophysiology for the Health Sciences
- HSCI 4580 - Physical Activity and Public Health
- HSCI 4590 - Concepts of Health and Disease
- HSCI 4610 - Sports Injuries and Prevention
- HSCI 4640 - Program Planning
- HSCI 4670 - Health Assessment
- HSCI 4950 - Exercise Testing and Prescription
- HSCI 2010 - Intro to Health Science Professions

NUTRITION MINOR OPTION

Choose from the following:

- HSCI 2070 - Nutrition for Health Professionals
- HSCI 3201 - Health Behavior Change
- HSCI 3280 - Herbal and Dietary Supplements
- HSCI 3330 - Sports Nutrition: Basic Principles
- HSCI 3520 - Health Communication
- HSCI 4050 - Obesity and Weight Management
- HSCI 4060 - Advanced Sports Nutrition and Metabolism
- HSCI 4090 - Food, Culture, Community, and Health
- HSCI 4430 - Advanced Nutrition I
- HSCI 4440 - Advanced Nutrition II

HEALTH CARE SCIENCE, MSC

The Department of Health Sciences offers a program leading to the degree of Master of Science with options in Sports Medicine, Sports Nutrition, and Health Promotion. Graduate students pursue coursework in these areas of study and related disciplines (biology, chemistry), providing the students with a diverse integrated curriculum of study.

MSC HEALTH PROMOTION

The Master of Science degree in Health Promotion is designed to prepare students for advanced study and practice in Health Promotion related areas. Graduates are prepared to take leadership roles in designing, implementing, and evaluating health promotion programs in various public and private/work site agencies at local, state and national levels. The health promotion professionals trained in this program will possess the skills and knowledge to affect lifestyle choices and improve a person's community or organizational health and wellness.

Health Science Requirements (6 credits total)

- HSCI 7020 - Research Methods
- HSCI 7030 - Statistics

Health Science Research Requirements (1-4 credits total)

Thesis Track
- HSCI 7000 - Health Science Thesis

Project Track
- HSCI 6090 - Graduate Research Project

Comprehensive Exam Track
Completion of the Comprehensive Examination and 6 credits of graduate level electives.

Health Promotion Requirements (12-15 credits total)
- HSCI 6040 - Theories in Health Behavior I
- HSCI 6060 - Theories in Health Behavior II
- HSCI 6180 - Program Planning and Implementation in Health Promotion
- HSCI 6220 - Program Evaluation in Health Promotion
- HSCI 6650 - Health Coaching

Health Promotion Electives (9-12 credits total)
- BIOL 5800 - Advanced Exercise Physiology
- HSCI 5030 - Sports Specific Training Principles and Techniques
- HSCI 5050 - Obesity and Weight Management
- HSCI 5200 - Applied Health Promotion Technology
- HSCI 5580 - Physical Activity and Public Health
- HSCI 5760 - Adapted Physical Activity, Recreation, and Sport
- HSCI 6070 - Health Promotion Practicum
- HSCI 6140 - Food, Culture, Community, and Health
- HSCI 6160 - Dietary Supplements
- HSCI 6170 - Special Topics in Health Sciences

Total Credits: 34

MSC SPORTS MEDICINE

The Master of Sciences Degree in Sports Medicine (MScSM) offers two options: Athletic Training and Strength Conditioning. The Athletic Training Track is a post-certification program providing the coursework and practical experience necessary to obtain advanced knowledge and skills in the discipline of Sports Medicine. The degree specifically offers the opportunity for those who are Certified Athletic Trainers (BOC) to build upon their theoretical and clinical competencies. Opportunities are available to gain experience within University Intercollegiate Athletic Programs, and the Secondary School Interscholastic Settings. The Strength & Conditioning Track provides advanced coursework and practical experience necessary to enhance undergraduate concepts through the application of practical skills. Sports performance concepts are applied to diverse athlete groups with additional considerations for exercise modifications with special populations. The degree offers content specific coursework for the strength and conditioning professional and opportunities for hands-on experiences at many premier sites in the community such as the National Strength and Conditioning Association, and Fort Carson - 10th SFG.

Program Prerequisites

For prerequisites to each track within the Sports Medicine program, please visit our website at http://www.uccs.edu/bethel/index.html.

Athletic Training Track

Health Science Requirements (6 credits total)

- HSCI 7020 - Research Methods
- HSCI 7030 - Statistics

Health Science Research Requirements (6 credits total)

Thesis Track

- HSCI 7000 - Health Science Thesis

Project Track

- HSCI 6090 - Graduate Research Project

and one graduate level elective

Comprehensive Exam Track

Completion of Comprehensive Examination and 6 credits of graduate level electives

Sports Medicine Core Requirements (9 credits total)

- HSCI 5060 - Advanced Sports Nutrition and Metabolism
- HSCI 6120 - Health Science Leadership
- HSCI 6600 - Health Behavior and Therapeutic Exercise

Sports Medicine Athletic Training Track Requirements (16 credits total)

- HSCI 6050 - Advanced Evaluation of the Lower Extremity
- HSCI 6080 - Advanced Evaluation of the Upper Extremity
- HSCI 6170 - Special Topics in Health Sciences
- HSCI 6629 - Diagnostic Imaging for Athletic Trainers
- HSCI 6630 - Manual Therapy for Athletic Trainers

and one HSCI/BIOL graduate level elective

Athletic Training Suggested Electives

- HSCI 5030 - Sports Specific Training Principles and Techniques
- HSCI 5050 - Obesity and Weight Management
- HSCI 5350 - Advanced Function Human Anatomy
- HSCI 5490 - Exercise Considerations for Special Populations
- HSCI 5600 - Biomechanics of Musculoskeletal Injury
- HSCI 6160 - Dietary Supplements
- HSCI 6170 - Special Topics in Health Sciences
- HSCI 6240 - Advanced Strength and Conditioning
- HSCI 6700 - Advanced Exercise Science

Strength and Conditioning Track

Health Science Requirements (6 credits total)

- HSCI 7020 - Research Methods
- HSCI 7030 - Statistics

Health Science Research Requirements (6 credits total)

Thesis Track

- HSCI 7000 - Health Science Thesis

Project Track

- HSCI 6090 - Graduate Research Project

  and one graduate level elective

Comprehensive Exam Track

Completion of Comprehensive Exam and two graduate electives

Sports Medicine Core Requirements (9 credits total)

- HSCI 5060 - Advanced Sports Nutrition and Metabolism
- HSCI 6120 - Health Science Leadership
- HSCI 6600 - Health Behavior and Therapeutic Exercise

Strength & Conditioning Track Requirements (16 credits total)

- HSCI 6160 - Dietary Supplements
- HSCI 6240 - Advanced Strength and Conditioning
- HSCI 6250 - Strength and Conditioning Practicum
- HSCI 6700 - Advanced Exercise Science

  and one HSCI/BIOL graduate level elective

Strength & Conditioning Suggested Electives

- BIOL 6360 - Advanced Biomechanics
- HSCI 5050 - Obesity and Weight Management
- HSCI 5350 - Advanced Function Human Anatomy
- HSCI 5490 - Exercise Considerations for Special Populations
- HSCI 5600 - Biomechanics of Musculoskeletal Injury
- HSCI 5820 - Nutrition, Exercise, and Health in Women
- HSCI 6140 - Food, Culture, Community, and Health
- HSCI 6150 - Health Science Internship
- HSCI 6170 - Special Topics in Health Sciences

MSC SPORTS NUTRITION

The Master of Science degree in Sport Nutrition is designed to prepare registered dietitians (RDs or RD eligible) and/or internationally recognized nutritionists to become sport dietitians with an emphasis in sustainability. Non-RD students who have completed a Didactic Program in Dietetic (DPD) exercise physiology and biochemistry course are also eligible to apply to this program. Graduates are prepared to take leadership roles in providing nutrition services to high school, collegiate, recreational, elite, and professional athletes and active individual of all sports and genders. This degree prepares students for the Board Certified Specialist in Sports Dietetics (CSSD) Examination offered to RDs through the Commission for Dietetic Registration (CDR) of the American Dietetic Association (ADA). This program also aims to provide international experiences and collaborations through a newly created network of Professionals in Nutrition for Exercise and Sport (PINES). The degree offers students three capstone options: thesis, project, and comprehensive exam.

Health Science Requirements (6 credits total)

- HSCI 7020 - Research Methods
- HSCI 7030 - Statistics

Health Science Research Requirements (6 credits total)

Thesis Track
- HSCI 7000 - Health Science Thesis

Project Track
- HSCI 6090 - Graduate Research Project

  and three graduate electives

Comprehensive Exam Track
Completion of Comprehensive Examination and 6 credits of graduate electives.

Sports Nutrition Requirements (17 credits total)
- BIOL 5790 - Laboratory Methods in Human Physiology
- HSCI 5060 - Advanced Sports Nutrition and Metabolism
- HSCI 6040 - Theories in Health Behavior I
- HSCI 6100 - Clinical Sport Nutrition and Research
- HSCI 6140 - Food, Culture, Community, and Health

Sports Nutrition Electives (6 credits total)
- HSCI 5050 - Obesity and Weight Management
- HSCI 5350 - Advanced Function Human Anatomy
- BIOL 5550 - Biomechanics/Kinesiology
- HSCI 5030 - Sports Specific Training Principles and Techniques
- HSCI 6150 - Health Science Internship
- HSCI 6160 - Dietary Supplements
- HSCI 6170 - Special Topics in Health Sciences
- HSCI 6180 - Program Planning and Implementation in Health Promotion
- HSCI 6650 - Health Coaching
- HSCI 6740 - Aging, Physical Activity and Health

Total Credits: 35

GRADUATE CERTIFICATE IN DISASTER PUBLIC HEALTH

This graduate gainful employment certificate series is an academic collaboration between the Center for Human Security and Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences. The courses have been developed to provide learners the instruction to proficiently perform in the event of a disaster public health emergency. Topics include roles and responsibilities in prevention, preparedness, response, and recovery.

Required Courses: 12 Credit Hours
- HSCI 6200 - General Principles of Disaster Public Health
- HSCI 6210 - Principles of Disaster Preparedness and Emergency Response
- HSCI 6230 - Special Topics in Disaster Public Health
- HSCI 6420 - Medical Preparedness and Response

MEDICAL LABORATORY SCIENCE CERTIFICATE

The UCCS Medical Laboratory Science (MLS) Program is offered through the University of Nebraska Medical Center CLS Program. UNMC supplies the academic curriculum and is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Local hospitals provide the laboratory internships. The MLS/CLS year generates 43 credit hours and is divided into three parts:

1. Student lab -13 weeks on site at UNMC in Kearney, Nebraska beginning in May of each year.
2. First clinical rotation -13 weeks - Colorado Springs
3. Second clinical rotation - 25 weeks - Colorado Springs

During clinical rotations 1 and 2 the student will receive academic material online via Blackboard educational platform coincident with performance of clinical laboratory work under the supervision of a hospital laboratory technologist. Upon completion of this year's work the student will qualify for a post baccalaureate (4+1), a gainful employment certificate of an MLS/CLS program with qualifications to sit for the national ASCP certification.

NURSING

NURSING, BSN

The graduate is prepared to practice professional nursing while providing care for individuals, families, groups and communities. Students who are not Registered Nurses (RNs) will choose the traditional curriculum plan. RNs can seek advanced standing through the RN-to-BSN plan. An accelerated program exists for students who have already completed a Bachelor's degree.

BSN PROGRAM REQUIREMENTS

Nursing students are to keep a personal file of the following information. It will be reviewed by clinical faculty prior to any clinical courses.

- Nursing License (for RN-to-BSN students only) unless dual enrolled
- CPR card with visible expiration date
- Date and result of PPD test or Tuberculosis screening form
- Evidence of 2MMR immunizations if born after 1957 or titers to all three diseases (measles, mumps, and rubella).
- Dates of Hepatitis B series or titer showing immunity
- Dates of Varicella or titer showing immunity
- Verification of health care insurance
- Date of TD within last ten years, Tdap recommended for students
- Criminal Background Check
- Drug testing documentation

State Board Exam

BSN graduates are eligible to apply to the Colorado State Board of Nursing to take the NCLEX-RN licensure examination.

BSN Accelerated Program

This 16 month nursing program is designed for individuals who hold a Bachelor's Degree in another field and wish to earn a Bachelor of Science Degree in Nursing (BSN). All required general education, pre-requisite courses, and degrees *must be completed* by the end of the Fall semester of the application year. Refer to the Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences web page www.uccs.edu/~bethel for application eligibility requirements and information specific to the Accelerated Option.

BSN Curriculum Plan for Traditional Baccalaureate Nursing Students

First Year

- ANTH 1040 - Introduction to Cultural Anthropology
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- CHEM 1201 - Introduction to Chemistry
- CHEM 1211 - Introduction to Organic and Biochemistry
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- PSY 1000 - General Psychology

General Education Elective recommended.
Note: All first year courses must be completed prior to progressing to second year clinical courses.

Second Year

- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- HSCI 2070 - Nutrition for Health Professionals
- NURS 1010 - Pharmacological Math
- NURS 2050 - Pharmacology
- NURS 3010 - Pathophysiology
- NURS 1230 - Foundations of Nursing Practice
- NURS 2080 - Health Promotion
- NURS 2100 - Basic Health Assessment
- NURS 2200 - Fundamentals of Nursing Practice
- PSY 3620 - Developmental Psychology
- SOC 1110 - Introduction to Sociology

Note: All second year courses must be completed prior to progressing to third year clinical courses.

Total Hours: 33-34 credit hours

Third Year

- Nursing/Health Science Elective
- Humanities Elective (3 credits)
- HSCI 2060 - Health Science Statistics
- NURS 3100 - Mental Health Nursing
- NURS 3200 - Nursing Care of Adults I
- NURS 3210 - Nursing Care of Adults II
- NURS 4010 - Nursing Research

- NURS 4300 - Leadership and Management

Humanities and general education elective recommended.
Note: All third year courses must be completed prior to progressing to fourth year clinical courses.

Total: 31 credit hours

Fourth Year

- General Education Elective (3 credits)
- Humanities Elective (3 credits)
- NURS 4100 - Nursing Care of Children
- NURS 4200 - Nursing Care of the Childbearing Family
- NURS 4290 - Medical/Surgical Nursing Capstone
- NURS 4400 - Community Health Nursing

Humanities elective and general education elective recommended.

Total: 30 credit hours

Total Program Credit Hours: 127

Continuing Students

Once BSN students have accepted an invitation for a clinical spot, their status will be changed from Nursing Prep to Nursing. The nursing curriculum is a very structured program and must be adhered to in order. Second year courses must be successfully completed prior to progression into third year courses. Third year courses must be successfully completed prior to progression into fourth year courses. If an interruption in the sequencing of courses is necessary, students accept their Leave of Absence knowing that a possible delay in program completion may occur. Non-matriculating students only return on a space available basis. Returning students must make an appointment with the Academic Advisor or the Option Coordinator prior to registration.

Leave of Absence

Leave of Absence requests must be made in writing to the Option Coordinator. Refer to the Beth-El Student Handbook for an explanation of the policy.

RN TO BSN AND DUAL ENROLLMENT OPTION

Applicants **with an RN license** may apply to the RN to BSN option with:

- Clinical practice experiences of at least 1,000 hours within the past three years or successful completion of an RN re-entry course approved by the Colorado State Board of Nursing.
- RN's within 3 years of graduation may apply for entry to the program without clinical practice experience.
- Students must have an active, unrestricted RN license in Colorado and have graduated from an accredited program.
- Check website for current authorized states.

Dual Enrollment is for students who are currently enrolled in an associate degree nursing program. After completing first semester courses, the individual may apply to start coursework towards a bachelor's degree in nursing

while completing their associate degree in nursing. Dual Enrollment requires a cumulative 2.5 GPA. Check website for current authorized states.

Curriculum Plan for RN to BSN

General Education

- Humanities Elective (6 credits)
- General Education Elective (7-9 credits)
- Global Social Elective (6 credits)
- BIOL 2010 - Human Anatomy and Physiology I
- BIOL 2020 - Human Anatomy and Physiology II
- BIOL 2030 - Microbiology
- BIOL 2130 - Microbiology Laboratory
- HSCI 2070 - Nutrition for Health Professionals
- ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing
- ENGL 1410 - Rhetoric and Writing II: Argument and Research
- NURS 2060 - Statistics for Nurses
- PSY 1000 - General Psychology
- PSY 3620 - Developmental Psychology
- SOC 1110 - Introduction to Sociology

Total Credits: 55 Credits

Nursing/Health Sciences Required Courses

- Nursing/Health Sciences Electives (6 credits)
- NURS 3010 - Pathophysiology Community College BIO 216 will substitute
- NURS 3040 - Patterns of Knowing (RN)
- NURS 3050 - Health Assessment (RN)
- NURS 4015 - Nursing Research: RN-BSN and Dual Enrollment
- NURS 4250 - Professional Nursing Practice (RN)
- NURS 4350 - Nursing Management
- NURS 4450 - Community Health Nursing
- NURS 4480 - Capstone Project - RN

Total Credits: 33 Credits

Online Courses

All RN to BSN and Dual Enrollment Nursing/Health Sciences courses, with the exception of Nursing/Health Sciences Electives and Community Health Clinical are offered in an on-line format. Refer to the Beth-El website for information regarding technological requirements for completing on-line courses.

Colorado Articulation:

Credits granted through articulation for RNs (38 credits)

Total Program Credits: 126 Credits

NURSING, MSN

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences offers a program of advanced study leading to a Master of Science in Nursing degree, building upon and expanding the knowledge, values and skills

of the baccalaureate-prepared nurse. In addition to taking courses which prepare for expanded clinical roles, the student gains experience with research, health care policy, nursing theory, clinical problem solving/critical thinking, and creativity. Students choose an NP in adult/gero or family. The MSN has three distinct bodies of knowledge: graduate core, advanced practice core, and specialty courses related to the selected clinical specialty. All graduate courses are offered online. A post-masters certificate option is available upon approval.

MSN APPLICATION AND ADMISSION

MSN Admission Criteria

- GPA of 2.75 or better in all previous coursework and GPA of 3.3 or better for the BSN Degree
- Completion of a baccalaureate degree in nursing from an institution with program accreditation (ACEN or CCNE)
- Prerequisite undergraduate courses include: Statistics, Nursing Research & Health Assessment
- Current resume or vita
- Current unrestricted Registered Nurse license in the state where clinical practice will take place
- Passing score on the Test of English as a Foreign Language (TOEFL) if native language is not English
- Computer technology skills
- Completion of all required application materials by posted deadlines

State Authorization
Notice to Admitted Students: Students are admitted to our program as a resident of the particular state in which they resided at the time of application. If the student plans to move to a different state while in our program or do any practicum hours in a different state, it is their responsibility to check our List of Approved States to make sure that they may continue in our program after moving to that state.

For more information see http://www.cu.edu/state-authorization/professional-licensure.

Disclosure: Professional licensure requirements vary by profession and by state. The University of Colorado has **not** determined whether a course, program, certificate, or degree meets requirements for professional licensure outside of Colorado. Prior to enrolling, online and distance students are strongly advised to check with the appropriate licensing board in their current or intended state of residence to ensure the online course, program, certificate, or degree will meet that state's requirements. Contact information for your state's Board of Nursing is available at: https://ncsbn.org/contact-bon.htm.

GRADUATE ACADEMIC POLICIES

Advising

All admitted students are provided a standardized degree plan of study. Students are assigned an advisor to assist in any academic issues. All changes to academic degree plan of study must be approved by the academic advisor.

MSN Degree Requirements

- 46-47 graduate level credits
- 3.0 or better GPA must be maintained
- Completion of degree requirements within six years

Online Options

All courses in the graduate program are offered online. For further information contact the Department at (719) 255-4424.

MSN DEGREE CURRICULUM

Core Course Requirements (Required of all MSN Students)

- NURS 6100 - Philosophical Foundations of Advanced Nursing Practice
- NURS 6110 - Advanced Nursing Practice in Healthcare
- NURS 6120 - Research and Knowledge Translation in Nursing
- NURS 7000 - Research Thesis
- NURS 7024 - Research Analysis and Application

Credits: 13-14

Advanced Practice Nursing Core

- NURS 6280 - Clinical Pharmacotherapeutics
- NURS 6730 - Advanced Health Assessment
- NURS 6740 - Advanced Pathophysiology

Credits: 9

MSN—Nurse Practitioner Option Specialty Courses

Nurse Practitioner Students select from the following options:

Adult/Gero Nurse Practitioner

- NURS 6910 - Primary Care of Adults and Families with Acute Health Conditions
- NURS 6920 - Primary Care of Adults and Families with Chronic Health Conditions
- NURS 6930 - Foundational Principles for Care of Older Adults
- NURS 6940 - Geriatric Clinical Syndromes
- NURS 6980 - Synthesis Practicum

Total Credits: 47

Family Nurse Practitioner

- NURS 6900 - Primary Care of Pediatric Patients and Families
- NURS 6910 - Primary Care of Adults and Families with Acute Health Conditions
- NURS 6920 - Primary Care of Adults and Families with Chronic Health Conditions
- NURS 6980 - Synthesis Practicum

Total Credits: 46

Course Requirements for Prescriptive Authority

Specific courses may differ for the selected specialty but must include Advanced Pathophysiology, Advanced Assessment, and Clinical Pharmacotherapeutics. State requirements differ in various state jurisdictions; currency of coursework and practice hours as an APN may be required.

Note: Courses related to the selected clinical specialty provide the student an opportunity to use empirical, ethical, esthetic, personal, and socio-political knowledge in the clinical setting specific to the student's chosen advanced practice role.

POST MASTER'S DEGREE CERTIFICATES IN NURSING

Students with master's degrees in nursing may apply for these certificate programs: adult/geri, family, or education. Please request information from the College.

GRADUATE CERTIFICATE IN FORENSIC NURSING

At any point where the delivery of patient care and the medico-legal system intersect, forensic nurses have an integral area of practice. Historically, a gap has existed between the office of the medical examiner, the police department, and the hospital emergency room or hospitalized patient. Forensic nursing can bridge that gap. Forensic professionals help avoid the mishandling or omission of forensic evidence and perform critical functions in the recognition and correct collection of forensic evidence in all cases of violence, especially complex criminal cases.

According to the World Health Organization, each year nearly 2 million lives are lost around the world because of violence. Often, healthcare providers are the first to come into contact with a person who is a victim of violence, trauma, or injury.

Comprehensive forensic healthcare education offers professionals the tools and knowledge to make a difference in their practice, promote collaborative community responses to violence, and design strategies for violence prevention.

The graduate gainful employment Forensic Nursing Certificate is awarded upon completion of 12 credit hours.

Required Courses: 12 Credit Hours

- NURS 6020 - Practice Paradigms in Forensic Nursing

  And three courses from the following:

- NURS 6030 - Healthcare Policy, Ethics, and Legal Aspects of Forensic Nursing Practice
- NURS 6040 - Substance Abuse: Implications for the Forensic Nurse
- NURS 6060 - Multi-Facets of Child Maltreatment
- NURS 6070 - The Epidemic of Sexual Assault, Abuse, and Exploitation

NURSING EDUCATION CERTIFICATE

The Nursing Education Certificate provides foundational knowledge for the student to pursue career opportunities as a nurse educator and to teach in Baccalaureate and Associate Degree nursing programs as well as in various clinical settings. Students will learn about curricular development, program planning and evaluation, learning strategies, and develop skills in different teaching methodologies.

The Nursing Education certificate is a 12-credit online graduate or post-masters gainful employment certificate that may be completed in as little as two semesters. The graduate version is also available as a course of study certificate.

DOCTORATE OF NURSING PRACTICE, DNP (POST BSN)

The Doctorate of Nursing Practice (DNP) is the terminal degree in advanced nursing practice. The Bachelor of Science in Nursing (BSN) to DNP offers the BSN graduate a path to a clinical terminal degree in nursing. Along the

way the student will take the usual core MSN courses, Primary Care NP specialty courses, and the DNP core. The student will be eligible to sit for a national nurse practitioner certification exam upon completion of the program.

ADMISSION REQUIREMENTS

- Active RN license in state of practice
- Bachelor of Science degree in Nursing from an accredited (CCNE/ACEN) program including prerequisite undergraduate courses in Statistics, Health Assessment, and Nursing Research
- Minimum cumulative GPA of 2.75 or higher for all undergraduate coursework and BSN GPA of 3.3 or higher
- Curriculum vitae or resume
- Submission of all required application materials by posted deadlines

STATE AUTHORIZATION

Notice to admitted students: Students are admitted to our program as a resident of the particular state in which they resided at the time of application. If the student plans to move to a different state while in our program, or do any practicum hours in a different state, it is their responsibility to check our List of Approved States to make sure that they may continue in our program after moving to that state.

For more information, see http://www.cu.edu/state-authorization/professional-licensure.

Disclosure: Professional licensure requirements vary by profession and by state. The University of Colorado has **not** determined whether a course, program, certificate, or degree meets requirements for professional licensure outside of Colorado. Prior to enrolling, online distance students are strongly advised to check with the appropriate licensing board in their current or intended state of residence to ensure the online course, program, certificate, or degree will meet that state's requirements. Contact information for your state's Board of Nursing is available at: https://ncsbn.org/contact-bon.htm.

DNP ADVANCED LEVEL COURSE CURRICULUM: BSN-DNP

Required Courses - DNP

- NURS 6120 - Research and Knowledge Translation in Nursing
- NURS 7010 - Theoretical Foundations of Reflective Practice
- NURS 7030 - Advanced Healthcare Policy, Ethics, and Law
- NURS 7070 - Population-based Health Care for Improving the Nation's Health
- NURS 7080 - Clinical Nursing Scholarship for Evidence-based Practice
- NURS 7090 - Business, Finance, and Entrepreneurship
- NURS 7100 - Organizational System Leadership and Quality Improvement
- NURS 7110 - Inferential Statistics
- NURS 8030 - DNP Capstone

Required Courses - Primary Care NP Specialty Focus: Adult/Gero

- NURS 6910 - Primary Care of Adults and Families with Acute Health Conditions
- NURS 6920 - Primary Care of Adults and Families with Chronic Health Conditions
- NURS 6930 - Foundational Principles for Care of Older Adults
- NURS 6940 - Geriatric Clinical Syndromes
- NURS 6980 - Synthesis Practicum

Required Courses - Primary Care NP Specialty Focus: Family

- NURS 6900 - Primary Care of Pediatric Patients and Families
- NURS 6910 - Primary Care of Adults and Families with Acute Health Conditions
- NURS 6920 - Primary Care of Adults and Families with Chronic Health Conditions
- NURS 6980 - Synthesis Practicum

Total Credit Hours: 72-73

DOCTORATE OF NURSING PRACTICE, DNP (POST MASTERS)

The Doctorate of Nursing Practice (DNP) is the terminal degree in advanced nursing practice. The post-master's DNP program at Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences enrolls master's prepared Nurse Practitioners (NP) and Clinical Nurse Specialists (CNS) who have obtained national certification. The degree prepares advanced practice nurses for the highest level of nursing practice and leadership in a variety of health care settings.

ADMISSION REQUIREMENTS

- Active RN license in State of Practice
- Master of Science Degree in Nursing from an accredited (CCNE/ACEN) program
- Undergraduate GPA of 3.0, and Graduate GPA of 3.3
- National Certification as NP or CNS, or CNS portfolio reflecting expertise if no national exam is available
- Submission of all required application materials by posted deadlines

STATE AUTHORIZATION

Notice to admitted students: Students are admitted to our program as a resident of the particular state in which they resided at the time of application. If the student plans to move to a different state while in our program, or do any practicum hours in a different state, it is their responsibility to check our List of Approved States to make sure that they may continue in our program after moving to that state.

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PREREQUISITE COURSES

In addition to a MSN degree and National Certification as APN, applicants must have the following courses or equivalents for admission. Prerequisite graduate courses in nursing theory, research and policy are indicated only if MSN programs were in deficit of this core course.

DOCTOR OF NURSING PRACTICE ADVANCED LEVEL COURSE CURRICULUM: POST-MASTER'S

Required Courses

- NURS 7010 - Theoretical Foundations of Reflective Practice
- NURS 7030 - Advanced Healthcare Policy, Ethics, and Law
- NURS 7070 - Population-based Health Care for Improving the Nation's Health
- NURS 7080 - Clinical Nursing Scholarship for Evidence-based Practice
- NURS 7090 - Business, Finance, and Entrepreneurship
- NURS 7100 - Organizational System Leadership and Quality Improvement
- NURS 7110 - Inferential Statistics - if needed
- NURS 8030 - DNP Capstone

Total Credits (35 credits)

PRIMARY CARE NURSE PRACTITIONER CERTIFICATE (ADULT/GERONTOLOGY AND FAMILY)

The post-graduate certificate program builds upon and expands the knowledge, values, and skills of the Master's prepared nurse. The College offers the option of advanced study for Primary Care Nurse Practitioner leading to a Post Masters Certificate. In addition to specialty courses which prepare for expanded primary care clinical roles in adult/gero or family, the student is prepared for prescriptive authority in advanced pathophysiology, assessment, and pharmacology.

NURSING AND HEALTH SCIENCES PROGRAMS OF STUDY

Discipline	Minor	Bachelor of Science	Bachelor of Science in Nursing	Master of Science	Master of Science in Nursing	Doctor of Nursing Practice *
Health Sciences						
Bachelor of Science in Health Care Science - Allied Health Completion Option		BS				
Bachelor of Science in Health Care Science - Health & Wellness Promotion Option		BS				
Bachelor of Science in Health Care Science - Medical Laboratory Science Option		BS				
Bachelor of Science in Health Care Science - Nutrition Option		BS				
Bachelor of Science in Health Care Science - Senior Fitness Option		BS				

Bachelor of Science in Exercise Science		BS				
Bachelor of Science in Exercise Science - Strength & Conditioning Option		BS				
Bachelor of Science in Exercise Science - Strength & Conditioning Option, Athletic Training Prep		BS				
Health & Wellness Promotion Minor	Minor					
Nutrition Minor	Minor					
Master of Science in Health Promotion				MSc		
Master of Science in Sports Medicine - Athletic Training Track				MSc		
Master of Science in Sports Medicine - Strength & Conditioning Track				MSc		
Master of Science in Sport Nutrition				MSc		
Nursing						
Bachelor of Science in Nursing - Traditional Option			BSN			
Bachelor of Science in Nursing - Accelerated Option			BSN			
Bachelor of Science in Nursing - RN-to-BSN or Dual Enrollment			BSN			
Master of Science in Nursing - Nurse Practitioner Option					MSN	
Master of Science in Nursing - Nursing Education Option					MSN	
Doctorate of Nursing (DNP)						DNP

School of Public Affairs

GENERAL INFORMATION

Academic Office Building (ACAD), Third Floor
Telephone: (719) 255-4993
Fax: (719) 255-4183
www.uccs.edu/~spa/

Established in 1972, the School of Public Affairs (SPA) provides undergraduate criminal justice and graduate level, professional education and training for managers and policy-makers in public, nonprofit, and criminal justice organizations. The School offers the Bachelor of Arts (BA) in Criminal Justice, the accelerated Bachelor of Arts/Master of Criminal Justice (BA/MCJ), the Master of Public Administration (MPA), the Master of Criminal Justice (MCJ), and the Master of Public Administration/Master of Criminal Justice (MPA/MCJ) dual degree. SPA students can also pursue a more limited course of study, earning an undergraduate certificate in Homeland Security or graduate certificates in Criminal Justice; Grant Writing, Management, and Program Evaluation; Homeland Security and Emergency Management Leadership; Local Government Management; National Security Intelligence; Nonprofit Fund Development; Nonprofit Management; and Public Management.

SPA's undergraduate degree, the Bachelor of Arts in Criminal Justice (BACJ), utilizes an interdisciplinary approach to capture both the academic liberal arts emphasis and the professional and policy knowledge required to educate criminal justice professionals. Students who complete this degree may seek employment in law enforcement, corrections, courts, and related areas. This employment can be within the public, nonprofit, or for-profit sectors, providing multiple options for criminal justice graduates.

SPA's graduate programs offer a select group of students the opportunity to enhance their potential for executive leadership and success in public service careers. The curriculum reflects the philosophy that management in public and nonprofit organizations presents unique challenges and opportunities because of our obligation to serve the public interest. All graduate degrees have a common core of courses augmented with electives focusing on public, nonprofit, or criminal justice management and policy.

During their course of study, students learn to perform research, utilize new technological resources, manage organizational finances, and fully utilize and manage human resources. Emphasis is placed on the theoretical foundations of public service and the special ethical considerations of work in the public and nonprofit sectors. Elective courses address specific student interests.

Students graduate with a sophisticated understanding of the public and nonprofit sectors and their interdependence, and of contemporary principles of organizational development and management. Many resident SPA faculty have earned doctorates in their fields of specialization and are nationally recognized scholars. They conduct research of interest to scholars and practitioners in the field, as well as research on issues of concern in Southern Colorado. Instructors bring substantial content expertise to their teaching specialties. SPA also invites practitioners who are recognized leaders in their areas of expertise to teach selected courses in SPA's degree programs.

The School of Public Affairs is a place where the University meets and exchanges ideas and information with local, state, and national communities. SPA also sponsors conferences, training programs, and other opportunities for lifelong learning. These activities help to create a community of public service professionals, and they ensure that the University and the community share their rich resources.

MISSION

The mission of the UCCS School of Public Affairs is to improve the quality of life for people and their communities, here and abroad, through collaborative governance, public service innovation, community engagement, and research. To accomplish this mission, we strive to

- Improve the quality of public, nonprofit, criminal justice, and national security systems.
- Educate leaders to meet societal challenges with compassion, vision, analytic rigor, and practicality.
- Foster critical thinking and decision-making, effective and confident communication, creative problem-solving, knowledge management, and global citizenship.
- Create, build, and maintain connections with current, past and future students and all the communities we serve.
- Ground our decisions and actions in integrity, diversity, collaboration, and excellence.
- Support and model civil public discourse, citizenship, responsibility, and respect.

ACCREDITATION

The Master of Public Administration (MPA) degree is accredited by the Network of Schools of Public Policy, Affairs, and Administration's (NASPAA) Commission on Peer Review and Accreditation.

FACULTY

Dean: George Reed; *Distinguished Professor:* Donald Klingner; *Professor:* Mark McConkie; *Associate Professor:* Terry Schwartz; *Assistant Professors:* Anna Kosloski, Michael Landon-Murray, Edin Mujkic, Stephanie Ryon, Henriikka Weir; *Scholar in Residence:* Robert Wonnett; *Senior Instructors:* Mike Martinez, Regina Winters; *Instructors:* Katy Cathcart, Rich Radabaugh, Rod Walker.

PROGRAMS OF STUDY

The programs of study that are available for completion through the University of Colorado Colorado Springs are listed on the Public Affairs Programs of Study table.

SPA GENERAL ACADEMIC POLICIES

UNDERGRADUATE ACADEMIC POLICIES

ACADEMIC ADVISING

Students are expected to assume responsibility for planning their academic programs in accordance with School rules, policies and major requirements. Academic Advising can answer questions about School policies and graduation requirements and will assist students in course selection and degree planning. All Criminal Justice majors

should plan to meet with an academic advisor at least once a year. Students expecting to graduate within one or two semesters should schedule a senior audit appointment by calling (719) 255-3260 or by visiting Academic Advising, second floor of Main Hall.

Although each student is assigned to a specific academic advisor, students should also work with faculty for questions involving major requirements, and career or graduate school questions. It is the student's responsibility to arrange academic advising meetings and faculty consultation. Students should schedule appointments to discuss their questions well in advance of registration.

COURSE LOAD

For traditional semesters (fall and spring), the minimum full-time course load is 12 credit hours. For fall and spring semesters, the maximum is 18 credit hours. If a student wishes to take more than 18 hours per semester, special permission must be obtained from the BACJ Director in the Academic Office Building. These totals include all courses taken for credit at any of the university's three campuses but do not include correspondence courses, noncredit courses, or courses taken at other institutions.

To receive credit, students must be officially registered for each course.

Students who hold or expect to hold full- or part-time employment while enrolled in the School must register for course loads they can expect to successfully complete. Recommended course loads are given below, but students must weigh their own abilities and assess the demands of each course in determining an appropriate schedule.

Employed	Enrolled Credit Hours
40 hours per week	6-9
30 hours per week	8-11
20 hours per week	10-13

GRADING POLICIES

Students should familiarize themselves with the Academic Policies, Registration, and Records section of this Catalog, as well as with the introductory pages of each semester's official Registration Handbook, for information about the university grading system and the current procedures for registering on a pass/fail basis, for dropping and adding classes, and for withdrawing from the university.

Pass/Fail Option

Students in the School of Public Affairs may not use the pass/fail option for courses taken to fulfill the area requirements, the composition requirement, the quantitative and qualitative reasoning skills requirement, or the major requirements.

Students may take up to 15 hours of elective credit on a pass/fail basis. Transfer students may take one hour of pass/fail credit for every 8 hours of credit attempted at the University of Colorado.

For full-time students, maximum pass/fail hours per semester are as follows:

- Fall and Spring - 6 credit hours
- Summer - 3 credit hours

For part-time students, no more than 50 percent of total credit hours may be taken pass/fail in a given semester. If only one course is taken in a semester, it may be taken pass/fail. The P grade is not included in the student's grade point average; the F grade is included. A pass/fail designation may not be reversed. For further information concerning the pass/fail option, see the Academic Policies, Registration, and Records section of this Catalog.

Repetition of Course
When a student takes a credit course more than once, all grades are used in determining the grade point average. However, if a student has passed the same course more than one time, the School of Public Affairs will count that course only once when calculating the student's credit hours earned toward graduation. The only exception to this rule will be in cases where a course is designated in this Catalog as "may be repeated for credit."

Latin Honors
In order to graduate with Latin honors, a student must complete a minimum of 45 credit hours on the UCCS campus and achieve a cumulative grade point average of 3.5 for cum laude, 3.7 for magna cum laude, and 3.9 for summa cum laude. ALL post-secondary work (including transfer work) is included in this cumulative grade point average.

President's and Dean's List Criteria
The criteria for the president's and dean's lists are as follows:

- President's list: 4.0 grade point average.
- Dean's list: 3.75 - 3.99 grade point average.
- Students must be enrolled in a minimum of 12 graded hours during a regular semester (fall or spring).

The dean notifies awarded students by letter.

INDEPENDENT STUDY

Students who have completed a considerable portion of their undergraduate studies with distinction may submit a Petition for Independent Study and register for independent study with the approval of the assigned BACJ faculty member and the BACJ Director. The amount of credit to be given for an independent study project shall be arranged with the instructor.

No more than eight hours of independent study may be credited toward the major, and no more than 16 hours toward the bachelor's degree. No student may register for more than eight hours of independent study in any one term (summer, fall, or spring).

ACADEMIC PROBATION

Students who have attempted at least 12 hours at the University of Colorado with a cumulative grade point average below 2.0 will be placed on academic probation. While on probation, students will be required to achieve a minimum acceptable grade point average of 2.25 each term or be subject to academic suspension. Students placed on probation will be informed in writing concerning their academic status and the conditions of continued attendance. Students who are in doubt about their standing with regard to scholastic deficiency and the process for academic probation are strongly urged to consult with their academic advisor.

ACADEMIC SUSPENSION

Students who fail to meet standards of academic probation will be suspended from the School of Public Affairs (SPA). The suspension period for SPA students is one academic year, excluding the summer semester. Suspended students will be reinstated after the normal suspension period at the discretion of the SPA Dean, upon reapplying for admission to the university.

Students suspended for the first time may be reinstated before the end of the normal suspension period by the following measures:

- Achieving a 2.5 grade point average on all summer coursework attempted at the University of Colorado since suspension. Six hours minimum must be completed.
- Raising the cumulative University of Colorado grade point average to at least 2.0 by completing summer coursework at the University of Colorado.
- Achieving a cumulative grade point average of at least 2.0 by attending another institution. The cumulative grade point average in this instance is the grade point average at the University of Colorado combined with coursework taken at all other institutions.
- Successfully appealing the suspension in writing to the dean. An abeyance may only be granted under extenuating circumstances. For more information, contact a Criminal Justice advisor in the Academic Advising Office.
- Being recommended for reinstatement by the coordinator of academic probation and suspension for the School of Public Affairs in the Academic Advising Office.
- Students eligible for reinstatement before serving the normal suspension period must notify the Academic Advising Office. Reinstated students absent for either fall or spring semesters or who complete 12 or more hours at another institution must reapply for admission to the university.
- Students suspended for the first time will be reinstated on probation and will be informed in writing of their academic status and the conditions of continued attendance. Students not meeting conditions of continued attendance will again be subject to academic suspension. Reinstatement after a second suspension requires approval of the dean of the School of Public Affairs.

Requests for reinstatement must be made in writing. Students who are in doubt about their standing with regard to scholastic deficiency and the process for reinstatement are strongly urged to consult with their academic advisor.

GRADUATION REQUIREMENT

Senior Audit

Prior to their last semester, seniors are required to schedule a senior audit appointment and apply for graduation with their academic advisors in the Academic Advising Office. This gives notice of intention to complete graduation requirements. The online application and all required paperwork are completed during the senior audit appointment. Failure to apply for graduation in time may delay a student's graduation. To make an appointment, call (719) 255-3260. Student appointments should be scheduled one week in advance.

Residence Requirements

A candidate for a degree from the School of Public Affairs must earn the last 30 hours in residence in the School. During these 30 hours, the student must be registered in the School of Public Affairs. All 30 hours must be taken at UCCS. Students wishing to attend another university or college simultaneously with UCCS during the last 30 hours must have prior approval of the dean of the School of Public Affairs in order to count these transfer hours as part of the last 30 hours.

GRADUATE ACADEMIC POLICIES

STANDARDS OF PERFORMANCE

In order to be in good standing, students must have an overall GPA of 3.0 or better in all coursework. A grade of B- or better is required in all classes counted towards the MPA, MCJ, Dual MPA/MCJ, and graduate certificates. The academic performance of each student will be reviewed at the end of each semester. A student who has a

GPA of less than 3.0 will be placed on probation for a period of one year; additionally, any student receiving a grade of F in any course is automatically placed on probation. Any student on probation must meet with the program director prior to registration.

Students on probation are allowed a maximum of two semesters from the time they are placed on suspension, or one calendar year, to raise their GPA to 3.0. Failure to raise the cumulative GPA to 3.0 in the time period outlined will result in suspension from the program. A suspended student is eligible to apply for readmission after one year. Approval or rejection of this application rests with the program director.

TIME LIMIT

Master's degree students must complete their degree no later than six years after the starting date of their first course, even when that course is taken as an unclassified student. Exceptions must be approved in writing by the dean of the School of Public Affairs and the dean of the Graduate School.

GRADUATE CREDIT EARNED PRIOR TO ADMISSION TO THE SCHOOL OF PUBLIC AFFAIRS

Up to nine graduate-level credit hours of relevant coursework completed at another accredited institution or at a UCCS unit other than the School of Public Affairs may be applied toward a SPA graduate degree. To be eligible for transfer, courses must have been taken within five years of the request for transfer credit, have a minimum grade of B or above, and have not been applied toward another degree. Should a transferred course become six or more years old before the student finishes the degree requirements, it will no longer count toward the degree unless re-validation criteria apply. All transfer work must be approved in writing by the program director. Students should request transfer of credits immediately after admission.

A maximum of twelve graduate-level credit hours taken as an unclassified (non-degree) student at the UCCS School of Public Affairs may be applied toward a SPA graduate degree. Courses must have been taken within five years of the request for application of credit. Should a course become six or more years old before the student finishes the degree requirements, it will no longer count toward the degree unless re-validation criteria apply.

SPA UNDERGRADUATE PROGRAMS

UNDERGRADUATE ADMISSION

Candidates for regular admission to the Bachelor of Arts in Criminal Justice program are expected to meet the general requirements for undergraduate admission to the University, as described in the Admissions section. The Catalog that governs a student's graduation requirements is the one in effect at the time of a student's most recent admission into the college of the student's degree program.

UNDERGRADUATE ACADEMIC REQUIREMENTS

General Education Requirements

The School of Public Affairs requires all students to complete an English writing requirement, a reasoning proficiency requirement, area requirements, and cultural diversity, oral communication, and global awareness requirements. Assuming that a student does not test out of the writing and reasoning requirements, the total number of credit hours needed to complete the college general education requirements is 45.

The School of Public Affairs will accept transfer courses from a community college "general education core" and substitute these credits for credits required within the 120 hours needed for the BA degree in whatever manner is most advantageous to the student. The School will also accept non-core academic courses in transfer, i.e., courses that are not considered to be vocational or technical in nature.

NOTE TO ALL STUDENTS: The requirements for **English Composition and Writing Competency, Quantitative and Qualitative Reasoning Proficiency, and the Area Requirements in Humanities, Social Sciences, and Natural Sciences** match those listed on your degree progress report and are based on your catalog year. Please contact an academic advisor in the Academic Advising Office for detailed information on general education requirements.

SPA GRADUATE PROGRAMS

GRADUATE ADMISSION

Prerequisites

- A bachelor's degree from an accredited college or university, with grades sufficiently high to indicate ability to pursue graduate work (typically a grade point average of 3.0 or better). The applicant may have majored in any field for the undergraduate degree.

Application Materials

- Online Graduate School Application.
- $60 non-refundable application fee.
- Official transcripts from all institutions of higher education attended.
- Statement of educational and career goals (one page minimum).
- Current resume.
- Three recommendations by qualified references that establish the applicant's qualifications for graduate work.
- Official test scores from the Graduate Record Examination (GRE) or an equivalent exam, such as the Law School Admissions Test (LSAT) or Graduate Management Admission Test (GMAT), unless applicants meet one or more of the requirements for waiver, as stated below:
    - The student holds a graduate degree from an accredited institution in another field.
    - The student has an undergraduate degree with a GPA of 3.0 or better and five years of professional experience.
    - The student has an undergraduate GPA of 3.5 or better.
    - The student has ten or more years of progressively more responsible professional experience.
    - The student has completed two SPA courses (at least one of which must be taken with a core faculty member) and earned a B or better in each course.
    - The student is an ESL applicant who has an undergraduate degree with a GPA of 3.0 or better and meets UCCS English proficiency standards.
    - The student has completed a SPA graduate certificate with a GPA of 3.5 or better.

Admission Calendar

The application deadline for SPA graduate programs is based on a rolling admissions policy: applications are accepted up to the week prior to the start of each semester. Reviews of applications are also conducted on a continuing basis. Students planning to apply for financial aid should contact the Financial Aid office as soon as possible to determine if earlier deadlines are required.

Students who have missed the deadline for the upcoming semester may register as unclassified students. Up to twelve credit hours of public administration or criminal justice coursework taken as a UCCS unclassified student may be applied to the MPA or MCJ degree program. Unclassified student applications are available on the web.

GRADUATE CERTIFICATE PROGRAMS

Students who wish to sharpen their knowledge and skills without committing to the full MPA, MCJ, or dual degree programs may earn a graduate certificate in one of eight areas by completing four designated courses. Students who complete a certificate and later enter a graduate degree program in SPA may count up to twelve graduate-level credit hours toward the degree if all degree requirements are completed within the six year time limit. Students who have been admitted to a SPA graduate degree program may also earn a certificate by completing the course requirements listed.

GRADUATE CERTIFICATE ELIGIBILITY REQUIREMENTS

Students are not required to apply to a degree program to take courses toward a graduate certificate but must have a bachelor's degree from an accredited university. All students pursuing a certificate must submit a one-page certificate application to the School of Public Affairs. Students not currently admitted to an SPA graduate degree program must submit official transcripts, a Non-Degree Seeking Application, and a $50 processing fee to the UCCS admissions office to be admitted as an unclassified student. Students must earn grades of B- or better in each course counted toward a certificate.

CRIMINAL JUSTICE, BA

The BACJ program utilizes an interdisciplinary approach to capture both the academic liberal arts emphasis and the professional and policy knowledge required to educate criminal justice professionals. Students who complete this degree may seek employment in law enforcement, corrections, courts, and related areas. This employment can be within the public, nonprofit, or private sectors, providing multiple options for Criminal Justice graduates.

LEARNING OUTCOMES

Criminal Justice is a broad and increasingly interdisciplinary field. Students who complete the BACJ will:

- Be able to draw on multiple disciplines and research traditions to identify and understand the social and behavioral contributors to crime and delinquency.
- Have a comprehensive understanding of the institutions in the criminal justice system and how politics and policymaking affect these institutions.
- Have effective critical thinking and oral and written communication skills.
- Have a comprehensive knowledge of the ethical concerns of the criminal justice field.

- Understand how perceptions of the criminal justice system vary cross-culturally, and how such differences influence policy and public perception.

In addition, the BACJ will provide the foundation for students who are interested in pursuing the Master of Criminal Justice degree.

GENERAL REQUIREMENTS FOR THE BACJ DEGREE

Students must complete a minimum of 120 credit hours, including:

- 33 undergraduate required Criminal Justice core credit hours
- 6 elective credit hours in Criminal Justice
- 54 credit hours of general education requirements as outlined in your degree progress report
- 27 other elective credit hours

Students must also meet the following requirements:

- A minimum of 27 credit hours must be upper-division major courses
- A 4-credit-hour internship required for those who do not have experience in the field of Criminal Justice
- A grade of C or better in each undergraduate course applied to satisfy major requirements
- Major requirements may not be taken pass/fail

Upper-Division Requirement
Students must complete at least 45 credit hours of upper-division work (courses numbered 3000 and above) to be eligible for the bachelor's degree. Students may register for upper-division courses if they have met prerequisites or obtained departmental approval. Courses transferred from a junior/community college carry lower-division credit.

REQUIRED COURSEWORK

Core Courses

- CJ 1001 - Introduction to Criminal Justice
- CJ 2041 - Crime Theory and Causes
- CJ 3100 - Criminal Justice Research Methods
- CJ 3150 - Statistics for Criminal Justice
- CJ 3250 - Violence in Society
- CJ 4042 - Corrections
- CJ 4043 - Law Enforcement
- CJ 4044 - Courts and Judicial Process
- CJ 4121 - Ethics in Criminal Justice
- CJ 4960 - Criminal Justice Internship

Electives

- 6 elective credit hours in Criminal Justice

Option Areas
Students may utilize their major elective course options (and in some cases core and/or required courses) to form a concentration or 'option' area in one or more of the following areas: 1) Forensic Studies; 2) Law; and 3) Law Enforcement.

Students must meet with a Criminal Justice advisor in Academic Advising to declare an option area and then follow the requirements on the degree progress report.

The courses listed below are recommended for creating a specific concentration. A minimum of 12 credit hours is required for the option areas. The 12 credit hours may count toward BACJ elective hours, or core hours where applicable, if they are Criminal Justice (CJ) or Public Administration (PAD) courses.

Forensic Studies (15 credit hours)

- CJ 1002 - CSI: Fact or Fantasy?
- CJ 2030 - Introduction to Forensic Studies
- CJ 2032 - Investigation of Injury and Death
- CJ 3050 - Interview and Interrogation Techniques
- CJ 4029 - Legal Aspects of Forensic Studies
- CJ 4033 - Crime Scene and Crime Lab
- CJ 4034 - Criminal Profiling
- CJ 4050 - Advanced Interview and Interrogation Techniques
- CJ 4175 - Homicide Investigation

Law (12 credit hours)

- CJ 3050 - Interview and Interrogation Techniques
- CJ 3160 - White-Collar Crime
- CJ 3420 - Pleas, Trials, and Sentences
- CJ 3520 - Juvenile Justice Administration
- CJ 4029 - Legal Aspects of Forensic Studies
- CJ 4050 - Advanced Interview and Interrogation Techniques
- CJ 4180 - Comparative Study of Criminal Justice Systems
- CJ 4410 - Criminal Law and Constitutional Procedure
- CJ 4430 - Law and Society
- CJ 4440 - Courts and Social Policy
- PSC 4470 - Constitutional Law
- PSC 4480 - Civil Rights and Liberties

Law Enforcement (12 credit hours)

- CJ 3050 - Interview and Interrogation Techniques
- CJ 3310 - Police in Contemporary Society
- CJ 3320 - Police-Community Relations
- CJ 4050 - Advanced Interview and Interrogation Techniques
- CJ 4175 - Homicide Investigation
- CJ 4180 - Comparative Study of Criminal Justice Systems
- CJ 4401 - Introduction to First Responder Organizations
- CJ 4460 - Developing Criminal Justice Leadership

CRIMINAL JUSTICE ACCELERATED BA TO MCJ

The School of Public Affairs offers a unique opportunity for highly qualified undergraduate students in criminal justice. The accelerated Bachelor of Arts/Master of Criminal Justice (BA/MCJ) program is designed to allow

students to work concurrently toward the BA in Criminal Justice (BACJ) and the Master of Criminal Justice (MCJ). The program allows qualified undergraduate students to start on their Master of Criminal Justice (MCJ) degree while simultaneously completing their bachelor's degree. 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 degrees.

Qualified students can complete up to nine credit hours of graduate-level criminal justice courses that are eligible to double count toward both their BA and MCJ degrees. This will allow students to complete the MCJ degree in an accelerated timeframe.

The BACJ program requires a total of 120 credit hours including the UCCS BACJ adaptation of the UCCS general education, the School of Public Affairs criminal justice major requirements (39 credit hours), and a minimum of 45 credit hours of upper-division coursework (3000 and above).

GENERAL REQUIREMENTS

The BA/MCJ program will allow students to count nine credit hours toward both the Bachelor of Arts in Criminal Justice (BACJ) and Master of Criminal Justice (MCJ) programs. In order for credit to be double-counted, the following conditions must be met:

- Dual credit courses must be approved by the MCJ Director as meeting requirements in both programs.
- Dual credit courses must be completed with a grade of B or better.
- Dual credit courses must be taken at the graduate level (for graduate credit).

COURSE REQUIREMENTS

BA/MCJ students will complete the following courses for dual credit:

- Two of the following required core MCJ courses (6 credits):
    - CJ 5001 - Criminal Justice Systems, Policy and Practice
    - CJ 5002 - Criminological Theory
    - CJ 5007 - Violence
    - CJ 5008 - Gender, Race, Ethnicity, and Social Class: Implications for Criminology, CJ, & Public Service
- One MCJ Elective (3 credits)

Once concurrent students have successfully completed the three graduate-level courses (9 credit hours) and the 111 BACJ credit hours have been reviewed and approved by the MCJ Director, the student will be admitted into the MCJ program.

ELIGIBILITY REQUIREMENTS

Both current UCCS and new transfer students are eligible to apply after meeting the following criteria:

- Currently enrolled in the School of Public Affairs as a Criminal Justice major
- Junior year students (making the application for their senior year)
- Completed the following 14 credit hours in Criminal Justice:
    - CJ 1001 - Introduction to Criminal Justice
    - CJ 2041 - Crime Theory and Causes
    - CJ 3100 - Criminal Justice Research Methods
    - CJ 3150 - Statistics for Criminal Justice

Grades of B or better in all of these courses are required. (Transfer criminal justice courses must be approved and officially accepted toward the major).

- Minimum 3.25 cumulative GPA
- Completed official GRE, GMAT, or LSAT exam (unless applicants meet one or more of the waiver criteria; see Master of Criminal Justice section of this catalog for criteria)

ADMISSION CRITERIA

Students can apply for the accelerated program during their junior year. Students will apply according to the SPA and UCCS Graduate School application deadlines for fall and spring admission. The following steps should help in the application process:

- Plan ahead when scheduling courses through the junior year. All four of the required undergraduate criminal justice courses and all of the student's core education requirements must be completed by the end of the student's junior year.
- At the beginning of the semester in which the student is applying to the program, the student should approach criminal justice faculty members about writing letters of recommendation. The student should also begin working on a personal statement of purpose. The statement should be one page minimum, and describe the applicant's reasons for undertaking graduate study in criminal justice, the applicant's future career plans, and a planned area of concentration within criminal justice.
- Students will apply and submit all required documentation according to the graduate school application deadlines.

For further information contact:

Crista Hill, Graduate Recruitment and Retention Specialist
Email: chill12@uccs.edu

CRIMINAL JUSTICE GRADUATE CERTIFICATE

The field of criminology and criminal justice draws on diverse perspectives to explore the nature, extent, management, control, consequences, and prevention of crime and violence. This graduate certificate in Criminal Justice offers current and aspiring professionals the opportunity to develop and enhance research and critical thinking skills, problem solving, and managerial and leadership skills to pursue positions in a variety of criminal justice settings, as well as government, research, and private nonprofit agencies. This certificate program meets Department of Education regulations for gainful employment programs; students are eligible to apply for financial aid.

Required Courses

- CJ 5001 - Criminal Justice Systems, Policy and Practice
- CJ 5002 - Criminological Theory

Plus two of the following courses:

- CJ 5007 - Violence
- CJ 5410 - Victim Studies
- CJ 5552 - Criminal Justice Ethics
- CJ 5560 - Comparative Criminal Justice
- CJ 5571 - Social Organization of Crime

- CJ 5573 - Organized Crime
- CJ 5574 - White Collar Crime

GRANT WRITING, MANAGEMENT, AND PROGRAM EVALUATION GRADUATE CERTIFICATE

This certificate program engages students in systematic research and study designed to improve the quality of grant writing and program evaluation within local governments, nonprofits, educational settings, and criminal justice and public service agencies. The course content emphasizes competence in the language of grants, proposal development, funding sources and processes, designing and writing creative proposal letters, creating budgets, developing effective evaluation tools, and understanding fiscal management functions and regulations. The certificate is designed for people interested in professional careers in, or careers that include, grant writing, grant management, and/or program evaluation. Students may also become interested in enrolling in the Master of Criminal Justice (MCJ) or Master of Public Administration (MPA) program.

Required Courses

- PAD 5350 - Program Evaluation
- PAD 6115 - Grant Writing
- PAD 6125 - Grant Management

OR students can complete the following courses:

- CJ 6105 - Program Evaluation
- CJ 6115 - Grant Writing
- CJ 6125 - Grant Management

Plus one of the following courses:

- CJ 5004 - Statistics
- CJ 5009 - Crime and Violence Prevention and Intervention
- CJ 6135 - Advanced Program Evaluation
- PAD 5110 - Seminar in Nonprofit Management
- PAD 5140 - Nonprofit Financial Management
- PAD 5150 - Understanding and Achieving Funding Diversity
- PAD 5503 - Governmental Budgeting
- PAD 6135 - Advanced Program Evaluation

HOMELAND SECURITY AND EMERGENCY MANAGEMENT GRADUATE CERTIFICATE

This certificate is designed for law enforcement, public safety, and emergency first responders, as well as military personnel potentially interested in civilian security careers. This certificate will expose students to the threats to the United States, ranging from terrorism and natural disasters to climate change. Classes are taught by recognized experts with extensive practical experience in leadership positions at law enforcement and emergency management agencies.

Required Courses

- PAD 5950 - Major Issues in National and Homeland Security
- PAD 5960 - Introduction to Homeland Security and All Hazards
- PAD 5970 - Intelligence and Security Policymaking
- PAD 5980 - Security and Emergency Management Leadership

OR students can complete the following four courses for the certificate:

- CJ 5950 - Major Issues in National and Homeland Security
- CJ 5960 - Introduction to Homeland Security and All Hazards
- CJ 5970 - Intelligence and Security Policymaking
- CJ 5980 - Security and Emergency Management Leadership

HOMELAND SECURITY UNDERGRADUATE CERTIFICATE

This certificate is designed to help students to prepare for jobs related to homeland security and homeland defense. As employment opportunities expand in the private sector and at all levels of the public sector, students who earn this certificate will be well-positioned to serve as first responders, analysts, information security specialists and consultants in the growing homeland security field.

Students must earn a grade of C or better in each course required for the certificate.

Required Courses

- CJ 3400 - Public Administration and Homeland Security
- CJ 4400 - Understanding Terrorism
- CJ 4401 - Introduction to First Responder Organizations

  OR students can complete the following three courses for the certificate:

- PAD 3400 - Public Administration and Homeland Security
- PAD 4400 - Understanding Terrorism
- PAD 4401 - Introduction to First Responder Organizations

LOCAL GOVERNMENT MANAGEMENT GRADUATE CERTIFICATE

This certificate program provides local government managers and students with opportunities to improve the quality of local government systems in Colorado. The certificate focuses on innovative management and policy techniques and provides the School of Public Affairs with the opportunity to partner with local government agencies as a workforce development partner. Further, the certificate is designed for people interested in or around a professional career in local government who may also become interested in enrolling in the Master of Public Administration (MPA) program.

Required Courses

The Local Government Certificate Program consists of four 3-credit hour graduate courses totaling 12 hours of graduate coursework. PAD 5503 and PAD 5625 or PAD 5626 and must be completed before enrolling in PAD 5630 and PAD 5631. PAD 5630 and PAD 5631 may be taken in any order.

- PAD 5503 - Governmental Budgeting
- PAD 5625 - Local Government Management

  or

- PAD 5626 - Local Government Politics and Policy
- PAD 5630 - Executive Local Governance I
- PAD 5631 - Executive Local Governance II

NATIONAL SECURITY INTELLIGENCE GRADUATE CERTIFICATE

This certificate offers students insight into United States security and intelligence organizations and structures, and enables understanding of threats the U.S. is facing from various state and non-state actors. The certificate is designed for students interested in careers in federal- and state-level security and intelligence agencies, military operations and planning, think tanks, and private sector security. Students attending this program will engage with recognized national experts and experienced practitioners in the field. The National Security Intelligence certificate will provide tools for students to think critically about security threats to the United States, and to analyze, interpret, and act upon information collected by the intelligence community.

Required Courses

- PAD 5950 - Major Issues in National and Homeland Security
- PAD 5965 - International Relations and U.S. Foreign Policy
- PAD 5970 - Intelligence and Security Policymaking
- PAD 5985 - U.S. Intelligence Analysis in the 21st Century

OR students can complete the following four courses for the certificate:

- CJ 5950 - Major Issues in National and Homeland Security
- CJ 5965 - International Relations and U.S. Foreign Policy
- CJ 5970 - Intelligence and Security Policymaking
- CJ 5985 - U.S. Intelligence Analysis in the 21st Century

NONPROFIT FUND DEVELOPMENT GRADUATE CERTIFICATE

This certificate program provides present and potential fund development professionals with the knowledge and skills for successful fund raising in the nonprofit sector. Courses cover the following knowledge areas: current and prospective donor research; leadership; high impact philanthropy; foundation management; social enterprise; social media communication; volunteer development; and grant writing, management, and accountability. This certificate program meets Department of Education regulations for gainful employment programs; students are eligible to apply for financial aid.

Required Courses

- PAD 5110 - Seminar in Nonprofit Management
- PAD 5150 - Understanding and Achieving Funding Diversity

Plus two of the following courses:

- PAD 5140 - Nonprofit Financial Management
- PAD 5180 - Social Entrepreneurship
- PAD 6115 - Grant Writing

NONPROFIT MANAGEMENT GRADUATE CERTIFICATE

Thriving nonprofit organizations are an essential component of community well-being. This certificate program provides the knowledge and skills to lead and manage nonprofits effectively. Aspiring nonprofit leaders will gain fundamental skills; those already in the field will expand their skills; and nonprofit board members will gain knowledge to enhance their capacity to govern. This certificate program meets Department of Education regulations for gainful employment programs; students are eligible to apply for financial aid.

Required Courses

- PAD 5110 - Seminar in Nonprofit Management
- PAD 5140 - Nonprofit Financial Management
- PAD 5160 - Nonprofit Boards and Executive Leadership

Plus one of the following courses:

- PAD 5130 - Collaboration Across Sectors
- PAD 5150 - Understanding and Achieving Funding Diversity
- PAD 5170 - Strategic Management for Nonprofit and Public Managers
- PAD 5180 - Social Entrepreneurship
- PAD 5220 - Human Resource Management in Public Service Organizations
- PAD 5260 - Managing in a Multicultural Society
- PAD 5350 - Program Evaluation
- PAD 5460 - Political Advocacy
- PAD 6115 - Grant Writing

Note: Other courses (e.g., special topics) may be applied to this certificate with advance permission from the MPA Program Director.

PUBLIC MANAGEMENT GRADUATE CERTIFICATE

This certificate provides current and future professionals with skills to adapt, respond, and lead through the challenges of public service delivery. Certificate graduates gain expertise in human resource management, public policy communication, and organizational management while developing confidence in applying innovative approaches in strategic planning and management, workforce development, economic development, and public participation. Certificate work lays the foundation for management in local, state, or federal public service. This certificate program meets Department of Education regulations for gainful employment programs; students are eligible to apply for financial aid.

Required Courses

- PAD 5001 - Introduction to Public Administration and Public Service
- PAD 5002 - Organizational Management and Behavior

Plus one of the following courses:

- PAD 5004 - Economics and Public Finance
- PAD 5005 - The Policy Process and Democracy

And one of the following courses:

- PAD 5220 - Human Resource Management in Public Service Organizations
- PAD 5625 - Local Government Management
- PAD 5626 - Local Government Politics and Policy

CRIMINAL JUSTICE, MCJ

The Master of Criminal Justice program provides an interdisciplinary perspective on the study of crime and the criminal justice system. It focuses on criminal offending and victimization, law enforcement, the judiciary, correctional systems, juvenile justice, and the formulation of laws and codes. Individual courses explore the dynamic of criminality and victimization, systems analysis, policy analysis, organizational theory and behavior, and program development within the criminal justice system. Students pursuing professional careers will gain an understanding of theory and its applications in practices. Students aspiring to research careers or doctoral work will acquire a strong foundation in criminology and criminal justice research.

GENERAL REQUIREMENTS

- A minimum of 36 credit hours of appropriate graduate study, including a minimum of 27 credit hours in criminal justice. The remaining courses for the degree may be under the criminal justice heading or under another discipline, with prior written approval of the MCJ Program Director.
- A grade point average of B (3.0 on a 4-point scale) or better is required for degree candidacy.
- Grades of B- or better in all courses counted towards the degree.
- No more than 6 credit hours of independent study.

COURSE REQUIREMENTS

Core Courses

- CJ 5001 - Criminal Justice Systems, Policy and Practice
- CJ 5002 - Criminological Theory
- CJ 5003 - Research Methods

  Note: CJ 5003 should be taken the semester before Capstone/Thesis.

- CJ 5007 - Violence
- CJ 5008 - Gender, Race, Ethnicity & Social Class: Implications for Criminology, CJ, & Public Service
- CJ 5009 - Crime and Violence Prevention and Intervention

Elective Courses

Students must complete 9-15 credit hours of electives, depending on internship requirements and Capstone or Thesis selection. Elective courses include a mixture of specialized courses, workshops, and other formats. Students may choose to focus these elective hours around a particular area based on their interests and career goals. Where appropriate, students may include specialized courses offered by other departments and schools of the University, with prior written approval of the MCJ Program Director.

Field Study in Criminal Justice

Students who have not had at least one year of professional experience in a criminal justice organization are required to complete CJ 6910 Field Study in Criminal Justice. A minimum of 240 hours of supervised work is required to earn 3 hours of credit. Students must have completed at least 9 hours of coursework to enroll in Field Study.

Capstone Requirements: Capstone or Thesis

All MCJ students, except those pursuing the thesis option, are required to complete CJ 5361, Capstone Seminar, in which they conduct, write, and present a public service oriented client-based project. The Capstone Seminar should be taken after all core courses have been completed with a grade of B- or better, and is ideally taken the last semester in the MCJ program. Students are advised to complete CJ 5003 Research Methods the semester prior to completing the Capstone Seminar, ideally using the Research Methods course to formulate a project proposal, contact a second reader, and begin an Institutional Review Board (IRB) application. Capstone Seminar is offered ONLY in the fall and spring semesters.

In Capstone Seminar, students work with a client in a criminal justice agency to identify a problem and then, using the knowledge and skills they have gained in the program, carry out a project and write a paper to address the problem. The principle of the course is that it provides students with an opportunity to integrate what they have learned and apply their knowledge and skills to a real-world problem. Further, it provides the faculty with an opportunity to judge the student's ability to perform such work.

Students should complete the following steps the semester prior to enrolling in CJ 5361 Capstone Seminar:

- Attend a Capstone Seminar workshop hosted by the School of Public Affairs
- Identify a partner agency for the Capstone project
- Obtain an agreement from a MCJ faculty member to serve as a second reader on the Capstone project
- Draft a proposal and IRB application for the Capstone project (may be completed in CJ 5003 Research Methods)
- Work with the Capstone Seminar instructor to submit an IRB proposal for review prior to the start of the semester in which they will enroll in the Capstone Seminar

The thesis option is available for MCJ students who are interested in undertaking a research project, pursuing careers in research, or entering a Ph.D. program. Students must select a thesis advisor from the faculty to oversee their work. The thesis requires six hours of credit that normally spans two semesters. Thesis students conduct a comprehensive review of the theoretical and research literature in the subject area of their thesis and collect original data or analyze existing data in new ways.

Minimum eligibility requirements for pursuing a thesis include:

- Matriculation in the MCJ program
- Successful completion of all core courses
- Overall GPA of 3.5 or higher
- Demonstrated ability to pursue empirically-based work, as evidenced by research conducted in MCJ core courses
- Preliminary identification of a thesis topic or area of interest
- Agreement of at least two MCJ faculty members to serve on a three-person thesis committee (one serving as thesis advisor)
- The submission of a thesis prospectus developed under the supervision of a faculty advisor and approval of this document by the thesis committee

A student wishing to undertake the thesis option applies formally through her/his faculty advisor, first, to establish eligibility with respect to the above criteria, and second, to identify appropriate faculty members to serve on the student's three-person thesis committee. The thesis committee will consist of two full-time MCJ faculty members, one of whom will serve as the thesis advisor and chair. The third member of the committee may be selected from any full-time or part-time member of the SPA faculty. (NOTE: Although the formal procedures entail application through the faculty advisor, the student is encouraged to make informal contacts with appropriate subject-matter faculty to determine interest and availability.) Before the student is allowed to enroll for thesis credit, the thesis committee must formally approve a written thesis prospectus or proposal, which includes a thesis plan, a preliminary literature review, problem statement, and a timetable for completion. Upon approval of the prospectus, the student will be allowed to enroll in CJ 6950 Master's Thesis.

PUBLIC ADMINISTRATION, MPA

The Master of Public Administration program prepares students to take leadership roles in the public and non-profit sectors. This multidisciplinary degree program is designed to provide graduate professional education for students interested in public service careers. Our MPA program is accredited by the Network of Schools of Public

Policy, Affairs, and Administration (NASPAA), whose standards are the benchmark used by public administration master's degree programs worldwide.

The School of Public Affairs' MPA degree is distinctive in that students can acquire the degree entirely online, entirely in the classroom, or seamlessly in combination.

MPA MISSION

The Master of Public Administration program provides high quality graduate education for current and prospective practitioners in public and nonprofit organizations, here and abroad, to prepare them for excellence in public service.

To accomplish this mission, we strive to

- Advance public service through improving the quality of public, nonprofit, national security, and criminal justice systems.
- Teach students from diverse backgrounds to work collaboratively to meet societal challenges ethically, with compassion, vision, analytic rigor, and practicality.
- Foster strategic leadership skills: critical thinking and decision-making, effective communication, creative problem-solving, knowledge management, multi-sector understanding, and global citizenship.
- Support and model civil public discourse, citizenship, responsibility, and respect.
- Facilitate a process of lifelong learning that evolves and adapts to the changing nature of the field and continuous development of the knowledge, skills, and abilities required.

MPA CORE COMPETENCIES

Graduates of the MPA program will have the following competencies, as enumerated by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA), the program's accrediting body:

- Lead and manage in public governance;
- Participate effectively in the public policy process;
- Analyze, synthesize, think critically, solve problems, and make decisions;
- Articulate and apply a public service perspective;
- Communicate and interact productively with a diverse and changing workforce and citizenry.

GENERAL REQUIREMENTS

- Complete a minimum of 36 credit hours of graduate coursework with a total grade point average of B (3.0 on a 4-point scale) or better;
- Complete an additional 3 credit hours of internship/field study (if required); and
- Grades of B- or better in all courses counted towards the degree.

COURSE REQUIREMENTS

Core Courses

- PAD 5001 - Introduction to Public Administration and Public Service

  Note: Students are expected to complete PAD 5001 within their first two semesters of enrollment.

- PAD 5002 - Organizational Management and Behavior
- PAD 5003 - Research and Analytic Methods

  Note: PAD 5003 should be taken the semester before Capstone/Thesis.

- PAD 5004 - Economics and Public Finance
- PAD 5005 - The Policy Process and Democracy
- PAD 5006 - Ethics and Leadership

Elective Courses
Students must complete 9-15 credit hours of electives, depending on Capstone or Thesis selection. Elective courses include a mixture of specialized courses, workshops, and other formats. Students may choose to focus these elective hours around a particular area based on their interests and career goals. Where appropriate, students may include specialized courses offered by other departments and schools of the University, with prior written approval of the MPA Program Director.

Capstone Requirements: Capstone Seminar or Thesis
All MPA students, except those pursuing the thesis option, are required to complete PAD 5361, Capstone Seminar, in which they conduct, write, and present a public service oriented client-based project. The Capstone Seminar should be taken after all core courses have been completed with a B- or better, and is ideally taken the last semester in the MPA program. Students are advised to complete PAD 5003 Research and Analytic Methods the semester prior to completing the Capstone Seminar, ideally using the Research Methods course to formulate a project proposal, contact a second reader, and begin an Institutional Review Board (IRB) application. Capstone Seminar is offered ONLY in the fall and spring semesters.

In Capstone Seminar, students work with a client in a public or nonprofit agency to identify a problem and then, using the knowledge and skills they have gained in the program, carry out a project and write a paper to address the problem. Projects take many different forms including business plans, marketing plans, surveys and interviews, salary studies, etc. The principle of the course is that it provides students with an opportunity to integrate what they have learned and apply their knowledge and skills to a real-world problem. Further, it provides the faculty with an opportunity to judge the student's achievement of MPA core competencies.

Students should complete the following steps the semester prior to enrollment in PAD 5361 Capstone Seminar:

- Attend a Capstone Seminar workshop hosted by the School of Public Affairs
- Identify a partner agency for the Capstone project
- Obtain an agreement from a MPA faculty member to serve as a second reader on the Capstone project
- Draft a proposal and IRB application for the Capstone project (may be completed in PAD 5003 Research and Analytic Methods)
- Work with the Capstone Seminar instructor to submit an IRB proposal for review prior to the start of the semester in which they will enroll in the Capstone Seminar

The thesis option is available in lieu of PAD 5361 for MPA students who have an interest in pursuing a topic in-depth or who are planning to pursue a career in research or academia. Students must receive approval from their faculty advisor to pursue the thesis option. The thesis requires six credit hours of credit that normally spans two semesters.

Minimum eligibility requirements for pursuing a thesis include:

- Matriculation in the MPA program

- Successful completion of all core courses
- Overall GPA of 3.5 or higher
- Preliminary identification of a thesis topic or area of interest
- Agreement of two SPA faculty members to serve on the thesis committee (one as thesis advisor)

A student wishing to undertake the thesis option applies formally through her/his faculty advisor, first, to establish eligibility with respect to the above criteria, and second, to identify appropriate faculty members to serve on the student's thesis committee. The thesis committee consists of three people: a thesis advisor who is a full-time SPA faculty member, and two others. One of these must be a SPA faculty member, though the person can be an adjunct faculty member, and the other is a reader who has expertise in the area, but is either from the community or another school or department. (NOTE: Although the formal procedures entail application through the faculty advisor, the student is encouraged to make informal contacts with appropriate subject-matter faculty to determine interest and availability.)

Field Study in Public Administration

The Master of Public Administration (MPA) program includes professional experience among the requirements for degree completion. Students who do not have at least one year of professional experience in the field of public administration or nonprofit management, or the equivalent, are classified as pre-service. Pre-service students are required to complete a 3-credit internship course, PAD 6910 Field Study in Public Administration, which brings their total required course hours to 24 and the total hours required for the degree to 39.

In-service students may also enroll in PAD 6910 and complete an internship to obtain additional experience that differs from or is more specialized than previous experience. In this instance, the internship may be counted as an elective toward degree completion.

The MPA program director examines each student's application and determines whether an internship is required or should be waived; each student is notified of this decision in his/her admission letter.

Students must have completed at least 9 hours of coursework to enroll in Field Study. A minimum of 240 hours of supervised work is required to earn 3 hours of credit.

Additional information regarding internships may be found in the MPA Handbook, available on the School of Public Affairs website.

PUBLIC ADMINISTRATION, MPA/CRIMINAL JUSTICE, MCJ DUAL DEGREE

The fields of public administration and criminal justice are closely connected. The MPA is a professional degree designed to prepare students for a variety of positions in public and nonprofit management and policy analysis, while criminal justice studies prepare graduates to work in organizations within the substantive policy area. The joint degree program prepares its graduates for overlapping careers in public, nonprofit, and private organizations that require both criminal justice and management knowledge. The dual degree also prepares students for research careers or advanced graduate studies. Students take the cores of both programs and choose electives that best suit their career and personal goals, completing both degrees in 54 hours versus the 72 hours it would take to complete each degree separately.

GENERAL REQUIREMENTS

- A minimum of 54 credit hours of appropriate graduate study, including a minimum of 9 core hours in criminal justice, 15 core hours in public administration, and 3 hours of research methods. The remaining

courses for the degree may be under the criminal justice or public administration heading or under another discipline, with prior written approval of the program director.

- A grade point average of B (3.0 on a 4-point scale) or better is required for degree candidacy.
- Grades of B- or better in all courses counted towards the degree.
- No more than 6 credit hours of independent study.

COURSE REQUIREMENTS

Core Courses

MCJ Core Courses (15 credit hours)

- CJ 5001 - Criminal Justice Systems, Policy and Practice
- CJ 5002 - Criminological Theory
- CJ 5007 - Violence
- CJ 5008 - Gender, Race, Ethnicity, & Social Class: Implications for Criminology, CJ, & Public Service
- CJ 5009 - Crime and Violence Prevention and Intervention

MPA Core Courses (15 credit hours)

- PAD 5001 - Introduction to Public Administration and Public Service
- PAD 5002 - Organizational Management and Behavior
- PAD 5004 - Economics and Public Finance
- PAD 5005 - The Policy Process and Democracy
- PAD 5006 - Ethics and Leadership

Research Methods (3 credit hours)

- PAD 5003 Research and Analytic Methods or CJ 5003 Research Methods

Note: PAD 5003/CJ 5003 should be taken the semester before Capstone/Thesis.

Elective Courses

Students must complete 12-18 credit hours of electives. Elective courses include a mixture of specialized criminal justice and/or public administration courses, workshops, and other formats. Students may choose to focus these elective hours around a particular area based on their interests and career goals. Where appropriate, students may include specialized courses offered by other departments and schools of the University, with prior written approval of the program director.

Field Study in Public Administration or Criminal Justice

Students who have not had at least one year of professional experience in a criminal justice or public service organization are required to complete either PAD 6910 Field Study in Public Administration or CJ 6910 Field Study in Criminal Justice. A minimum of 240 hours of supervised work is required to earn three hours of credit. Students must have completed at least nine hours of coursework to enroll in Field Study.

Capstone Requirements: Capstone or Thesis

All Dual MPA/MCJ students, except those pursuing the thesis option, are required to complete PAD 5361 Capstone Seminar or CJ 5361 Capstone Seminar, in which they conduct, write, and present a public service oriented client-based project. The Capstone Seminar should be taken after all core courses have been completed with a grade of B- or better, and is ideally taken the last semester in the Dual MPA/MCJ program. Students are advised to complete PAD 5003 Research and Analytic Methods or CJ 5003 Research Methods the semester prior to completing the Capstone Seminar, ideally using the Research Methods course to formulate a project proposal, contact a

second reader, and begin an Institutional Review Board (IRB) application. Capstone seminar is offered ONLY in the fall and spring semesters.

In Capstone Seminar, students work with a client in a criminal justice or public service/nonprofit agency to identify a problem and then, using the knowledge and skills they have gained in the program, carry out a project and write a paper to address the problem. The principle of the course is that it provides students with an opportunity to integrate what they have learned and apply their knowledge and skills to a real-world problem. Further, it provides the faculty with an opportunity to judge the student's ability to perform such work.

Students should complete the following steps the semester prior to enrolling in PAD 5361 Capstone Seminar or CJ 5361 Capstone Seminar:

- Attend a Capstone Seminar workshop hosted by the School of Public Affairs
- Identify a partner agency for the Capstone project
- Obtain an agreement form from a MPA or MCJ faculty member to serve as a second reader on the Capstone project
- Draft a proposal and IRB application for the Capstone project (may be completed in PAD 5003 Research and Analytic Methods or CJ 5003 Research Methods)
- Work with the Capstone Seminar instructor to submit an IRB proposal for review prior to the start of the semester in which they will enroll in the Capstone Seminar

The thesis option is available for Dual MPA/MCJ students who are interested in undertaking a research project, pursuing careers in research, or entering a Ph.D. program. Students must select a thesis advisor from the faculty to oversee their work. The thesis requires six hours of credit that normally spans two semesters. Thesis students conduct a comprehensive review of the theoretical and research literature in the subject area of their thesis and collect original data or analyze existing data in new ways.

Minimum eligibility requirements for pursuing a thesis include:

- Matriculation in the Dual MPA/MCJ program.
- Successful completion of all core courses.
- Overall GPA of 3.5 or higher.
- Demonstrated ability to pursue empirically-based work, as evidenced by two submitted research papers developed in MPA or MCJ courses.
- Preliminary identification of a thesis topic or area of interest.
- Agreement of at least two MPA or MCJ faculty members to serve on a three-person thesis committee (one serving as thesis advisor).
- The submission of a thesis prospectus developed under the supervision of a faculty advisor and approval of this document by the thesis committee.

A student wishing to undertake the thesis option applies formally through her/his faculty advisor, first, to establish eligibility with respect to the above criteria, and second, to identify appropriate faculty members to serve on the student's three-person thesis committee. The thesis committee will consist of two full-time MPA or MCJ faculty members, one of whom will serve as the thesis advisor and chair. The third member of the committee may be selected from any full-time or part-time member of the SPA faculty. (NOTE: Although the formal procedures entail application through the faculty advisor, the student is encouraged to make informal contacts with

appropriate subject-matter faculty to determine interest and availability.) Before the student is allowed to enroll for thesis credit, the thesis committee must formally approve a written thesis prospectus or proposal, which includes a thesis plan, a preliminary literature review, problem statement, and a timetable for completion. Upon approval of the prospectus, the student will be allowed to enroll in PAD 6950 Master's Thesis or CJ 6950 Master's Thesis.

CRIMINAL JUSTICE MINOR

A minor in Criminal Justice requires 18 credit hours of Criminal Justice coursework.

GENERAL REQUIREMENTS

- A minimum of 9 credit hours of upper-division CJ courses are required for a minor in Criminal Justice.
- Students must earn a grade of C or better in each course required for the minor.
- Minor requirements may not be taken pass/fail.
- No more than 9 credit hours, including no more than 6 upper-division credit hours of transfer work, may count toward the minor in Criminal Justice.

Required Courses

- CJ 1001 - Introduction to Criminal Justice
- CJ 2041 - Crime Theory and Causes

Electives

At least two of the following:

- CJ 3250 - Violence in Society
- CJ 4042 - Corrections
- CJ 4043 - Law Enforcement
- CJ 4044 - Courts and Judicial Process
- CJ 4121 - Ethics in Criminal Justice

Plus two additional elective courses in Criminal Justice, one of which must be upper division.

PUBLIC AFFAIRS PROGRAMS OF STUDY

Discipline	Bachelor of Arts	Minor	Master's Degree	Undergraduate Certificate	Graduate Certificate
Criminal Justice	BA, on campus and online courses available Accelerated BA to MCJ Dual degree in CJ and Psychology	Minor	MCJ, on campus and online courses available		Certificate

	Dual degree in CJ and Sociology				
Public Administration			MPA, on campus and fully online		
Dual Masters Program - Public Administration and Criminal Justice			MPA/MCJ, on campus and online courses available		
Grant Writing, Management, and Program Evaluation					Certificate
Homeland Security				Certificate	
Homeland Security and Emergency Management Lead-ership					Certificate
Local Government Management					Certificate
National Security Intelligence					Certificate
Nonprofit Fund Development					Certificate
Nonprofit Management					Certificate
Public Management					Certificate

Online and Academic Outreach

GENERAL INFORMATION

Location: University Office Park 1861, Suite 100
Telephone: (719) 255-3498
Fax: (719) 255-3911
email: outreach@uccs.edu
Website: www.uccs.edu/outreach

Online and Academic Outreach (formerly Campus Wide Extended Studies) is an accredited program offering a myriad of online degrees, certificates, dual credit programs, and variety of professional development courses and programs.

All course offerings administered by OAO are developed in collaboration with UCCS colleges and faculty. OAO strives to offer a variety of online degrees and certificates to a wide array of students both nationally and internationally. Creating high quality programs and offering them to a diverse audience is what CWES strives for on a daily basis.

MISSION

Our mission is to extend the resources of the University of Colorado Colorado Springs in non-traditional ways by providing high quality educational, training and professional development opportunities to the community, state, and nation.

PROGRAMS OFFERED

ONLINE DEGREES

Experience the quality and innovation of UCCS at a distance. UCCS offers undergraduate degree completion programs, master's degree programs, and doctorate degree program. All online degree programs allow students to study from anywhere.

ONLINE CERTIFICATES

Multiple graduate level certificates are available for professional development. Many of the certificate courses can also be applied toward a degree program.

WEEKEND UNIVERSITY

Weekend University is a condensed 10-week format on Saturdays course option. All Weekend University courses have a special "W" section number that makes them easy to identify. All Weekend University courses count toward students' full-time credit load and financial aid eligibility.

CU SUCCEED, CU SUCCEED PLATINUM, AND PROJECT LEAD THE WAY (PLTW)

The CU Succeed program is a unique partnership that exists between UCCS and Colorado high schools that gives high school students the opportunity to earn college credits prior to graduating from high school. This is a concurrent credit program which allows high school students to begin achieving their education goals.

TEACHER EDUCATION

In cooperation with our education partners, Extended Studies offers professional development courses for K-12 teachers. Online graduate degrees are also available to teachers to enhance their education background and experience.

PROJECT LEAD THE WAY (PLTW)

UCCS is the Colorado Affiliate University for Project Lead the Way (PLTW), a national program forming partnerships among public schools, higher education institutions and the private sector in order to encourage students to expand upon their knowledge in Science, Technology, Engineering, and Mathematics (STEM). UCCS provides quality PLTW summer training for middle school and high school teachers, ongoing training, and networking opportunities throughout the school year. The campus also provides college engineering graduate credit opportunities for those middle and high school teachers that participate in summer training, and undergraduate engineering credit opportunities for high school students in PLTW-certified schools.

LISTENING IN

Listening In allows lifelong learners age 55 or older the opportunity to attend regular-session courses on a space-available basis. No academic credit is earned, but the program provides an opportunity for seasoned adults to share in the vast and varied resources of the University at a minimal cost.

NON-CREDIT COURSES: ON-CAMPUS AND ONLINE

Non-credit short courses and executive seminars are held at the UCCS campus and in the community. Check Online and Academic Outreach's website for a calendar of upcoming courses.

Courses

ACCT-Accounting

ACCT 2010 - Intro to Financial Accounting

3 Credits
Provides knowledge of core business concepts in financial accounting following generally accepted accounting principles. Emphasis on understanding the primary objectives, principles, and users of financial accounting, analyzing basic business transactions and understanding their impact on financial statements, and defining and identifying the basic elements and content on each financial statement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., MATH 1040 or higher.

ACCT 2020 - Intro to Managerial Accounting

3 Credits
Provides knowledge of core business concepts related to selected financial accounting topics and basic managerial accounting, including preparation of the statement of cash flows, basic financial statement analysis, the analysis of product, service and period costs, and the role of accounting in the planning and control of business enterprises. Emphasis on problem-solving skills supported by appropriate analytical quantitative and qualitative techniques for tactical and operational decision making. Includes the use of spreadsheets. Prer., ACCT 2010. Business students only.

ACCT 3010 - Intermediate Accounting I

3 Credits
A comprehensive analysis of the practice of financial accounting and reporting by public corporations to investors, creditors and other users. Includes analysis of standard setting, accounting theory and generally accepted accounting principles. Emphasis is on the purpose of financial statements with a focus on income determination and asset valuation. Includes the use of spreadsheets. Prer., ACCT 2020 or ACCT 5500. Coreq., INFS 1100 or Graduate student. Business students only.

ACCT 3020 - Intermediate Accounting II

3 Credits
A continuation of ACCT 3010 with focus on liabilities, equity, and special areas, including cash flow statements, leases, pensions, income taxes, and earnings per share. Includes the use of spreadsheets. Prer., ACCT 3010.

ACCT 3110 - Cost Accounting

3 Credits
Cost analysis for purposes of control and decision making. Analysis of cost behavior, role of accounting in planning and control, and managerial uses of cost Accounting data. Includes use of spreadsheets. Topics of current interest will be discussed, including activity-based costing. Prer., ACCT 2020 or ACCT 5500. Coreqs., INFS 1100 or Graduate student. Business students only.

ACCT 4010 - Advanced Financial Accounting

3 Credits
Advanced financial accounting provides an in-depth analysis into the theory and practices of accounting for business combinations, consolidated financial statements, international operations and partnerships. Prer., ACCT 3020. Junior standing; Business students only. Meets with ACCT 6750.

ACCT 4210 - Individual Income Tax

3 Credits
Analysis of basic concepts of federal income taxes such as income, exclusions, deductions, passive losses, and property transactions. Concepts will be applied to actual situations by the use of a computer-generated tax return package. Focus is on individual considerations and planning. Prer., ACCT 3010. Business students only. Meets with ACCT 6710.

ACCT 4220 - Corporate & Partnership Taxation

3 Credits
Primary emphasis is on C and S corporations and partnerships. Basic analysis of planning and compliance of most forms of corporate and partnership organization, operations, mergers and dissolutions. Business planning and international taxation are also considered. Prer., ACCT 4210. Business students only.

ACCT 4310 - Intro to Accounting Systems

3 Credits
An introduction to the elements in an accounting information system, one of an organization's central information systems. Explores the newest technology and the accountant's/financial analyst's role in designing systems. Includes "Hands-on" projects designed to expose the student to various software tools commonly used by accountants and financial analysts. Students will also complete several projects on a leading accounting software package. Prer., ACCT 3010, INFS 3000. Meets with ACCT 6730.

ACCT 4410 - Accounting for Governments and Not-for-Profit Organizations

3 Credits
The course provides an introduction to financial reporting practices in governmental and not-for-profit organizations. Emphasis is placed on how financial reports created by governments and not-for-profit organizations are used by internal and external stakeholders. Accounting issues specific to governmental and not-for-profit organizations will also be covered in detail. Necessary for CPA exam preparation. Prer., ACCT 3010. Meets with ACCT 6740.

ACCT 4510 - Accounting Ethics and Institutions

3 Credits
An in-depth study of the technical and behavioral ethical standards existing for professional accountants in all fields, and of the political and regulatory institutions that affect the practice of professional accounting including the SEC, IRS, FASB, AICPA and state authorities. Prepares students for dealing successfully with ethical issues throughout their careers. Prer., ACCT 4600, Junior or Senior standing or COB Undergraduate Director permission. Meets with ACCT 6510.

ACCT 4600 - Auditing

3 Credits
A study of generally accepted auditing standards. Specific focus is placed on concepts of the auditing function for financial audits, professional standards that guide audit performance, and processes and formal procedures used to plan, perform, and complete an audit. Req., ACCT 3010. Coreq., ACCT 3020. Business students only. Meets with ACCT 6600.

ACCT 4620 - Advanced Auditing

3 Credits
Study of advanced theoretical and practical issues in auditing. Specific focus is placed on the application of auditing resources commonly used in practice. The course emphasizes case analysis, research, individual and team presentations, and classroom discussion.

Req., ACCT 4600 or ACCT 6600. Business students only. Meets with ACCT 6620.

ACCT 4950 - Topics in Accounting

1-3 Credits
Experimental course in accounting. Prer., Junior or senior standing or COB Undergraduate Director permission.

ACCT 4960 - Internship in Accounting

1-3 Credits
Undergraduate accounting internship for business students. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/senior business students only. ACCT 3010 with a "B" or better.

ACCT 5500 - Introduction to Accounting

3 Credits
MBA foundation course. Introduction to concepts, principles and practices used in preparation of financial statements for business enterprises, with emphasis on asset and liability recognition and measurement, income determination, and cash flow activities. Includes the use of spreadsheets. Prer., Graduate business students only.

ACCT 5590 - Introduction to Accounting

3 Credits
MBA foundation course. Introduction to concepts, principles and practices used in preparation of financial statements for business enterprises, with emphasis on asset and liability recognition and measurement, income determination, and cash flow activities. Includes the use of spreadsheets.Online graduate course. Tuition schedule differs from on-campus courses. Prer., Graduate business students only.

ACCT 6010 - Seminar: Financial Accounting Theory

3 Credits
A concentrated analysis and evaluation of alternative conceptual systems for reporting about and by public corporations in financial statements. Involves considering the economic and political history of currently acceptable and unacceptable theories and practices for financial accounting in general and for specific topics. Prer., ACCT 3010 and ACCT 3020 or equivalent; MSA, MBA, or graduate Accounting Certificate students only.

ACCT 6100 - Accounting for Decision Making

3 Credits
An exploration of the use of accounting information for executive decision-making. Emphasis is on understanding and applying basic managerial accounting skills to identify, use, and evaluate accounting information in both long-term strategic decisions and short-term operating decisions. Prer., Graduate students only and ACCT 5500.

ACCT 6110 - Seminar: Managerial Accounting Issues

3 Credits
An in-depth exploration of the broad professional field of managerial accounting, especially as related to organizational decision making, planning and control. Development and current problems of the managerial accounting functions are analyzed. Prer., ACCT 3110; MSA, MBA, or graduate Accounting Certificate students only.

ACCT 6190 - Accounting for Decision Making

3 Credits
An exploration of the use of accounting information for executive decision-making. Emphasis is on understanding and applying basic managerial accounting skills to identify, use, and evaluate accounting information in both long-term strategic decisions and short-term operating decisions. Online graduate course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only. Prer., ACCT 5590.

ACCT 6510 - Accounting Ethics and Institutions

3 Credits
An in-depth study of the technical and behavioral ethical standards existing for professional accountants in all fields, and of the political and regulatory institutions that affect the practice of professional accounting including the SEC, IRS, FASB, AICPA and state authorities. Prepares students for dealing successfully with ethical issues throughout their careers. Meets with ACCT 4510. Prer., ACCT 6600 or ACCT 4600; MSA, MBA, or graduate Accounting Certificate students only.

ACCT 6600 - Auditing

3 Credits
A study of generally accepted auditing standards. Specific focus is placed on concepts of the auditing function for financial audits, professional standards that guide audit performance, and processes and formal procedures used to plan, perform, and complete an audit. Prer., ACCT 3010; Coreq., ACCT 3020; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4600.

ACCT 6620 - Advanced Auditing

3 Credits
Study of advanced theoretical and practical issues in auditing. Specific focus is placed on the application of auditing resources commonly used in practice. The course emphasizes case analysis, research, individual and team presentations, and classroom discussion. Prer., ACCT 4600 or ACCT 6600; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4620. Graduate business students only.

ACCT 6710 - Individual Income Tax

3 Credits
Analysis of basic concepts of federal income taxes. Concepts will be applied to actual situations by the use of a computer-generated tax return package. Focus is on individual considerations and planning. Prer., ACCT 3010; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4210.

ACCT 6720 - Corporate & Partnership Taxation

3 Credits
Primary emphasis is on C and S corporations and partnerships. Basic analysis of planning and compliance of most corporation and partnership organizations, operations, mergers and dissolutions. Business planning and international taxation also considered. Prer., ACCT 4210 or ACCT 6710; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4220.

ACCT 6730 - Intro to Accounting Systems

3 Credits
An introduction to the elements in an accounting information system. Explores the newest technology and the accountant's/financial analyst's role in designing systems. Includes exposure to various software tools commonly used by accountants and financial analysts. Prer., ACCT 3010, INFS 6000; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4310.

ACCT 6740 - Accounting for Governments and Not-for-Profit Organizations

3 Credits
The course provides an introduction to financial reporting practices in governmental and not-for-profit organizations. Emphasis is placed on how financial reports created by governments and not-for-profit organizations are used by internal and external stakeholders. Accounting issues specific to governmental and not-for-profit organizations will also be covered in detail. Prer., ACCT 3010; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4410.

ACCT 6750 - Adv Financial Accounting

3 Credits
Provides an in-depth analysis into the theory and practices of accounting for business combinations, consolidated financial statements, international operations, and partnerships. Prer., ACCT 3010, ACCT 3020; MSA, MBA, or graduate Accounting Certificate students only. Meets with ACCT 4010.

ACCT 6760 - Auditing

3 Credits
A study of generally accepted auditing standards, ethical responsibilities and legal liabilities of the independent auditor and auditing techniques used by independent public accountants. Prer., ACCT 3010 and ACCT 3020. COB students only. Meets with ACCT 4610.

ACCT 6770 - Federal Tax Research and Planning

3 Credits
Students learn methods of researching tax problems and gain experience through practical exercises in the uses of research tools in locating, understanding, and interpreting source materials. Using and applying tax research methods, students will learn basic tax planning concepts. Prer., MSA, MBA, or graduate Accounting Certificate students only.

ACCT 6950 - Topics in Accounting – Graduate

1-3 Credits
Experimental course in accounting offered at the graduate level for the purpose of presenting new subject matter. Open only to MBA degree students.

ACCT 6960 - Internship in Accounting

1-3 Credits
Graduate internship in accounting. Prer., Instructor and Dean approval.

ACCT 9400 - Independent Study in Accounting - Undergraduate

1-3 Credits
With the consent of the instructor who directs the study and the dean.

ACCT 9500 - Independent Study in Accounting - Graduate

1-3 Credits
With the consent of the instructor who directs the study and the dean.

AH - Art History

AH 1000 - Art Through the Ages, Part I

3 Credits
An introduction to the history of art from the ancient world to the Renaissance. Course reading, writing assignments, and field trips equip students with the tools they need to think critically, write effectively, and build confidence in discussing art outside the classroom. Course is for non-VAPA majors only. Approved for LAS Humanities area requirement. GT-AH1.

AH 1001 - Art Through the Ages, Part II

3 Credits
An introduction to the history of art from the Renaissance to the present. Course reading, writing assignments, and field trips equip students with the tools they need to think critically, write effectively, and build confidence in discussing art outside the classroom. Course is for non-VAPA majors only. Approved for LAS Humanities area requirement.

AH 1500 - Art and Ideas: Michelangelo to Basquiat

3 Credits
An introduction to the history of art from the Renaissance to the late 20th century. Open to all VAPA majors, but required of those concentrating in visual art. Prerequisite for all lower and upper division art history courses. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive. GT-AH1.

AH 2000 - Survey: Special Topics

1-3 Credits
Selected topics focused on various historic periods of art history from throughout the world's cultures. May be repeated for credit if the topic is different.

AH 2500 - Art Matters

3 Credits
An exploration of art-related careers, an introduction to research methods in art history, and other academic skills-building exercises essential to VAPA majors with a concentration in art history. VAPA students concentrating in art history are required to take either AH 1500 or AH 2500 by the end of their second year.

AH 2800 - Survey: Ancient Art

3 Credits
A survey of sculpture, painting, and architecture from the Paleolithic through the Roman periods. The arts of Mesopotamia, Egypt, Anatolia, Greece, and Rome will be given primary consideration. Approved for LAS Humanities area requirement. GT-AH1.

AH 2810 - Survey: Medieval Art

3 Credits
A survey of the arts of early Christian, Byzantine, early Medieval, Romanesque, and Gothic periods. Approved for LAS Humanities area requirement. GT-AH1.

AH 2820 - Survey: Renaissance, Baroque, and Rococo Art

3 Credits
A survey of the paintings, sculpture, and architecture of Proto-Renaissance Italy through the European Rococo periods, roughly 1300 through 1750. Approved for LAS Humanities area requirement. GT-AH1.

AH 2850 - Survey: American Art

3 Credits
This course addresses the material culture of what now is the continental United States. Material culture in this context emphasizes painting, sculpture and architecture.

AH 2860 - Survey: Modern Art I

3 Credits
An introduction to major movements in art and architecture of the Western world from the late 19th and 20th centuries, beginning

with Post-Impressionism and ending with Abstract Expressionism. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-AH1.

AH 2870 - Survey: Modern Art II

3 Credits
An introduction to major movements in art and architecture of the western world from the mid twentieth century to the present, beginning with pop art and ending with a survey of contemporary trends.

AH 2890 - Survey: Nineteenth Century Art

3 Credits
A survey of Western art from the late eighteenth century to the mid-nineteenth century, beginning with the rejection of the rococo and ending with the realist style. Approved for LAS Humanities area requirement. GT-AH1.

AH 3000 - Topics in Art History

3 Credits
Emphasizes study of a more specific area than that covered in regular art history course offerings. For further information see individual course listing for each semester.

AH 3010 - History of Photography

3 Credits
The history of photography from its infancy to the present. The development of the photograph as art will be traced from the early 19th-century pioneers through the contemporary masters.

AH 3240 - The Art of Greece and Rome

3 Credits
A consideration of the culture of ancient Greece and Rome as expressed by architecture, painting, and sculpture from around 800 B.C. to 400 A.D. Approved for Compass Curriculum requirement: Writing Intensive.

AH 3250 - Women, Visual Arts, and Culture I

3 Credits
A survey of the lives and contributions of women artists, from the Renaissance to c. 1900. The primary objectives are to introduce issues of gender in the production of visual culture and familiarize the student with the critical literature of art history. Req., permission of instructor. Meets with WEST 3160.

AH 3260 - Women, Visual Arts, and Culture II

3 Credits
Introduction to feminist theory and women's artistic production from 1970 to the present. Focuses on how women's art attempts to resist normative ideals of femininity, subvert aesthetic hierarchies, and illuminates the intersections of race, gender, and sexual orientation. Prer., AH 2000 or permission of instructor. Meets with WEST 3260.

AH 3270 - From Modern to Postmodern Art

3 Credits
This course will examine the rapid change that characterized the art of the 20th and 21st centuries. We will begin with the emergence of cubism, dadaism, and surrealism in Europe, then shifting to American innovations, from Abstract Expressionism to graffiti.

AH 3280 - Introduction to Feminist Film, Video and Digital Media

3 Credits
A survey of major themes in feminist independent film, video and web-based projects produced since the mid-1970s. Meets with WEST 3180.

AH 3330 - Film, Video and the Avant-Garde

3 Credits
An examination of the relationship between avant-garde film and video, and the history of modern and contemporary art. Meets with FILM 3330.

AH 3430 - African American Art

3 Credits
Introduction to contemporary (1970-) African American art forms with inclusion of traditional African art's influence on American Black culture. Approved for LAS Humanities area and Cultural Diversity requirements.

AH 3450 - Art of Japan

3 Credits
Examines the depth of Japanese aesthetics through layers of art and experience. In addition to sculpture, painting and ceramics, class material encompasses the artistry of the Tea ceremony, theatre (e.g., Kabuki, No & Butoh), calligraphy and textiles. Approved for Global Awareness requirement.

AH 3460 - Islamic Arts

3 Credits
Investigates the essence and diversity of Islamic culture through time and space as it is visually expressed in architecture and other arts. Approved for LAS Global Awareness requirement. Prer., ANTH 1500, a course in Medieval art, Medieval history or by permission of instructor.

AH 3790 - Romanesque and Gothic Art

3 Credits
A consideration of Romanesque and Gothic culture as manifest in the sculpture, painting, and architecture of Europe from around 1030-1350.

AH 3840 - Baroque Art

3 Credits
The 17th century throughout Europe with primary attention to Caravaggio, Rubens, Bernini, Poussin, Velasquez, and Rembrandt.

AH 3850 - Topics in American Art

3 Credits
Selected topics in the art of America from colonial period to the present, including folk art, craft, modern art, post-modern architecture, monuments, popular art and culture, etc. Prer., A H 1000 or A H 2000 level survey.

AH 3860 - Contemporary Art

3 Credits
An in-depth, thematic study of art of the 1990s to the present that emphasizes the analysis of the art of our time in relation to a variety of critical texts. Prer., A H 1000, or 2000 level survey.

AH 3920 - Folk Arts, Folk Expressions, and Folkscapes

3 Credits
This course investigates different cultural expressions from belief systems to folk performances, vernacular architecture, and yard art where ingenuity creates senses of place, action, and performance. Includes visits to collections and folk art sites plus folk craft workshops. Meets with VAPA 3920. Prer., VAPA 1020, VAPA 1050, VAPA 1100.

AH 4000 - Seminar: The Practice of Art History

3 Credits
Seminar experience in art history methodology. Required of all graduating majors. Open to students with 15 hours of upper-division coursework in art history.

AH 4030 - Internship in Art History

1-3 Credits
Supervised opportunities for advanced art history students to apply their knowledge and obtain experience in a variety of professional arenas. Prer., Permission of advisor.

AH 4340 - Arts of Indigenous Cultures

3 Credits
An in-depth investigation of the art forms and related social customs of cultures native to the Americas, Australia, and Africa.

AH 4450 - Meso-American Art and Architecture: Sacred Time and Space

3 Credits
Examines art traditions, cultural practices and the ethno-aesthetics of the Meso-American societies, Olmec, Maya and Aztec, in light of their history and subsequent European colonization. Different art forms are studied to understand the interdependency of art, ceremony, religious and royal display, cultural continuities, tradition and change. Approved for LAS Global Awareness requirement. Prer., AH 1000, AH 1500 or consent of instructor.

AH 4470 - Art and Ritual of the South Pacific

3 Credits
Investigates myriad art traditions and cultural practices of Polynesia, Melanesia, and Micronesia. Students learn to critique and analyze dynamics of power, cultural continuities and change. Examines ways art acts as a vehicle or catalyst for socio-political concerns. Approved for Global Awareness requirement.

AH 4560 - Perspectives on Art

3 Credits
An examination of selected literature in art history, criticism, and aesthetics not usually covered in standard course offerings.

AH 4810 - Art of the Italian Renaissance I

3 Credits
A study of major trends in the development of painting, sculpture, and architecture as they reflect the culture of Renaissance Italy from around 1300-1500. Prer., AH 2820 or equivalent.

AH 4820 - Art of the Italian Renaissance II

3 Credits
The late Renaissance and mannerism. The art of 16th-century Italy; special emphasis upon Michelangelo, Titian and Venice, both Florentine and Roman Mannerists, with some attention to Caravaggio. Prer., AH 2820 or equivalent.

AH 4830 - Northern Renaissance Art

3 Credits
History of painting in northern Europe from the late 14th through the 16th century with primary emphasis on the art of the Low Countries. Prer., A H 2820 or equivalent.

AH 4890 - Nineteenth Century Art I

3 Credits
History of the neoclassic and Romantic movements in European art with special reference to the Painting of David, Goya, Ingres, Gericault, and Delacroix, as well as consideration of architecture and sculpture from 1780 to 1850.

AH 4900 - Nineteenth Century Art II

3 Credits
A study of the developments of Realism, Impressionism, Post-Impressionism, and Symbolism in France and England from 1850 to 1905.

AH 4910 - Modern Art: 1900-1945

3 Credits
An in-depth, thematic study of the history of the avant-garde between 1890 and 1945 that emphasizes thee analysis of art of this period in relation to a variety of critical texts.

AH 4920 - Art since 1945

3 Credits
An in-depth, thematic study of Modernism and Post- Modernism in the visual arts that emphasizes the analysis of art and architecture of this period in relation to a variety of critical texts. Prer., AH 2000 level survey.

AH 4930 - Contemporary Art Theory

3 Credits
Considers theoretical writings about art and culture by major figures in the field of critical theory with an emphasis on making connections between critical theory and the practice of contemporary artists. Prer., AH 2870 or AH 3860 or by permission of the instructor.

AH 4980 - Senior Seminar in Art History

3 Credits
Seminar experience in art history methodology. Required of all graduating majors. Open to students with 15 hours of upper-division coursework in art history. Approved for Compass Curriculum requirements: Summit; Writing Intensive.

AH 9400 - Independent Study in Art History

1-4 Credits
Independent Study in Art History on the undergraduate level with any full-time professor by arrangement.

ANTH - Anthropology

ANTH 1020 - Introduction to Archaeology

4 Credits
Covers the basic concepts and methodology of archaeology using archaeological case studies from around the world. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

ANTH 1030 - Introduction to Human Origins

3 Credits
Evolution of humanity and its cultures from their beginnings through the early metal ages. Covers human evolution, race, prehistory, and the rise of early civilization. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SS3.

ANTH 1040 - Intro to Cultural Anthropology

3 Credits
Introduction to the major aspects of culture, such as social organization, law, religion, and language. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior; Sustainability. GT-SS3.

ANTH 1320 - Evolution/Creationism Conflict

3 Credits
Course will determine the realms in which conflict exists between evolution and creationism (as explanations for the origin and development of life on earth). Scientific evidence supporting the explanations will be stressed. Special emphasis will be placed on evidence for/against human evolution.

ANTH 2220 - Experimental Anthropology

3 Credits
Experimental anthropology features student-picked projects including, but not limited to: replication of lithic artifacts, processing of animal hides, ceramic reproductions, replications of indigenous foods, rock art reproductions, etc., usingauthentic methods. Requires weekend activities. Prer., ANTH 1020 or ANTH 1040.

ANTH 2410 - Cultural Diversity in the U.S.

3 Credits
Examines prejudice and discrimination in the United States from a variety of anthropological perspectives. It addresses such topics as racism, sexism, homophobia and religious intolerance.

ANTH 2800 - The Nature of Language

3 Credits
Introduction to the anthropological study of language. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS3. Prer., ANTH 1040 or sophomore standing.

ANTH 3000 - Quantitative Methods in Anthropology

3 Credits
A survey of quantitative methods emphasizing the nature of hypothesis testing. Attention is given to special problems of bioanthropological, archaeological, and ethnographic data. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., 9 completed hours in anthropology or consent of instructor.

ANTH 3010 - Sacred Spaces of the World

3 Credits
An examination of the world's religious structures; i.e. Jewish, Christian, Islamic, Hindu, Buddhist, Meso-American and Animist Traditions, along with an examination of religious traditions.

ANTH 3040 - Women Around the World

3 Credits
Provides a global, cross-cultural perspective on women, using an anthropological framework to examine women's status, issues, and general cultural experience in the context of gender systems of different types of societies. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Prer., ANTH 1040, WEST 2010, or permission of instructor. Meets with WEST 3040.

ANTH 3070 - Darwinism

3 Credits
A critical examination of Charles Darwin's Origin of Species and The Descent of Man and their contemporary critics, considered in historical perspective. Prer., Sophomore standing.

ANTH 3100 - Special Topics in Anthropology:

3 Credits
Examination of selected topics in anthropology in lecture or seminar format. Topics will change according to the interest of the instructor and students. Students may repeat the course for credit as long as the topic is different.

ANTH 3140 - Archaeology of the Bible

3 Credits
Examines archaeological findings to illustrate and clarify the cultural and historical context of the Bible, with emphasis on specific Bronze Age and Iron Age sites.

ANTH 3150 - Anthropology of Art and Expressive Culture

3 Credits
This course introduces students to the anthropological study of art, aesthetics and expressive culture by considering several cross-cultural examples. Students will examine how aesthetics express and inform about the cultures in which they are found. Prer., ANTH 1020, ANTH 1030, ANTH 1040, or AH 1000.

ANTH 3170 - Field Practicum in Native American Archaeology

6 Credits
A practicum course wherein students will work as part of a professional prehistoric archaeological project in a setting that is also conducive to learning. While working on a prehistoric site, they will gain experience in basic archaeological field techniques such as mapping, excavating, recording, and artifact storage. Prer., ANTH 1020 and consent of instructor.

ANTH 3180 - Archaeology and Public Policy

3 Credits
Explores the role of government and public opinion in the development and enforcement of cultural resource legislation. Students will have hands-on exposure to documenting and evaluating resource significance and will explore issues of cultural patrimony and tribal rights. Prer., ANTH 1020.

ANTH 3190 - Field Practicum in 19th/20th Century Archaeology

6 Credits
A practicum course wherein students will work as part of a professional archaeological project in a setting that is also conducive to learning. While working on a historic period site, they will gain experience in primary document analysis and basic archaeological field techniques. Prer., ANTH 1020 and consent of instructor.

ANTH 3210 - Lab Techniques in Archaeology

3 Credits
Provides hands-on experience cataloging and analyzing materials from archaeological sites. Topics will include analysis, computer applications, materials conservation, and artifact illustration, and also the methodological decision-making that affects how we describe, analyze, and interpret data. Prer., ANTH 1020 or consent of instructor.

ANTH 3220 - Archaeology of Native North America

3 Credits
The prehistory of North America, emphasizing

the peopling of the new world, earliest American cultures, and later regional developments. Prer., ANTH 1020 or consent of instructor.

ANTH 3230 - Archaeology of Complex Societies in the Americas

3 Credits
Prehistoric, protohistoric, and historic cultural analysis of the Aztecs, the Mayans, and the Incas. Includes discussion of their archaeological developments, cultural attainments, and influence on other peoples. Prer., ANTH 1020 or consent of instructor.

ANTH 3235 - Paleoindians of the Americas

3 Credits
This course examines the evidence for early human occupations in both North and South America, the controversies and arguments concerning the first inhabitants, and explores cultural and environmental aspects of early occupations in various areas. Prer., ANTH 1020.

ANTH 3240 - Paleolithic Archaeology

3 Credits
The cultural evidence for human development from the earliest stone tool assemblages of the Plio-Pleistocene to the Mesolithic and Archaic cultures of the old and new worlds. Prer., ANTH 1020 or consent of instructor.

ANTH 3250 - Native Peoples of the Southwest

3 Credits
The prehistory and ethnography of the Indian cultures of the Southwest. Approved for LAS Cultural Diversity requirement. Prer., ANTH 1020, ANTH 1040, WEST 2010. Meets with WEST 3250.

ANTH 3260 - Agricultural Origins and the Emergence of Urban Society

3 Credits
The evidence for the origins of agricultural economies and the emergence of complex social and political institutions in both the old and new worlds. Approved for LAS Social Science area requirement. Prer., ANTH 1020 or consent of instructor.

ANTH 3270 - Archaeology of Recent Past

3 Credits
History and practice of the sub-discipline of historical archaeology. Covers archaeological method and theory, some of which is unique to this subfield. Students will explore diverse perspectives brought to historical archaeology by its practitioners, and critically examine individual case studies. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., ANTH 1020 or consent of instructor.

ANTH 3280 - Archaeological Approaches to Gender and Sexuality

3 Credits
Course covers archaeological approaches to studying gender and sexuality in past societies. Students will discuss the theoretical and methodological implications of these archaeological approaches and analyze various case studies, spanning periods from the Paleolithic to the recent past. Prer., ANTH 1020. Meets with WEST 3270.

ANTH 3290 - Archaeology of Colorado

3 Credits
The ecological and geographical diversity of the State of Colorado has made it a rich source of archaeological research on the pre- and post-contact past. This course covers the ways that archaeologists have used material culture and landscape to study cultural change in the Centennial State. Prer., ANTH 1020.

ANTH 3310 - Human Reproduction: Dating, Mating, and Parenting

3 Credits
This course will examine various facets of human reproduction, including attraction, sex, biology, and parenting. The information in this course will be based on a cross-cultural, evolutionary understanding of human sexuality. Prer., ANTH 1030 or sufficient coursework in biology or health sciences.

ANTH 3320 - Primatology

3 Credits
Behavior, ecology, and evolution of nonhuman primates. Emphasis on field studies, and on evolutionary explanations of social groups, mating systems, and behavior toward kin. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., ANTH 1030 or consent of instructor.

ANTH 3330 - Hormones and Behavior

3 Credits
This course covers the topic of behavioral endocrinology. Students will learn about various hormones, the role of those hormones in humans and non-human animal models, and the role of hormones in the study of behavior. Prer., ANTH 1030 or sufficient coursework in Biology or Health Sciences.

ANTH 3340 - Human Evolution

3 Credits
A detailed examination of the fossil evidence for human evolution, emphasizing functional analysis of human structure and the process of natural selection. Approved for LAS Natural Science area requirement. Prer., ANTH 1030 or consent of instructor.

ANTH 3350 - Forensic Anthropology

4 Credits
Explores the role of forensic anthropologists in crime scene investigation and mass disaster recovery. Students will learn to analyze skeletal remains to determine time since death, evaluate trauma, and identify age, sex, and ancestry. Prer., ANTH 1030 or instructor permission.

ANTH 3370 - Human Biology and Ecology

3 Credits
The study of variation and adaptations of human populations in an ecological framework. Includes interactions between cultural and biological factors in health and in reproduction, and anthropological aspects of demography. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., ANTH 1030 or consent of instructor.

ANTH 3380 - Evolutionary Medicine and Health

3 Credits
Why do we get fevers? Are high cholesterol and arthritis an inevitable part of aging? And what's the deal with the "Paleo diet"? In this course, we will learn about how modern health issues are impacted by human's evolutionary history. We will look at data from biology, osteology, primatology, and cross-cultural studies to gain a deeper, holistic understanding of modern medicine and health. Topics will include diet, nutrition, chronic diseases, reproduction and contraception, and sleep

ANTH 3420 - North American Indians

3 Credits
A survey of the native cultures of America north of Mexico. Examines major institutions by culture area and type of social organization. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., ANTH 1040 or consent of instructor. Meets with WEST 3420.

ANTH 3430 - Anthropological Approaches to Globalization

3 Credits
Through specific case studies, seminar analyzes how cultural identities and societal changes both respond to and shape global agendas. Addresses innovative anthropological and ethnographic approaches to globalization studies, and considers why they form a critical component of contemporary anthropological research. Prer., Junior/Senior, ANTH 1040 or permission of instructor.

ANTH 3440 - Anthropology of Latin America

3 Credits
Provides in-depth anthropological introduction to themes of broad relevance throughout Latin America. Goals include strong grasp of Latin American geography, regional historical patterns and cultural responses, and principal factors influencing modern Latin American cultures and societies. Prer., Junior/Senior, ANTH 1040 or permission of instructor.

ANTH 3450 - Social Organization

3 Credits
Analysis of social organization among native peoples with an emphasis on kinship forms and functions. Prer., ANTH 1040.

ANTH 3480 - Psychological Anthropology

3 Credits
Surveys the field of psychological anthropology and examines cross-cultural studies of personality development, mental health issues, and forms of ethnotherapy or native healing methods. The course covers methods in the study of behavior and personality in a cross-cultural perspective. Prer., ANTH 1040 or PSY 1000 consent.

ANTH 3500 - Ethnographic Methods and Theory

3 Credits
Theoretical, case-oriented introduction to ethnographic research. Practical training provided in basic ethnographic research and analytical methods. Designed to engage students in grounded ethnographic research in the local setting. Research students design, conduct, analyze, and present as members of a team. Prer., ANTH 1040 and either ANTH 2800 or other cultural anthropology course.

ANTH 3600 - History & Practice of Archaeology

3 Credits
This course offered only in spring. A seminar designed for students who already have some archaeology coursework and are interested in the history and development of the discipline as well as more recent methodological and theoretical debates. Prer., ANTH 1020.

ANTH 3630 - Field Experience in Applied Anthropology

6 Credits
This intensive field course introduces students to the practice of anthropological research methods in an applied setting. Students work with community members to develop and implement locally appropriate and sustainable projects aimed at preserving local ecosystems while providing vital infrastructure. Open only to juniors/seniors. Prer., Application. Permission of instructor.

ANTH 3660 - Applied Community Studies

3 Credits
A service-learning, community-based research course in which students, professors, and community members work together to reach community-identified goals. Working in teams, students will learn to apply anthropology and human geography research methods in developing effective community outreach programs. Prer., two courses in anthropology, sociology, geography, or education, or permission of instructor. Meets with GES 3660.

ANTH 3810 - Language, Culture, and Society

3 Credits
An examination of the social and cultural functions of language, emphasizing the use of linguistic methods and theories in anthropology and sociology. Prer., Sophomore standing. ANTH 2800 or permission of instructor.

ANTH 3820 - Native American Languages and Cultures

3 Credits
Examines Native American languages focusing on their cultural value in traditional/historic and contemporary contexts. Students study comparative linguistic typology of Native American languages, endangerment and revitalization efforts, and explore relations among Native American languages, cultures, nations, and bilingual needs. Prer., ANTH 2800 or ANTH 3420 or WEST 3420 or WEST 2010. Meets with WEST 3820.

ANTH 3970 - History & Theory of Anthropology

3 Credits
This course is only offered in fall. History of the growth of anthropology from the earliest times, various schools of thought, outstanding contributors and their work, to the mid-20th century. Prer., ANTH 1040 or consent of instructor.

ANTH 4090 - Classics of Anthropological Literature

3 Credits
Analysis of classical literature in the history of anthropology. Prer., ANTH 3490 or consent of instructor.

ANTH 4200 - Adv Topics in Archaeology

1-3 Credits
Intensive study of selected topics in archaeology and prehistory. Prer., Vary depending on course topic. Meets with ANTH 5200.

ANTH 4205 - Wild Cognition

6 Credits
After appropriate academic and skills training, qualified students will spend several days in the wilderness using prehistoric techniques of hunting and gathering. At the same time they will be engaged in testing specific hypotheses concerning the cognitive challenges involved in these activities.

ANTH 4210 - Advanced Laboratory Techniques in Archaeology

3 Credits
This is a laboratory practicum analyzing archaeological site matrix from the UCCS field school (ANTH 3170 or 3190) taught the previous summer. The class will meet with ANTH 3210; the syllabus for ANTH 4210 will parallel that of ANTH 3210 but with additional specific readings. Prer., ANTH 1020, ANTH 3170.

ANTH 4300 - Advanced Topics in Physical Anthropology

3 Credits
Intensive study of selected issues in human evolution, human biology, and primate behavior and ecology. Different years deal with different topic areas. Prer., ANTH 1030 or consent of instructor.

ANTH 4310 - Cognitive Evolution

3 Credits
Examines the evolution of primate and hominid cognition. Content includes basic neuroanatomy, relevant evolutionary theory, and neuropsychology (brain damage patterns), but the emphasis will be placed on the primate comparative evidence, paleoneurology (fossil endocasts), and the archaeological record. Open to Juniors and Seniors only. Meets with ANTH 5310.

ANTH 4400 - Advanced Topics in Cultural Anthropology

3 Credits
Intensive study of selected topics in cultural anthropology. In different years deals with different topic areas. Prer., Vary depending on course topic. Meets with WEST 4400.

ANTH 4410 - Ecological Anthropology and Sustainable Systems

3 Credits
This course examines the relationship between culture and the natural environment in varied settings around the world, past and present. It focuses on the role of cultural anthropology in averting ecological disasters and creating methods of sustainable natural resource management. Prer., ANTH 1040.

ANTH 4650 - Evolutionary Neuropsychology

3 Credits
This course serves as an introduction to the evolution of the structures and the functions of the human brain. Prer., PSY 2110 or instructor consent. Meets with PSY 4650.

ANTH 4710 - Internship in Anthropology

1-6 Credits
A program of study and learning outside the classroom. Practical exposure to field of interest is intended to provide appropriate experience related to a student's career orientation. Students must have departmental permission. Anthropology majors only. Prerequisites vary depending on area of specialization.

ANTH 4800 - Advanced Topics in Anthropological Linguistics

3 Credits
Intensive study of selected topics in anthropological linguistics. In different years deals with different topic areas. Prer., Consent of instructor.

ANTH 4980 - Senior Sem in Anthropology

3 Credits
This course offered only in spring. A one semester special topics course designed to provide a synthesizing cap to the student's undergraduate program in anthropology. Topics vary by semester. Approved for Compass Curriculum requirement: Summit. Prer., ANTH 3970. Senior status.

ANTH 4990 - Honors Thesis

3 Credits
For honors in Anthropology. a one semester research project. The student will write a formal research paper drawing on primary sources and pertinent secondary material. The student will work under the direction of a full time member of the department and will have a second member as an additional reader. The student will prepare an oral presentation to the faculty to include a thesis defense and responses to general questions in the four subfields. Prer., Senior status and consent of department chair.

ANTH 5200 - AdvTopics in Archaeology

1-3 Credits
Intensive study of selected topics in archaeology and prehistory. Meets with ANTH 4200.

ANTH 5310 - Cognitive Evolution

3 Credits
Examines the evolution of primate and hominid cognition. Content includes basic neuroanatomy, evolutionary theory, and neuropsychology, but the emphasis will be placed on the primate comparative evidence, paleoneurology (fossil endocasts), and the archaeological record. Prer., Graduate students only. Meets with ANTH 4310.

ANTH 5800 - Advanced Topics in Anthropological Linguistics: Graduate Level

3 Credits
Intensive study of selected topics in anthropological linguistics (e.g., morphological and syntactic typology, comparative phonetics/phonology, linguistic field methods, narrative analysis); in different semesters one specific topic will be addressed. Graduate level only. Prer., ANTH 2800 or equivalent; Permission of instructor.

ANTH 7000 - Masters Thesis

1-6 Credits
Masters Thesis

ANTH 9400 - Independent Study in Anthropology

1-6 Credits
Hours and credits to be arranged. Consent of instructor is required.

ANTH 9500 - Independent Study in Anthropology

1-4 Credits
Prer., Consent of instructor.

ANTH 9990 - Candidate for Degree
0 Credits
Candidate for Degree

ARBC - Arabic

ARBC 1010 - Beginning Arabic I

5 Credits
This course begins a sequence dealing with the development of functional proficiency in listening, speaking, reading, and writing the Arabic language. The course is conducted in Arabic. Emphasis is on communication in the language.

ARBC 1020 - Beginning Arabic II

5 Credits
The second course begins a sequence dealing with the development of functional proficiency in listening, speaking, reading, and writing the Arabic language. The course is conducted in Arabic. Emphasis is on communication in the language. Prer., ARBC 1010 or equivalent.

ASL - American Sign Language

ASL 1010 - American Sign Language I

4 Credits
This is the first in a related series of courses that focus on the use and study of American Sign Language (ASL), the language that is widely used by Deaf Americans. This course includes basic ASL vocabulary, grammatical structures, and in-depth cultural awareness. Non-manual behavior, ASL structure, and fluency are included to challenge students' ability to increase expressive and receptive skills in ASL. Students are introduced to the cultural values, beliefs, and behavioral norms shared by those within the Deaf community.

ASL 1020 - American Sign Language II

4 Credits
This is the second in a related series of courses that focus on the use and study of American Sign Language (ASL), the language that is widely used by Deaf Americans. This course includes intermediate ASL vocabulary, grammatical structures, conversational behaviors, and in-depth cultural awareness. Non-manual behavior, ASL structure, and fluency are included to challenge students' ability to increase expressive and receptive skills in ASL. Students are introduced to the cultural values, beliefs, and behavioral norms shared by those within the Deaf community. This course is designed for students who have completed a minimum of ASL I. Prer., ASL 1010.

ASL 2110 - American Sign Language III

4 Credits
The third in a related series of courses that focus on the use and study of American Sign Language (ASL), the language that is widely used by Deaf Americans. This course continues to increase ASL vocabulary, grammatical structures, and in-depth cultural awareness. Non-manual behavior, ASL structure, and fluency are included to challenge students' ability to increase expressive and receptive skills in ASL. An intermediate course designed for students who have completed a minimum of ASL I and ASL II. Prer., ASL 1010, ASL1020.

ASL 2120 - American Sign Language IV

4 Credits
The fourth in a related series of courses that focus on the use and study of American Sign Language (ASL), the language that is widely used by Deaf Americans. This course provides the opportunity to develop and use stories and language activities in both receptive and expressive modes. Non-manual behavior, ASL structure, and fluency are included to challenge students' ability to increase expressive and receptive skills in ASL. Offers a more in-depth discussion of the principles of ASL. Presents further exposure to more sophisticated dialogue. Prer., ASL 1010, ASL1020, ASL 2110.

ASL 2130 - American Sign Language Fingerspelling and Numbers

3 Credits
This course will aid students in developing increased fluency in their expressive and receptive abilities at ASL fingerspelling, one of the most difficult ASL skills to master, and will also aid them in navigating the complex rules of ASL numbering. The course focuses on specific skills that underlie the fingerspelled word recognition process, and provides practice in correctly recognizing fingerspelled words and numbers in context. In addition to receptive skill development, students will hone their articulation and production of fingerspelling and numbering. Taught in ASL. Prer., ASL 2110 or requisite experience.

ASL 3110 - American Sign Language V

4 Credits
This is the fifth in a related series of courses that focus on the use and study of American Sign Language (ASL), the language that is widely used by Deaf Americans. This course provides the opportunity to develop and use stories and language activities in both receptive and expressive modes. Non-manual behavior, ASL structure, and fluency are included to challenge students' ability to increase expressive and receptive skills in ASL at an advanced level. It offers a more in-depth discussion of the principles of ASL and comparison of communication methodologies. Presents further exposure to more sophisticated dialogue. Prer., ASL 2120.

ASL 3190 - Introduction to American Sign Language Literature

3 Credits
Provides students with an opportunity to recognize the impact of Deaf Culture on emerging ASL literature. The course also covers non-fiction, poetry, and drama depicted in reading and videotapes related to everyday lives of deaf people. It develops insight and appreciation of deaf literature and its implications for deaf education. Original works will be studied, analyzed, and compared. An intermediate course for students who have completed a minimum of ASL I, II, and III. Prer., ASL 1010, ASL 1020, ASL 2110.

ASL 3490 - Internship in Applied American Sign Language

1-3 Credits
The Department of Languages and Cultures will offer to advanced language students the opportunity for supervised application of their knowledge in settings such as schools, social support agencies, etc. May be repeated up to three times for credit. Prer., Departmental permission.

ASL 3590 - Deaf Culture

3 Credits
Examines the culture of deaf people. The course will explore the customs, values, norms and heritage of the deaf community in America. Prer., ASL 1010 and ASL 1020. Meets with FCS 3590.

ASL 4000 - Contrastive Linguistic Analysis: ASL/English

3 Credits
Introduction to basic similarities and differences in the linguistic structures and uses of American Sign Language (ASL) and English. Examining categories from a universal perspective, contrastive linguistic analysis is accomplished by focusing on: phonological and morphological processes, syntactic properties, discourse types, word classes, and linguistic variation in Deaf and non-deaf communities in the United States. The student will also analyze both ASL and English language samples. Approved for LAS Cultural Diversity Requirement. Prer., Junior or Senior standing.

ASL 4500 - Contrastive Linguistic Analysis: ASL/English

3 Credits
An introduction to basic similarities and differences in the linguistic structures and uses of American Sign Language (ASL) and English. Examining categories from a universal perspective, contrastive linguistic analysis is accomplished by focusing on: phonological and morphological processes, syntactic properties, discourse types, word classes, and linguistic variation in Deaf and non-deaf communities in the United States. The student will also analyze both ASL and English language samples. Prer., Junior/Senior and Graduate only; ASL 2120 or equivalent.

ASL 5000 - Contrastive Linguistic Analysis: ASL/English

3 Credits
Introduction to basic similarities and differences in the linguistic structures and uses of

American Sign Language (ASL) and English. Examining categories from a universal perspective, contrastive linguistic analysis is accomplished by focusing on: phonological and morphological processes, syntactic properties, discourse types, word classes, and linguistic variation in Deaf and non-deaf communities in the United States. The student will also analyze both ASL and English language samples. Prer., Graduate students only.

ASL 5500 - Contrastive Linguistic Analysis: ASL/English

3 Credits
An introduction to basic similarities and differences in the linguistic structures and uses of American Sign Language (ASL) and English. Examining categories from a universal perspective, contrastive linguistic analysis is accomplished by focusing on: phonological and morphological processes, syntactic properties, discourse types, word classes, and linguistic variation in Deaf and non-deaf communities in the United States. The student will also analyze both ASL and English language samples. Prer., Junior/Senior and Graduate only; ASL 2120 or equivalent.

ASL 9300 - Independent Study in ASL

1-4 Credits
Independent work for advanced undergraduates only. By special arrangement with the faculty. Only for students presenting strong preparation in American Sign Language. May be repeated up to three times for credit. Prer., Consent of instructor.

ASL 9400 - Independent Study in ASL **1-3 Credits**
Independent work for advanced undergraduates only. By special arrangement with the faculty. Only for students presenting strong preparation in American Sign Language. May be repeated up to three times for credit. Prer., Consent of instructor.

BGSO - Business, Government & Society

BGSO 4000 - Business, Government & Society

3 Credits
An examination of interrelationships between business, society, and government. Explores the legal and ethical significance of transactions in the business decision-making processes. Approved for Compass Curriculum requirements: Sustainability; Navigate. Prer., MGMT 3000, QUAN 2020. Business students only.

BGSO 5500 - Business, Govt, & Society

3 Credits
This course examines the interdependence of business with societal, governmental, and economic environments. The role and balance of responsibilities between businesses and government, the nature of the free market system, current public policy issues, and external trends affecting business are explored. The course focuses on business skills to prepare responsible leaders in business and equips individuals with tested responses to the most common ethical challenges they will face in their career. Prer., Graduate business students only.

BGSO 5590 - Business, Govt, & Society

3 Credits
This course examines the interdependence of business with societal, governmental, and economic environments. The role and balance of responsibilities between business and government, the nature of the free market system, current public policy issues, and external trends affecting business are explored. The course focuses on business skills to prepare responsible leaders in business and equips individuals with tested responses to the most common ethical challenges they will face in their careers. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Graduate business students only.

BIBL - Bibliography

BIBL 1010 - Introduction to Library Research

3 Credits
Introduction to the use of library services and research materials. Emphasis on the individual research needs. Designed for the undergraduate student in any discipline.

BIOL - Biology

BIOL 1000 - Biology in the Modern World

3 Credits
Designed for the nonmajor. The introductory principles of biology stressing the relationships between man and the environment. Concepts include heredity, evolution, genetics, nutrition, physiology, and ecology. Satisfies the LAS natural science requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2. To be taken with BIOL 1060 to satisfy the LAS laboratory requirement. May not count as credit for the major. Fall, Spring. GT-SC1.

BIOL 1010 - Introduction to Human Biology

3 Credits
Introduction to scientific inquiry with special emphasis on the structure and function of cells, tissues, organs, and systems of the human biology.

BIOL 1050 - Personal Nutrition

3 Credits
Designed for the nonmajor. A course presenting basic information about factors influencing human nutritional requirements and food sources to meet them. Emphasis is on application of biological principles in the students' own diets and lives. The course will include how to evaluate one's own nutritional needs and the adequacy of personal diet. Satisfies the LAS Natural Science requirement. Spring. Summer. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Meets with HSCI 1060.

BIOL 1060 - Introductory Biology Laboratory

1 Credit
May be taken in conjunction with BIOL 1000 to satisfy the LAS science requirement and lab requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1.

BIOL 1300 - Gen Biology: Organismic Biology

3 Credits
The lecture component of an integrated lecture-laboratory course that presents the diversity of prokaryotic and eukaryotic organisms emphasizing structure, function, ecology, and evolution. Students must also register for the laboratory, BIOL 1310. Prer., High school biology and chemistry, or consent of instructor. GT-SC1.

BIOL 1310 - Gen Biology: Organismic Biology Laboratory

1 Credit
The laboratory component of an integrated lecture-laboratory course that presents the diversity of prokaryotic and eukaryotic organisms emphasizing structure, function, ecology, and evolution. Students must also register for

the lecture, BIOL 1300. Prer., High school biology and chemistry, or consent of instructor. GT-SC1.

BIOL 1350 - Gen Biology: Intro to the Cell

3 Credits
The lecture component of an integrated lecture-laboratory course that introduces concepts of the structure/function relationships among biological molecules, of cellular metabolism, and of genetics and molecular biology. Students must also register for the laboratory, BIOL 1360. Open to biology, chemistry, health sciences, and physics secondary education majors only. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), and BIOL 1300/1310 (formerly BIOL 1200), or consent of instructor. GT-SC1.

BIOL 1360 - Gen Biology: Intro to the Cell Lab

1 Credit
The laboratory component of an integrated lecture-laboratory course that introduces concepts of the structure/function relationships among biological molecules, of cellular metabolism, and of genetics and molecular biology. Students must also register for the lecture, BIOL 1350. Open to biology, chemistry, health sciences, and physics secondary education majors only. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), and BIOL 1300/1310 (formerly BIOL 1200), or consent of instructor. GT-SC1.

BIOL 2000 - Environmental Physiology

3 Credits
Introduction to physiological systems and mechanisms that allow humans to tolerate hot, cold, high altitude, micro-gravity, and deep-sea environments. Approved for LAS Natural Science area requirement. Fall. Prer., High school algebra.

BIOL 2010 - Human Anatomy and Physiology I

4 Credits
Part 1. Lecture and lab. A comprehensive study of the structure and function of the human body. Covers basic anatomical terminology, cells, tissues, and the following systems: integumentary, skeletal, muscle, and nervous. Fall. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., BIOL 1010 or BIOL 1300/1310 (formerly BIOL 1200); CHEM 1201 or CHEM 1401/1402 (formerly CHEM 1301); or admitted as a nursing prep student.

BIOL 2020 - Human Anatomy and Physiology II

4 Credits
Part 2. Lecture and lab. A comprehensive study of the sense organs, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems. Spring. Prer., BIOL 2010. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

BIOL 2030 - Microbiology

3 Credits
Presentation of the basic aspects of microbiology within a broad biological perspective. Subject matter will include microbiological concepts and methodology; a survey of the distinguishing properties of microorganisms based on structural-functional relationships: introduction to growth, metabolism, genetics, and ecology. Fall. Spring. MUST ALSO REGISTER FOR BIOL 2130 -- MICROBIOLOGY LAB. Prer., BIOL 1300/1310 (formerly BIOL 1200) or BIOL 2010; BIOL 1350/1360 (formerly BIOL 1210) or BIOL 2020; CHEM 1201 or CHEM 1401/1402 (formerly CHEM 1301); CHEM 1211 or CHEM 1411/1412 (formerly CHEM 1311).

BIOL 2050 - Nutrition for Health Sciences

3 Credits
An introductory level course for students preparing for health science careers. Emphasis will be on the variety of biological and environmental factors which influence nutritional needs and nutritional status. The role of nutrients in energy metabolism and physiology will also be covered. The course will also focus on the educational role of the health service provider. Each student will do a detailed analysis of his or her own diet. Fall. Interim. Prer., BIOL 1350/1360 (formerly BIOL 1210) or CHEM 1201 or CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030). Meets with HSCI 2070.

BIOL 2130 - Microbiology Laboratory

1 Credit
MUST BE TAKEN IN CONJUNCTION WITH BIOL 2030. A series of laboratory experiments designed to illustrate the basic concepts of microbiology with hands-on experience. Fall, Spring. Prer., BIOL 1300/1310 (formerly BIOL 1200) or BIOL 2010; BIOL 1350/1360 (formerly BIOL 1210) or BIOL 2020; CHEM 1201 or CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030); CHEM 1211 or CHEM 1411/1412 (formerly CHEM 1311 or CHEM 1060).

BIOL 2200 - Economic Botany

3 Credits
An organismic biology course exploring botanic products used by people. Emphasis is on plants that provide food, fiber, traditional medicines, herbal medicines, psychoactive drugs, poisons, and alcoholic beverages. Prer., BIOL 1200 or 115/116, or instructor permission.

BIOL 2500 - Plant Biology

3 Credits
An introduction to plant biology, including plant anatomy, development, diversity, physiology, reproduction, and genetic modifications. The importance of plants for food, fuel, and medicines will also be discussed. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 1210 or BIOL 1350/1360.

BIOL 3000 - Biostatistics

3 Credits
An introduction to the principles, concepts, and processes involved in scientific research, with emphasis in biology. This includes study design, basic data analyses, data interpretation and evaluation of the scientific literature. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., BIOL 3830 and MATH 1350 or consent of instructor. Meets with BIOL 5020.

BIOL 3020 - Cell Biology

3 Credits
Study of the structural and functional aspects of cellular life with emphasis on biological macromolecules, organelles, membranes, and cellular processes including respiration, photosynthesis, mitotic division and signal transduction. Prer., BIOL 3830.

BIOL 3100 - Microbiology: Bacteriology/Mycology

3 Credits
Bacteriology/Mycology is an upper division,

advanced study of the metabolism, physiology, and genetics of bacteria, yeast and fungus. Prer., BIOL 3020.

BIOL 3110 - Bacteriology/Mycology Laboratory

1 Credit
Laboratory course to accompany BIOL 3100. Prer., BIOL 3100 concurrently or preceding.

BIOL 3130 - Plants of Colorado

3 Credits
An introduction to the identification of plants and the study of vegetation of Colorado. Emphasis will be on the vascular flora. Lecture, lab and field trips. Summer.

BIOL 3140 - Microbiology: Virology

3 Credits
Virology is an upper division course covering the molecular genetics of viruses and their interactions with living organisms. Prer., BIOL 3020. Meets with BIOL 5140.

BIOL 3150 - Virology Laboratory

1 Credit
Research-oriented microbiology lab course. Prer., BIOL 3100 and BIOL 3140.

BIOL 3220 - Animal Physiology

3 Credits
An examination of how invertebrates and vertebrates have met the problems of survival through physiological adaptations. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 1210 or BIOL 1350/1360, and BIOL 3020.

BIOL 3230 - Plant Physiology

3 Credits
A comprehensive study of the physiology of photosynthetic organisms emphasizing molecular and cellular biology. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 1210 or BIOL 1350/1360; prior or concurrent enrollment in CHEM 3101.

BIOL 3240 - Perspectives on Biological Sustainability

4 Credits
Lecture/lab. Examines the conservation movement in American literature and current issues in global and local sustainability. Intended for non-majors. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Navigate; Sustainability; Writing Intensive.

BIOL 3300 - Exercise Physiology

3 Credits
A comprehensive, introductory course describing the effect of exercise on normal, physiological function. The course will describe the long-term benefits of exercise training, training adaptations and control mechanisms for these adaptations. Fall. Prer., BIOL 2010 and BIOL 2020.

BIOL 3411 - Conservation Ecology

4 Credits
Examines the conservation movement in American literature and current issues in global conservation ecology. Students will analyze the use of the scientific method in conservation. Emphasis is on hands-on interdisciplinary group work on a significant conservation project. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Navigate; Sustainability; Writing Intensive.

BIOL 3450 - Anatomy and Exercise Science: Fundamentals and Applications to Golf

4 Credits
Course integrates musculoskeletal anatomy and scientific principles of relevant sport science disciplines (biomechanics, physiology, nutrition, psychology and technology), in a lecture/lab setting, to provide PGM and Exercise Science students a comprehensive understanding of exercise science applications to golf. Meets with BIOL 5450. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., PGA Management students only; Biology students by instructor consent.

BIOL 3610 - Developmental Biology

3 Credits
Lecture. Examines cellular development with emphasis on vertebrate systems and experimental analysis. Prer., BIOL 3020.

BIOL 3620 - Histology

4 Credits
A comprehensive study of basic tissue type stressing the structural and functional interrelations of these tissues within organs. Treatment of cellular ultrastructure and development as it relates to tissues. Emphasis on vertebrates, including human beings. Prer., BIOL 1200 or BIOL 1300/1310 and BIOL 1210 or BIOL 1350/1360.

BIOL 3700 - General Ecology

3 Credits
A survey of environmental relationships of plants and animals. Topics include speciation, abiotic, and biotic limiting factors, population, community and ecosystem dynamics, and terrestrial and aquatic biomes. Spring (even years). Approved for Compass Curriculum requirement: Sustainability. Prer., BIOL 1200 or BIOL 1300/1310 and BIOL 1210 or BIOL 1350/1360.

BIOL 3750 - Conservation Biology

4 Credits
The major focus is the application of biological and ecological principles to preserve biodiversity. Ultimate sources and current worldwide losses of biological diversity are emphasized. Because conservation biology demands multidisciplinary approaches, historical, legal, economic, and ethical issues are also included. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Navigate; Sustainability; Writing Intensive. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 3700 recommended. Meets with GES 3750 and BIOL 5700.

BIOL 3830 - Genetics

3 Credits
Molecular basis of heredity, gene expression and mutation with emphasis on meiosis and Mendel's laws, linkage and recombination, chromosomal structure and aberrations, human genetics and quantitative approaches. Prer., BIOL 1300/1310 (formerly BIOL 1200), BIOL 1350/1360 (formerly BIOL 1210), CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), CHEM 1411/1412 (formerly CHEM 1311 or CHEM 1060).

BIOL 3840 - Genetics Laboratory

2 Credits
Laboratory course designed to introduce students to a variety of techniques used to study the concepts of genetics and molecular biology as described in lecture (BIOL 3830). Spring. Prer., BIOL 3830 or concurrent enrollment. Meets with BIOL 5440.

BIOL 3910 - Immunology

3 Credits
A basic study of immunity which treats the biochemical, physiological, and genetic aspects of the immune response, particularly in humans. Prer., BIOL 3020.

BIOL 4000 - Current Topics in Biology

1-4 Credits
Specialized topics and current issues are considered. Subject matter will change depending upon individual instructors. The topic in any given semester will be specified in the semester class schedule. May be repeated for credit more than one semester. Spring. Meets with BIOL 5000.

BIOL 4010 - Seminar in Biology

1 Credit
This capstone course centers around the review and discussion of pertinent research subjects. Students will present seminars based on current research in the field. Fall. Spring. Approved for Compass Curriculum requirement: Summit. Prer., BIOL 3020 and Senior standing.

BIOL 4030 - Health and Fitness

3 Credits
A review of exercise prescription and health evaluation techniques including a special section on nutrition. Prer., BIOL 2010 and BIOL 2020. Meets with BIOL 5030.

BIOL 4040 - Biology Lab Instructor Preparation Course

1 Credit
An instructor training course for undergraduate and graduate students who are interested in biology education. This course is required for teaching lab courses in the general biology lab series. Approved for LAS Oral Communication area requirement. Prer., BIOL 1300/1310 (formerly BIOL 1200), BIOL 1350/1360 (formerly BIOL 1210), CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), CHEM 1511/1513 (formerly CHEM 1311 or CHEM 1060). Meets with BIOL 5040.

BIOL 4050 - Technology Transfer and Biotechnology

3 Credits
The purpose of this course is to inform students about the process of Technology Transfer, from academic discovery and invention, to commercialization of a product. Prer., Consent of instructor. Meets with BIOL 5050.

BIOL 4150 - Field Botany

4 Credits
Topics include plant life cycles, systematics, life zones, and the use of field guides for identifying lichens, bryophytes, seedless vascular plants, vascular plants, gymnosperms and angiosperms in Colorado foothills, montane, subalpine and alpine life zones. Class meets once for lecture, then field study, sometimes including long hikes in difficult, mountainous terrain. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., BIOL 1200 or BIOL 1300/1310. Meets with BIOL 5150.

BIOL 4200 - Developmental Neurobiology

3 Credits
Lecture. This course focuses on recent advances in understanding the molecular genetic and cellular mechanisms underlying nervous system development. This course introduces students to contemporary approaches for the study of neural development, emphasizing genetic and molecular techniques. Prer., BIOL 3020 and BIOL 3830. Meets with BIOL 5200.

BIOL 4220 - Epidemiology

3 Credits
An introduction to the basic principles and methods for studying human disease and improving public health. Prer., Open to Juniors/Seniors only. Meets with BIOL 5220.

BIOL 4230 - Injury Prevention and Treatment

3 Credits
A survey of typical sports-related injuries, their causes, treatment, rehabilitation and prevention. Prer., BIOL 2010 and BIOL 2020, or consent of instructor. Meets with BIOL 5230 and HSCI 4610.

BIOL 4250 - Evolution

3 Credits
An introduction to evolutionary biology focusing on the principle of common descent and mechanisms responsible for generating the amazing diversity of life. Prer., BIOL 3830.

BIOL 4280 - Mammalogy

4 Credits
Lecture, lab, and field studies. Origin, evolution and adaptation, geographic distribution, ecology, and taxonomy of mammals. Fall. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 5280.

BIOL 4290 - Plant Communities of Colorado

4 Credits
An examination of plant assemblages in Colorado. Major plant communities will be examined in the context of environmental factors such as climate and landforms. Required field trip. Prer., GES 4260 or consent of instructor. Meets with BIOL 5290, GES 4290 and GES 5290.

BIOL 4300 - Advanced Nutrition

3 Credits
A comprehensive study of the energy-providing nutrients and how they are metabolized within the human body. This course will provide students with a firm basis of the biochemistry of proteins, fats and carbohydrates. Fall. Prer., BIOL 2050, BIOL 3020, CHEM 3300 or CHEM 3310, CHEM 3320. Meets with HSCI 4430.

BIOL 4310 - Advanced Immunology

3 Credits
An advanced course in immunology to follow a junior- senior-level introductory immunology course. Prer., BIOL 3910. Meets with BIOL 5310.

BIOL 4350 - Human Anatomy

4 Credits
Lecture and lab course using a systemic approach to human anatomy, focusing on musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, endocrine, and reproductive systems. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 1210 or BIOL 1350/1360. Meets with BIOL 5350 and HSCI 5350.

BIOL 4360 - Human Physiology

4 Credits
Lecture and laboratory. Integrative study of major organ systems, including nervous, endocrine, muscular, circulatory, respiratory, excretory, digestive, and reproductive functions of the human body. Prer., BIOL 2010, BIOL 2020, MATH 1350. Meets with BIOL 5360.

BIOL 4370 - Cardiovascular Physiology

4 Credits
This course will provide students with an advanced understanding of the cardiovascular

system. Students will learn principles of human cardiovascular regulation upon exposure to physiological stress and observe this regulation in lab activities. Participation in laboratory experiences is required. Prer.; BIOL 2020. Meets with BIOL 5370.

BIOL 4420 - Behavioral Ecology

3 Credits
The study of animal behavior from an evolutionary perspective. Examines the adaptive significance of behaviors involved in survival, foraging, habitat selection, reproduction, and social interactions in animals ranging from insects to humans. Prer., BIOL 3830. Meets with BIOL 5420.

BIOL 4430 - Animal Ecology

3 Credits
Problems concerned with the distribution of animals and their relations to each other and to their environment are considered. Local ecosystems are visited and sampled with special attention to sampling the animal communities. Contact instructor for call number. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 5430.

BIOL 4440 - Winter Ecology

2 Credits
An organismic/environmental course exploring the options available to organisms for surviving winter. Includes evolutionary, behavioral, and physiological adaptations involved in migration, hibernation, and temperate environments. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360.

BIOL 4445 - Ecology of Wildlife Diseases

3 Credits
Wildlife diseases are examined with respect to causes, mechanisms of disease, epidemiology, pathobiology, population significance, and health issues to humans and livestock. Topics include viral, bacterial, fungal, and parasitic agents of disease. Prer., BIOL 1300, BIOL 1310, BIOL 1350, and BIOL 1360. Meets with BIOL 5445.

BIOL 4550 - Biomechanics/Kinesiology

3 Credits
An introduction to the mechanics of human movement. Includes the application of kinematics and kinetics to the study of human movement. Biomechanics applications encompass orthopedic/clinical, sport and injury topics. Spring. Prer., PES 1010; BIOL 2010 or BIOL 4350. Meets with BIOL 5550.

BIOL 4600 - Biomechanics of Musculoskeletal Injury

3 Credits
A comprehensive survey of the biomechanics of musculoskeletal injury. The course explores the various bases of musculoskeletal injury to understand causal mechanisms, effects of injury on tissues, and how biomedical sciences contribute to injury management and prevention. Prer., BIOL 2010 (anatomy) or equivalent. Meets with BIOL 5600 and HSCI 5600.

BIOL 4610 - Methods in Evolutionary Genetics

3 Credits
This course is concerned with understanding evolutionary patterns and processes at the genetic level. Students learn principles behind methods used in the field and gain hands-on experience with techniques such as Polymerase Chain Reaction (PCR), gene sequencing, gene expression analysis, and bioinformatics. Prer., BIOL 3830. Meets with BIOL 5610.

BIOL 4670 - Applied Molecular Genetics

3 Credits
Learn how fundamental principles of chemistry and biology are applied to modern day biotechnologies. Examine the chemical and biological properties of nucleic acids, proteins and restriction enzymes and how they are used to clone genes, characterize proteins and discover drugs. Prer., BIOL 4840 or by consent of instructor. Meets with BIOL 5670.

BIOL 4710 - Externship in Biology

1-12 Credits
A program of study and learning outside the classroom. Practical exposure to field of interest is intended to provide appropriate experience to a student's career orientation. A variety of opportunities exists, and students may explore their own avenues as well. Some externships are in open competition. Students must have departmental permission and completed permission form to register. It is necessary for students interested in this program to plan their participation one semester before they plan to enroll. (Note: Externship is to be performed off campus at an institution performing biologically-oriented work, e.g., medical clinics and research laboratories.) Students must speak with faculty before registering for all externships. Fall, Spring.

BIOL 4770 - Human Metabolism

3 Credits
An advanced course in exercise physiology/biochemistry. Topics will involve extensive review of the scientific literature. These topics involve a review of current trends in sport science and are designed to give the student a practical application and interpretation of the sports sciences. Spring. Prer., BIOL 3300. Meets with BIOL 5770, HSCI 4060, and HSCI 5060.

BIOL 4790 - Laboratory Methods in Human Physiology

3 Credits
Lecture/Lab. Students will gain proficiency in clinical laboratory techniques for assessing human respiratory, cardiovascular, muscular, and metabolic functions. Requires additional laboratory time each week. Prer., BIOL 3300 or BIOL 4360 or consent of instructor. Meets with BIOL 5790.

BIOL 4800 - Advanced Exercise Physiology

3 Credits
Extension of Exercise Physiology and Laboratory Methods in Exercise Physiology with specific attention to current topics and advances in the field. Prer., Consent of instructor. Meets with BIOL 5800.

BIOL 4840 - Molecular Biology

3 Credits
Focuses on the biochemistry and techniques used to study prokaryotic and eukaryotic gene expression and regulation. Topics include transcription, translation, and transposition. Prer., BIOL 3020. Meets with BIOL 5840.

BIOL 4930 - Research Practicum in Biology

3 Credits
Laboratory course for advanced biology students and graduate students interested in research experience. Course includes experimental design, laboratory and/or field projects, and interpretation and presentation of data from individual projects. Meets with BIOL 6930.

BIOL 5000 - Current Topics in Biology

1-4 Credits
Specialized topics of current issues are considered, thus subject matter will change depending upon individual instructors and time of offering. The topic in any given semester will be specified in the semester schedule. May be repeated for credit. Prer., Graduate students only or consent of instructor. Meets with BIOL 4000.

BIOL 5010 - Seminar in Biology

1 Credit
Review and discussion of pertinent research subjects. Students will present their thesis proposals. Fall. Prer., Graduate standing.

BIOL 5020 - Biostatistics

3 Credits
An introduction to the principles, concepts, and processes involved in scientific research, with emphasis in biology. Includes study design, basic data analyses, data interpretation, and evaluation of the scientific literature. Requisites: BIOL 3830, MATH 1350 or consent of instructor. Meets with BIOL 3000.

BIOL 5030 - Health and Fitness

3 Credits
A review of exercise prescription and health evaluation techniques including a special section on nutrition. Prer., BIOL 2010 and BIOL 2020. Meets with BIOL 4030.

BIOL 5040 - Biology Lab Instructor Preparation Course

1 Credit
An instructor training course for undergraduate and graduate students who are interested in biology education. This course is required for teaching lab courses in the general biology lab series. Prer., BIOL 1300/1310 (formerly BIOL 1200), BIOL 1350/1360 (formerly BIOL 1210), CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), CHEM 1511/1513 (formerly CHEM 1311 or CHEM 1060). Meets with BIOL 4040.

BIOL 5050 - Technology Transfer and Biotechnology

3 Credits
The purpose of this course is to inform students about the process of Technology Transfer, from academic discovery and invention, to commercialization of a product. Prer., Bachelor's degree. Consent of instructor. Meets with BIOL 4050.

BIOL 5140 - Virology

3 Credits
Covers viral structure, genetics and pathogenesis. Prer., Permission of instructor. Meets with BIOL 3140.

BIOL 5150 - Field Botany

4 Credits
Topics include plant life cycles, systematics, life zones, and the use of field guides for identifying lichens, bryophytes, seedless vascular plants, vascular plants, gymnosperms and angiosperms in Colorado foothills, montane, subalpine and alpine life zones. Class meets once for lecture, then field study, sometimes including long hikes in difficult, mountainous terrain. Prer., BIOL 1200 or BIOL 1300/1310 and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 4150.

BIOL 5160 - Animal Physiology

3 Credits
An examination of how invertebrates and vertebrates have met the problems of survival through physiological adaptations. Prer., BIOL 1200 or BIOL 1300/1310, BIOL 1210 or BIOL 1350/1360, and BIOL 3020; Graduate students only. Meets with BIOL 3220.

BIOL 5200 - Developmental Neurobiology

3 Credits
Lecture. This course focuses on recent advances in understanding the molecular genetic and cellular mechanisms underlying nervous system development. This course introduces students to contemporary approaches for the study of neural development, emphasizing genetic and molecular techniques. Prer., BIOL 3020 and BIOL 3830. Meets with BIOL 4200.

BIOL 5220 - Epidemiology

3 Credits
An introduction to the basic principles and methods for studying human disease and improving public health. A basic statistics course is recommended. Meets with BIOL 4220.

BIOL 5230 - Injury Prevention and Treatment

3 Credits
A survey of typical sports-related injuries, their causes, treatment, rehabilitation and prevention. Prer., BIOL 2010 and BIOL 2020 or consent of instructor. Meets with BIOL 4230 and HSCI 4610.

BIOL 5280 - Mammalogy

4 Credits
Lecture, lab, and field studies. Origin, evolution and adaptation, geographic distribution, ecology, and taxonomy of mammals. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 4280.

BIOL 5290 - Plant Communities of Colorado

4 Credits
An examination of plant assemblages in Colorado. Major plant communities will be examined in the context of environmental factors such as climate and landforms. Required field trip. Prer., GES 4260 or consent of instructor. Meets with BIOL 4290, GES 4290, and GES 5290.

BIOL 5310 - Advanced Immunology

3 Credits
An advanced course in Immunology to follow a junior- senior level introductory Immunology course. Prer., BIOL 3910. Meets with BIOL 4310.

BIOL 5350 - Human Anatomy

4 Credits
Lecture and lab course using a systemic approach to human anatomy, focusing on musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, endocrine, and reproductive systems. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 4350 and HSCI 5350.

BIOL 5360 - Human Physiology

4 Credits
Lecture and laboratory. Integrative study of major organ systems, including nervous, endocrine, muscular, circulatory, respiratory, excretory, digestive, and reproductive functions of the human body. Prer., BIOL 2010, BIOL 2020, BIOL 3020, and MATH 1350. Meets with BIOL 4360.

BIOL 5370 - Cardiovascular Physiology

4 Credits
This course will provide students with an advanced understanding of the cardiovascular

system. Students will learn principles of human cardiovascular regulation upon exposure to physiological stress and observe this regulation in lab activities. Participation in laboratory experiences is required. Prer.; BIOL 2020. Meets with BIOL 4370.

BIOL 5420 - Behavioral Ecology

3 Credits
The study of animal behavior from an evolutionary perspective. Examines the adaptive significance of behaviors involved in survival, foraging, habitat selection, reproduction, and social interactions in animals ranging from insects to humans. Prer., BIOL 3830. Meets with BIOL 4420.

BIOL 5430 - Animal Ecology

3 Credits
Problems concerned with the distribution of animals and their relations to each other and to their environment are considered. Local ecosystems are visited and sampled with special attention to sampling the animal communities. Contact instructor for call number. Prer., BIOL 1200 or BIOL 1300/1310, and BIOL 1210 or BIOL 1350/1360. Meets with BIOL 4430.

BIOL 5440 - Genetics Laboratory

2 Credits
Laboratory course designed to introduce students to a variety of techniques used to study the concepts of genetics and molecular biology as described in lecture (BIOL 3830). Spring. Prer., BIOL 3830 or concurrent enrollment. Meets with BIOL 3840.

BIOL 5445 - Ecology of Wildlife Diseases

3 Credits
Wildlife diseases are examined with respect to causes, mechanisms of disease, epidemiology, pathobiology, population significance, and health issues to humans and livestock. Topics include viral, bacterial, fungal, and parasitic agents of disease. Prer., BIOL 1300, BIOL 1310, BIOL 1350, and BIOL 1360. Meets with BIOL 4445.

BIOL 5450 - Anatomy and Exercise Science: Fundamentals and Applications to Golf

4 Credits
Course integrates musculoskeletal anatomy and scientific principles of relevant sport science disciplines (biomechanics, physiology, nutrition, psychology and technology), in a lecture/lab setting, to provide Professional Golf Management and Exercise Science students a comprehensive understanding of exercise science applications to golf. Meets with BIOL 3450.

BIOL 5550 - Biomechanics/Kinesiology

3 Credits
An introduction to the mechanics of human movement. Includes the application of kinematics, kinetics, hydrodynamics, kinesiology and analytical techniques to human movement. Periodic trips to the International Center for Aquatic Research for analytical methods. Spring. Prer., PES 1010; BIOL 2010 or BIOL 4350. Meets with BIOL 4550.

BIOL 5600 - Biomechanics of Musculoskeletal Injury

3 Credits
A comprehensive survey of the biomechanics of musculoskeletal injury. The course explores the various bases of musculoskeletal injury to understand causal mechanisms, effects of injury on tissues, and how biomedical sciences contribute to injury management and prevention. Prer., BIOL 2010 or BIOL 4350 or BIOL 5350. Meets with BIOL 4600 and HSCI 5600.

BIOL 5610 - Methods in Evolutionary Genetics

3 Credits
This course is concerned with understanding evolutionary patterns and processes at the genetic level. Students learn principles behind methods used in the field and gain hands-on experience with techniques such as Polymerase Chain Reaction (PCR), gene sequencing, gene expression analysis, and bioinformatics. Prer., BIOL 3830. Meets with BIOL 4610.

BIOL 5620 - Histology

4 Credits
A comprehensive study of basic tissue type stressing the structural and functional interrelations of these tissues within organs. Treatment of cellular ultrastructure and development as it relates to tissues. Emphasis on vertebrates, including human beings. Meets with BIOL 3620. Prer., Graduate students only.

BIOL 5670 - Applied Molecular Genetics

3 Credits
Learn how fundamental principles of chemistry and biology are applied to modern day biotechnologies. Examine the chemical and biological properties of nucleic acids, proteins and restriction enzymes and how they are used to clone genes, characterize proteins and discover drugs. Prer., BIOL 4840. Meets with BIOL 4670.

BIOL 5700 - Conservation Biology

4 Credits
The major focus is the application of biological and ecological principles to preserve biodiversity. Ultimate sources and current worldwide losses of biological diversity are emphasized. Because conservation biology demands multidisciplinary approaches, historical, legal, economic, and ethical issues are also included. Prer., BIOL 1150, BIOL 3700 recommended. Meets with GES 3750 and BIOL 3750.

BIOL 5710 - Externship in Biology

1-12 Credits
A program of study and learning outside the classroom. Practical exposure to field of interest is intended to provide appropriate experience to a student's career orientation. A variety of opportunities exists, and students may explore their own avenues as well. Some externships are in open competition. Students must have departmental permission and completed permission form to register. It is strongly suggested that students interested in this program plan their participation one semester before they plan to enroll. (Note: Externship is to be performed off campus at an institution performing biologically-oriented work, e.g., medical clinics and research laboratories.) Fall, Spring.

BIOL 5750 - Biology Journal Interpretation and Research Seminar

1-2 Credits
Involves the preparation and delivery of seminars by students and faculty on current research articles in the recent published literature. Topics include biochemistry, cell biology, ecology, genetics, physiology and molecular biology.

BIOL 5770 - Human Metabolism

3 Credits
An advanced course in exercise physiology/biochemistry. Topics will involve extensive review of the scientific literature. These topics involve a review of current trends in sports science and are designed to give the student a practical application and interpretation of the

sports sciences. Spring. Meets with BIOL 4770, HSCI 4060, and HSCI 5060.

BIOL 5790 - Laboratory Methods in Human Physiology

3 Credits
Lecture/Lab. Students will gain proficiency in clinical laboratory techniques for assessing human respiratory, cardiovascular, muscular, and metabolic functions. Requires additional laboratory time each week. Prer., BIOL 3300 or BIOL 4360 or consent of instructor. Meets with BIOL 4790.

BIOL 5800 - Advanced Exercise Physiology

3 Credits
Extension of Exercise Physiology and Laboratory Methods in Exercise Physiology with specific attention to current topics and advances in the field. Prer., Consent of instructor. Meets with BIOL 4800.

BIOL 5840 - Molecular Biology

3 Credits
Focuses on the biochemistry and techniques used to study prokaryotic and eukaryotic gene expression and regulation. Topics include transcription, translation, and transposition. Prer., BIOL 3020. Meets with BIOL 4840.

BIOL 5900 - Pathobiology

4 Credits
Designed primarily for the biology major and pre-health profession students. The course will cover mechanisms of human disease from cellular through organ and systemic pathologies. Major and pertinent health problems will be discussed. Lab materials are primarily from autopsy materials. Spring (odd years). Prer., BIOL 1100, BIOL 1150, BIOL 3020. Open to junior, senior or graduate students. Meets with BIOL 4900.

BIOL 6050 - Biology Master's Capstone Project

3 Credits
For graduate students enrolled in the project option of the Master of Sciences program in Biology. Students will work independently with their advisor to develop a research-based capstone project and write a conference-quality research paper. Prer., BIOL 5010; enrollment in the MSc program.

BIOL 6360 - Advanced Biomechanics

2 Credits
An advanced study of biomechanics. Includes methods of smoothing raw data, joint force and torque calculations, three-dimensional theory and kinematics and kinetics in three dimensions. Prer., Consent of instructor.

BIOL 7000 - Masters Thesis

1-6 Credits
Masters Thesis

BIOL 9400 - Independent Study in Biology

1-3 Credits
Advanced students (usually seniors) are encouraged to pursue independent research in some specific area or problem where extensive reference to biological literature on that subject is available. Also encouraged is the design and execution of original research, either in the laboratory or field, that bears on the problem being considered. Prior to being admitted to this course, the student must submit an acceptable written proposal of the area or problem to be studied to the faculty member (selected by the student) who supervises the effort. Students must have consent of instructor and completed permission forms to register. Fall, Spring, Summer.

BIOL 9490 - Senior Honors Thesis

3 Credits
For advanced students who wish to pursue independent research for honors standing in biology. Description follows that for Independent Study in Biology (BIOL 9400). The course involves four phases: 1) A proposal must be submitted including a statement of the research goal, materials and methods, review of pertinent literature, and anticipated results. The proposal will be reviewed for acceptability. 2) Research must be carried out. 3) The thesis as a write-up of research should be in the form of a scholarly publication and will be reviewed for acceptability. 4) A seminar on the research must be presented to faculty and students in biology. It is strongly suggested that students initiate their work at the start of the last semester of their junior year. Fall, Spring.

BIOL 9500 - Independent Study in Biology: Graduate

1-3 Credits
Advanced students at the graduate level are encouraged to pursue independent research in some specific area or problem where extensive reference to biological literature on that subject is available. Also encouraged is the design and execution of original research, either in the laboratory or field, that bears on the problem being considered. Prior to being admitted to this course, the student must submit an acceptable written proposal of the area or problem to be studied to the faculty member (selected by the student) who supervises the effort. Students must have consent of instructor and completed permission forms to register. Fall, Spring, Summer.

BIOL 9590 - Independent Study Senior Thesis

1-3 Credits
Independent Study Senior Thesis

BIOL 9990 - Candidate for Degree
0 Credits
Candidate for Degree

BLAW - Business Law

BLAW 2000 - Business Law

3 Credits
The legal significance of business transactions as they are part of the decision making process in business. Coverage of text and statues includes law and its enforcement and integration of the Uniform Commercial Code with the law of contracts, bailment, warehouse men and carriers, documents of title, sales of goods, and commercial paper. Recommended for accounting majors who will be sitting for the CPA exam. Prer., Sophomore standing.

BLAW 2010 - Business and Intellectual Property Law

3 Credits
Examines the legal significance of ideas, innovations, and start-up organizations. A focus on the issues of intellectual property, including patents, copyrights, and brand protection. Coverage of essential contracts and agents. Prer., Sophomore standing.

BUAD - Business Administration

BUAD 1000 - Introduction to Business

3 Credits
Familiarizes students with the structure, operations, management, and socioeconomic aspects of business and non business entities. Course builds on the college themes of entrepreneurship, technology, team building, and international competitiveness to establish a

foundation for integrating information encountered in more advanced business courses. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

BUAD 1010 - Building a Successful Future in Business

1 Credit
Learn the keys to success as a business student and in your future business career. Hear directly from employers, alumni, students, faculty, and advisors about potential careers, majors, and expectations on the job and in the classroom. Course will include presentations, discussions, exercises, and assignments designed to help you learn and practice skills that will set you on the path to success. This course is designed for new freshmen students.

BUAD 2950 - Topics in Business

1-3 Credits
Experimental courses offered irregularly at the Sophomore level for the purpose of presenting new subject matter in a particular business field. Course prerequisites will vary depending upon topics covered. Prer., Sophomore standing.

BUAD 3000 - Integrated Skills for Management

3 Credits
Required for the core business courses. Students focus on 3 skill areas: refine communication for management (interpersonal, writing, and presentation); learn principles and practice of teamwork in a lab setting; learn project management in completing two complex projects focusing on outside groups and an ethics study. Students may take this course as a second-semester sophomore. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 2080, ENGL 2090, or INOV 2100. Business students only; completion of 45 hours.

BUAD 3010 - Career Strengths: Assessment and Development

1 Credit
Gives students an in-depth understanding of their interests, skills, and values and how these match to particular jobs and professions. Through research and analysis the students will gain a clear, detailed picture of what they want to do and what they have to offer an employer. Pass/Fail only. Prer., Junior or senior standing or COB Undergraduate Director permission.

BUAD 3020 - Career Skills: Resume Writing and Interviewing

1 Credit
Instructs and gives students hands-on experience on how to: (a) write cover letters and resumes, (b) practice effective interviewing techniques, and (c)develop effective job hunting skills. Pass/Fail only. Prer., Junior standing.

BUAD 3030 - Career Success: Image & Impact

1 Credit
Helps students converse, interact, and dress in a professional manner for job interviews, telephone calls, written correspondence, and professional work settings. Course will cover working in a diverse, cross-cultural environment, making effective first impressions, and appropriately communicating in a variety of speaking and writing situations. Pass/fail only. Prer., Junior standing.

BUAD 3950 - Topics in Business – Undergraduate

1-3 Credits
Experimental courses offered irregularly at the undergraduate level for the purpose of presenting new subject matter in a particular business field. Prer., Junior or Senior standing or COB Undergraduate Director permission.

BUAD 4000 - Business, Government, & Society

3 Credits
An examination of interrelationships between business, society, and government. Explores the legal and ethical significance of transactions in the business decision-making processes. Approved for Compass Curriculum requirements: Sustainability; Navigate. Prer., BUAD 3000, QUAN 2020. Business students only, 75 hours completed.

BUAD 4500 - Cases and Concepts in Business Policy

3 Credits
Takes a general manager's perspective on the administration of the corporation. Topics include the role and responsibility of general management, analysis of threats and opportunities in the competitive environment, strategies for building and sustaining competitive advantage, strategy implementation and management, and strategic management in the international environment. Topics covered through comprehensive case analysis. Approved for Compass Curriculum requirement: Summit. Prer., INFS 3000, MKTG 3000, FNCE 3050, MGMT 3300, OPTM 3000, ENGL 2080 or ENGL 2090. Business seniors only.

BUAD 4700 - Emerging Businesses and Entrepreneurship

3 Credits
How to plan, organize and operate a new independent business. Case studies of local small businesses. Prer., Senior standing.

BUAD 4950 - Topics in Business – Undergraduate

1-3 Credits
Experimental courses offered irregularly at the undergraduate level for the purpose of presenting new subject matter in a particular business field. Second semester junior or senior standing required. Course prerequisites will vary depending upon topics covered. Prer., Business Students Only and Junior Standing.

BUAD 4960 - Internship in General Business

1-3 Credits
Undergraduate internship for business students. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/Senior business students only.

BUAD 5500 - Fundamentals of Economics

3 Credits
Students learn to apply fundamental economic principles to solve business problems and make sound decisions. Course coverage includes the basis of capitalism, exchange and comparative advantage, demand, supply, elasticity, externalities, long-run economic growth, unemployment, inflation, the monetary system, and fiscal policy. Prer., Graduate business students only.

BUAD 5590 - Fundamentals of Economics

3 Credits
Students learn to apply fundamental economic principles to solve business problems and make sound decisions. Course coverage includes the basis of capitalism, exchange and comparative advantage, demand, supply, elasticity, externalities, long-run economic growth, unemployment, inflation, the monetary system, and fiscal policy. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Graduate business students only.

BUAD 6490 - Transforming Technology Organizations and Employees

3 Credits
Addresses three major issues facing technology organizations today: 1) how to design technology-based organizations of the future, 2) what methods to use for motivating technical people, and 3) how to initiate change that implements innovative design principles and management practices. Academic theory is linked to practical examples of best practices in global technology organizations and work forces. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

BUAD 6610 - Managing Innovation for Strategic Advantage

3 Credits
This course provides managers with the knowledge necessary to use innovation to advance an organization's strategic goals. The course is divided into three segments: (1) the industry dynamics of technological innovation, (2) developing an innovation strategy, and (3) implementing an innovation strategy. (Online equivalent: BUAD 6690). Graduate business students only.

BUAD 6690 - Managing Innovation for Strategic Advantage

3 Credits
This course provides managers with the knowledge necessary to use innovation to advance an organization's strategic goals. The course is divided into three segments: (1) the industry dynamics of technological innovation, (2) developing an innovation strategy, and (3) implementing an innovation strategy. Online graduate course. Tuition schedule differs from on-campus courses. (On-campus equivalent: BUAD 6610). Graduate business students only.

BUAD 6700 - Service Management

3 Credits
Effective service management requires a multidisciplinary approach involving marketing, management, human resource management, and information and operations management. Provides a foundation in these areas as they pertain to service management. Content for each area will include a conceptual overview of its importance to service quality, specific tools representative of the area, and exercises to demonstrate practical application. The focus is on the integrative requirements of service quality. Graduate business students only.

BUAD 6710 - Transforming Technology Organizations and Employees

3 Credits
Addresses three major issues facing technology organizations today: 1) how to design technology-based organizations of the future, 2) what methods to use for motivating technical people, and 3) how to initiate change that implements innovative design principles and management practices. Academic theory is linked to practical examples of best practices in global technology organizations and work forces. Graduate students only.

BUAD 6790 - Service Management

3 Credits
Effective service management requires a multidisciplinary approach involving marketing, management, human resource management, and information and operations management. Provides a foundation in these areas as they pertain to service management. Content for each area will include a conceptual overview of its importance to service quality, specific tools representative of the area, and exercises to demonstrate practical application. The focus is on the integrative requirements of service quality. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

BUAD 6800 - Entrepreneurship and New Ventures

3 Credits
Identifies unique features of new ventures (including start-up companies or internal ventures of established firms), high uncertainty, a newly formed management team, and a shortage of resources. Covers business plan development, recruiting the start-up team, legal and financial issues, start-up operations, managing growth, forming alliances, and exit strategies. Students, working in teams, will develop a business plan for a new venture. Graduate business students only.

BUAD 6890 - Entrepreneurship and New Ventures

3 Credits
Identifies unique features of new ventures (including start-up companies or internal ventures of established firms), high uncertainty, a newly formed management team, and a shortage of resources. Covers business plan development, recruiting the start-up team, legal and financial issues, start-up operations, managing growth, forming alliances, and exit strategies. Students, working in teams, will develop a business plan for a new venture. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Admitted MBA students only. Graduate business students only.

BUAD 6950 - Topics in Business - Graduate

1-3 Credits
Experimental course offered at the graduate level for the purpose of presenting new subject matter in a particular business field. Graduate business students only.

BUAD 6960 - Internship in General Business

1-3 Credits
Graduate internship in business. Open only to MBA degree students. Prer., Instructor and Dean approval.

BUAD 9400 - Independent Study in Business Administration - Undergraduate

1-3 Credits
Independent study at the undergraduate level with the prior consent of the instructor under whose direction the study is undertaken and the dean.

BUAD 9410 - Supervised Undergraduate Research

3 Credits
To qualify for this course, students must have achieved junior or senior standing and must identify a faculty member willing to work with them in a supervisory role. Registration is by instructor permission only. Students may register for this course in order to work closely with a faculty member on the literature review, study design, data collection or similar work, which may lead to the creation of new scholarly or creative works. Ideally, this course would provide students with an opportunity to prepare their research project for submission as a senior thesis in their senior year. Prer., Department consent.

BUAD 9420 - Senior Honors Thesis Research

3 Credits
A thesis is required for Departmental Honors Distinction in Research designation. To qualify, students normally have completed 90 semester credits of coursework (exceptions may be made), have achieved senior standing, and have at least a 3.4 GPA at the time they enroll. Registration for this course requires special permissions and approvals. Please see the

Honors Thesis Application if you are considering completing a senior honors thesis project. Ideally, students should prepare for this work well in advance of their senior year. Prer., Department consent.

BUAD 9500 - Independent Study in Business Administration - Graduate

1-3 Credits
Independent study at the graduate level with prior consent of the instructor under whose direction the study is undertaken and the dean. Prer., Consent of instructor and dean.

CHEM - Chemistry

CHEM 1001 - Preparatory Chemistry

4 Credits
Preparatory course for students who have not taken high school chemistry. Prepares students for the CHEM 1401-1411/1511 general chemistry sequence. Credit is granted only if no other college chemistry credits have been earned. Does not count toward the LAS Natural Science area requirement. Prer., One year high school algebra or concurrent enrollment in MATH 1040.

CHEM 1101 - Chemistry in the Modern World

3 Credits
A brief introduction to chemical principles and study of their application to biochemical materials and processes, consumer chemistry, energy problems, air and water pollution and toxic chemicals. This course may be taken with or without the lab course CHEM 1102. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Explore-Physical and Natural World; Sustainability. GT-SC2.

CHEM 1102 - Chemistry in the Modern World Laboratory

1 Credit
Lab section to accompany CHEM 1101. Experiments have been chosen that illustrate the principles discussed in the lecture. Approved for LAS Natural Science laboratory requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1. Coreq., CHEM 1101.

CHEM 1111 - Environmental Science

3 Credits
Introduction to atomic molecular structure and to biological structure and function. Environmental contaminants in air and their reactions, water quality and its analysis, wastewater treatment, the ecology of natural systems and genetic adaptation. The course deals with worldwide environmental issues in a scientific context. This course may be taken with or without the lab course CHEM 1112. Approved for the LAS Natural Science area and Global Awareness requirements. GT-SC2.

CHEM 1112 - Environmental Science Laboratory

1 Credit
Laboratory and field trips designed to complement BIOL 1510 and CHEM 1111. Approved for the LAS Natural Science laboratory requirement. GT-SC1. Coreq., CHEM 1111.

CHEM 1121 - CSI: Forensic Chemistry

3 Credits
Introduction to forensic science and crime scene investigation using scientific application. Topics include glass and soil samples, hair, fibers, paint, fingerprints, DNA evidence, etc. This course may be taken with or without the lab course CHEM 1122. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2.

CHEM 1122 - CSI: Forensic Chemistry Laboratory

1 Credit
Introduction to a scientific laboratory with an emphasis on evidence handling and processing. Polymer identification, ink processing and identification, fiber, hair, arson, fingerprints and bloodstain processing, etc. GT-SC1. Approved for LAS Natural Science laboratory requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Coreq., CHEM 1121.

CHEM 1201 - Introduction to Chemistry

4 Credits
This is a first-semester course in chemistry with an emphasis on principles and practical applications. The course covers measurement, matter, atoms, bonding, energy, phases of matter, acid-base and redox reactions, solutions, equilibria, electrolytes, inorganic and nuclear reactions. Students who have not taken algebra in high school or college should take an algebra course before taking CHEM 1201. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Explore-Physical and Natural World; Sustainability. GT-SC1. Prer., One year of high school algebra.

CHEM 1211 - Introduction to Organic and Biochemistry

4 Credits
This is the second part of a one year course and should be taken after completion of CHEM 1201. The course includes a survey of organic functional groups and biochemical reactions. A large emphasis is placed on structure and function of organic and biomolecules. Students who are required to take CHEM 1401-1411/1511 should not take CHEM 1211. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Explore-Physical and Natural World; Sustainability. GT-SC1. Prer., CHEM 1201 (formerly CHEM 1010) or CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030) with a grade of ?C? or higher.

CHEM 1221 - Introduction to General, Organic, and Biochemistry

5 Credits
An accelerated one-semester course for nursing majors who are classified as Nursing Prep. Topics to be covered include measurement, matter, atoms, bonding, energy, phases of matter, acids and bases, reactions, solutions, equilibria and nuclear chemistry. The course also includes a survey of organic functional groups and biochemical reactions. Emphasis is placed on the structure and function of organic compounds and biomolecules. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., High school algebra and chemistry, and consent of instructor.

CHEM 1401 - General Chemistry I

4 Credits
A first college-level chemistry course for students with adequate high school chemistry and math. Emphasis on the structure and composition of matter: elements and compounds, atoms and molecules, and states of matter including solutions. Students having marginal mathematics backgrounds are advised to solidify their mathematics proficiencies or take CHEM 1001 Preparatory Chemistry before taking this course. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1. Prer., one year of high school chemistry and two years of high school math. Coreq., CHEM 1402.

CHEM 1402 - General Chemistry Laboratory I

1 Credit
Lab section to accompany CHEM 1401. An introduction to qualitative laboratory techniques, including spectroscopy, titrations, calorimetry, and chromatography. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1. Coreq., CHEM 1401, or prer., CHEM 1401 with a grade of "C" or higher.

CHEM 1411 - General Chemistry II

4 Credits
This is the second course of the General Chemistry sequence. Emphasis is on acid-base and solution chemistry, equilibria, kinetics, redox chemistry, transition metal chemistry, nuclear chemistry, and organic chemistry. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1. Prer., CHEM 1401 and CHEM 1402 (formerly CHEM 1301 or CHEM 1030) with grades of "C" or higher. Coreq., CHEM 1412.

CHEM 1412 - General Chemistry Laboratory II

1 Credit
Lab section to accompany CHEM 1411. Further studies in qualitative and quantitative laboratory techniques, including spectroscopy, titrations, electrochemistry, and organic synthesis. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1. Coreq., CHEM 1411, or prer., CHEM 1411 with a grade of "C" or higher.

CHEM 1511 - General Chemistry for Majors II

4 Credits
This is the second course of the General Chemistry sequence. It is designed for Chemistry and Biochemistry majors. Emphasis is on acid-base and solution chemistry, equilibria, kinetics, redox chemistry, transition metal chemistry, nuclear chemistry, and organic chemistry. Students will prepare written projects and give oral presentations in addition to the standard CHEM 1411 coursework. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Explore-Physical and Natural World; Writing Intensive. GT-SC1. Prer., CHEM 1401 and CHEM 1402 (formerly CHEM 1301 or CHEM 1030) with grades of "B" or higher; coreq., CHEM 1513.

CHEM 1513 - General Chemistry Laboratory for Majors II

1 Credit
Lab section to accompany CHEM 1511. Further studies in qualitative, quantitative, and synthetic laboratory techniques, including spectroscopy, titrations, calorimetry, and chromatography. Students will perform more advanced laboratory techniques and prepare written projects and give oral presentations in addition to the standard CHEM 1412 coursework. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Explore-Physical and Natural World; Writing Intensive. GT-SC1. Coreq., CHEM 1511, or prer., CHEM 1511 with a grade of "C" or higher.

CHEM 2001 - Practical Scientific Writing

1 Credit
This course will teach students to write scientifically, with emphasis on laboratory reports, journal articles, and literature reviews. Students will learn to interpret and present scientific data in a professional format in keeping with current literature. Approved for Compass Curriculum requirement: Writing Intensive. Prer., CHEM 1511 and CHEM 1513 (formerly CHEM 1060 honors or CHEM 1331) with grades of "C" or higher.

CHEM 2904 - Research: Lower Division

1-4 Credits
Open to qualified freshman and sophomore students by arrangement with a faculty member. Students will plan a project with the faculty member prior to registering for the course. A written report must be submitted at the end of the semester summarizing the research results. Students may take CHEM 2904 under only one faculty member in a given semester. Consent of instructor required.

CHEM 3001 - Organic Chemistry

3 Credits
For students who need only a one-semester course in organic chemistry. This is a survey of organic nomenclature, structure, preparations, and reactions. The course includes bioorganic topics, such as carbohydrates, peptides, and proteins, as well as a general introduction to important functional groups. Prer., CHEM 1411 and CHEM 1412 (formerly CHEM 1060 or CHEM 1311) with grades of "C" or higher. Coreq., CHEM 3002.

CHEM 3002 - Organic Chemistry Laboratory

2 Credits
For students who need only a one-semester course in organic chemistry. Instruction in experimental techniques, organic synthesis, and analysis. Students must register for the Lecture (section 001) and Lab (sections 010-0X0) in addition to the corequisite course. Coreq., CHEM 3001, or prer., CHEM 3001 with a grade of "C" or higher.

CHEM 3101 - Organic Chemistry I

3 Credits
For all students (except Chemistry and Biochemistry majors) who need a full-year organic sequence. Topics include structure and reactions of alkanes, alkenes, and alkyl halides, organic nomenclature, stereochemistry, reaction mechanisms and kinetics. Prer., CHEM 1411 and CHEM 1412 (formerly CHEM 1060 or CHEM 1311) with grades of "C" or higher. Coreq., CHEM 3102.

CHEM 3102 - Organic Chemistry Laboratory I

2 Credits
For all students (except Chemistry and Biochemistry majors) who need a full-year organic sequence. Instruction in experimental techniques of modern organic chemistry including microscale techniques, spectroscopic methods and interpretation (IR, NMR, MS), synthesis, and analysis. Students must register for Lecture (section 001) and Lab (section 010-0X0). Coreq., CHEM 3101, or prer., CHEM 3101 with a grade of "C" or higher.

CHEM 3111 - Organic Chemistry II

3 Credits
For all students (except Chemistry and Biochemistry majors) who need a full-year organic sequence. Topics include structure and reactions of alcohols, carboxylic acids, aldehydes, ketones, amines, aromatic compounds, heterocycles, sugars and amino acids. Emphasis is on organic syntheses and reaction mechanisms. Prer., CHEM 3101 (formerly CHEM 3310) and CHEM 3102 (formerly CHEM 3330) with grades of "C" or higher. Coreq., CHEM 3112.

CHEM 3112 - Organic Chemistry Laboratory II

2 Credits
For all students (except Chemistry and Biochemistry majors) who need a full-year organic sequence. Emphasis is on spectroscopic methods and interpretation (IR, NMR, MS), synthesis, an analysis. Students must register for Lecture (section 001) and Lab (sections

010-0X0) in addition to the corequisite course. Coreq., CHEM 3111, or prer., CHEM 3111 with a grade of "C" or higher.

CHEM 3201 - Organic Chemistry for Majors I

3 Credits
For all chemistry and biochemistry majors. Topics include structure and reactions of alkanes, alkenes, and alkyl halides, organic nomenclature, stereochemistry, and reaction mechanisms and kinetics. Prer., CHEM 1411 and CHEM 1412 or CHEM 1511 and CHEM 1513 with grades of "B" or higher. Coreq., CHEM 3203.

CHEM 3203 - Organic Chemistry Lab for Majors I

2 Credits
Lab to accompany CHEM 3201. An introduction to organic synthetic and spectroscopic methods for chemistry and biochemistry majors. Coreq., CHEM 3201, or prer., CHEM 3201 with a grade of "C" or higher.

CHEM 3211 - Organic Chemistry for Majors II

3 Credits
For all chemistry and biochemistry majors. Topics include structure and reactions of alcohols, carboxylic acids, aldehydes, ketones, amines, aromatic compounds, heterocycles, sugars, and amino acids. Emphasis is on organic syntheses and reaction mechanisms. Prer., CHEM 3201 and CHEM 3203 (formerly CHEM 3370) with grades of "C" or higher. Coreq, CHEM 3213.

CHEM 3213 - Organic Chemistry Laboratory for Majors II

2 Credits
Lab section to accompany CHEM 3211. An introduction to organic synthetic and spectroscopic methods for chemistry and biochemistry majors. Coreq., CHEM 3211, or prer., CHEM 3211 with a grade of "C" or higher.

CHEM 4001 - Analytical Chemistry

3 Credits
Emphasis is on chemical equilibrium, quantitative analysis, spectroscopy, electrochemistry, and analytical separations. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., CHEM 3111 (formerly CHEM 3320) or CHEM 3211, and CHEM 3112 or CHEM 3213 (formerly CHEM 3340, CHEM 3380) with grades of "C" or higher. Coreq., CHEM 4002.

CHEM 4002 - Analytical Chemistry Laboratory

1 Credit
Emphasis is on quantitative analysis by means of titration, spectrophotometry, electrode potentials, and analytical separation techniques. Coreq., CHEM 4001, or prer., CHEM 4001 with a grade of "C" or higher.

CHEM 4011 - Instrumental Analysis

3 Credits
Emphasis is on instrumental methods of analysis, including spectral, electroanalytical and separations methods. Approved for Compass Curriculum requirement: Writing Intensive. Prer., CHEM 4001 (formerly CHEM 4170), CHEM 4002 (formerly CHEM 4170 lab), and PES 1120 with grades of "C" or higher. Prer. or coreq., CHEM 4111 or CHEM 4701 (formerly CHEM 4510, CHEM 4500). Coreq., CHEM 4012. Meets with CHEM 5011.

CHEM 4012 - Instrumental Analysis Laboratory

2 Credits
Laboratory work in instrumental methods of analysis, including spectrochemical, electroanalytical and chromatographic techniques. Coreq., CHEM 4011, or prer., CHEM 4011 with a grade of "C" or higher.

CHEM 4101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy

3 Credits
The application of quantum mechanics to atomic and molecular structure and spectra. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360), PES 1120, PES 2160, and MATH 2350 with grades of "C" or higher. Meets with CHEM 5101.

CHEM 4102 - Experimental Physical Chemistry: Quantum Mechanics and Spectroscopy

1 Credit
Instruction in the experimental and computational techniques of modern physical chemistry with an emphasis on the design, construction, calibration, and application of spectroscopic measurement tools; synthesis and characterization of materials demonstrating quantized effects; and use of computer programs to model systems of varying size. Coreq., CHEM 4101, or prer., CHEM 4101 with a grade of "C" or higher.

CHEM 4111 - Physical Chemistry: Thermodynamics and Kinetics

3 Credits
The application of thermodynamics to phase changes, chemical reactions, and electrochemical cells. The rates and mechanics of chemical reactions. Meets with CHEM 5111. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360), PES 1120, PES 2160, and MATH 1360 with grades of "C" or higher.

CHEM 4112 - Experimental Physical Chemistry: Thermodynamics and Kinetics

1 Credit
Instruction in the experimental techniques of modern physical chemistry with emphasis on experiments illustrating the fundamental principles of chemical thermodynamics and chemical kinetics. Coreq., CHEM 4111, or prer., CHEM 4111 with a grade of "C" or higher.

CHEM 4201 - Current Perspectives in Science and Medicine

3 Credits
This course introduces important and sometimes controversial issues in science and medicine through background readings from primary literature and other sources, presentations by invited speakers and by students in the course, group discussions, reflection essays, and occasional field trips. Prer., CHEM 3111 OR CHEM 3211 (formerly CHEM 3320, CHEM 3360) with a grade of "C" or higher.

CHEM 4211 - Biochemistry

3 Credits
A comprehensive and detailed one-semester investigation of major topics in biochemistry, including protein structure and function; enzyme kinetics, mechanism, and regulation; and the regulation of major metabolic pathways. Prer., BIOL 1350, and CHEM 3001 or CHEM 3111 or CHEM 3211 (formerly CHEM 3300, CHEM 3320, CHEM 3360) with grades of "C" or higher.

CHEM 4221 - Biochemistry I

3 Credits
Topics include amino acids and their properties, experimental biochemical techniques, the structure, function, and regulation of proteins and enzymes, enzyme mechanisms and kinetics, lipids, and energetics of biological processes. Prer., BIOL 1350, and CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grades of "C" or higher. Meets with CHEM 5211.

CHEM 4222 - Biochemistry Laboratory

3 Credits
Designed to provide laboratory skills and techniques. Experiments are selected to demonstrate principles and applications of current techniques and the use of instrumentation. Spectrophotometry, enzymology, centrifugation, and electrophoresis are stressed. Coreq., CHEM 4211 or CHEM 4221 (formerly CHEM 4830, CHEM 4810) with a grade of "C" or higher. Meets with CHEM 5222.

CHEM 4231 - Biochemistry II

3 Credits
Topics include common themes in metabolism, signal transduction pathways, common metabolic pathways such as glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation, and fatty acid metabolism with a focus on enzymes, control of the pathways, and interconnections between pathways. Prer., CHEM 4221 (formerly CHEM 4810) with a grade of "C" or higher. Meets with CHEM 5231.

CHEM 4232 - Adv Techniques in Biochemistry

3 Credits
Students develop competence in critical advanced lab techniques, including plasmid construction, characterization, and isolation; protein expression and characterization; enzyme assays; and product isolation and characterization. Prer., CHEM 4222 (formerly CHEM 4860) with a grade of "C" or higher. Meets with CHEM 5232.

CHEM 4241 - Biochemistry of the Gene

3 Credits
Introduces nucleic acids and then focuses on genome structures in simple and complex organisms. Examines the role of chromosomal proteins, non-coding RNA, and chromatin architecture to build an understanding of how regulation of gene expression determines cell function. Prer., CHEM 4211 or CHEM 4221 (formerly CHEM 4830, CHEM 4810) with a grade of "C" or higher. Meets with CHEM 5241.

CHEM 4251 - Biochemistry of Membranes: Structure and Function

3 Credits
Builds on key topics introduced in CHEM 4221/4231 to provide current information on membrane structure and function, as well as intracellular and intercellular communication. Emphasis is on the relationship of membrane structure and function to human health and development. Prer., CHEM 4231 (formerly CHEM 4820) with a grade of "C" or higher. Meets with CHEM 5251.

CHEM 4301 - Inorganic Chemistry I

3 Credits
An introduction to the physical concepts of modern inorganic chemistry. Topics include atomic structure and periodic properties, ionic and covalent bonding, and a survey of inorganic main group reactions. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360); CHEM 4001 (formerly CHEM 4170); and either CHEM 4101 or CHEM 4701 (formerly CHEM 4520 or CHEM 4500) with grades of "C" or higher.

CHEM 4311 - Inorganic Chemistry II

3 Credits
A detailed study of the structure of transition metal complexes. Prer., CHEM 4301 (formerly CHEM 4010) with a grade of "C" or higher.

CHEM 4421 - Chemistry of Heterocyclic Compounds

3 Credits
Chemistry of five- and six-membered heterocycles and fused heterocycles, including structure, preparation, reactions and applications in the pharmaceutical world and in biochemistry and medicine. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360); and one of the following: CHEM 4001, CHEM 4211, or CHEM 4221 (formerly CHEM 4170, CHEM 4830, CHEM 4810) with grades of "C" or higher. Meets with CHEM 5421.

CHEM 4501 - Mass Spectrometry Instrumentation and Use

3 Credits
Theory and practice of mass spectrometry instrumentation with a focus on the history of the instrumentation, instrumentation components, ion formation and ionization sources, tandem mass spectrometry, quantitative data analysis, fragmentation and data interpretation, accelerator mass spectrometry, and new topics. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with a grade of "C" or higher. Meets with CHEM 5501.

CHEM 4502 - Bioanalytical Techniques

3 Credits
This course will focus on the practical application of bioanalytical techniques for the detection and quantification of biomolecules in complex sample matrices. In this lab/lecture course students will gain understanding of basic bioanalytical instrumentation, sample preparation, and analysis techniques, and apply them in a variety of laboratory experiments. Prer., CHEM 4001, CHEM 4002, and either CHEM 4211 or CHEM 4221 with grades of "C" or higher. Meets with CHEM 5502.

CHEM 4511 - Forensic Chemistry

3 Credits
Introduction to the elements of clinical chemistry and forensic toxicology, concepts of pharmacokinetics and pharmacodynamics, and chemical reaction mechanisms associated with drug metabolism and effects on neurotransmission. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grades of "C" or higher. Meets with CHEM 5511.

CHEM 4521 - Environmental Chemistry

3 Credits
An in-depth survey of the macroscopic and microscopic principles of environmental chemistry processes in land, air, and water; energy and climate change; chemical equilibrium, kinetics, reduction-oxidation reactions, acid-base chemistry, and thermodynamics. A focus on current environmental problems, impact, and sustainability. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Sustainability. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grade of "C" or higher. Meets with CHEM 5521.

CHEM 4601 - Nanoscience and Nanotechnology

3 Credits
Crystalline structure formulation of two-, one-, and zero-dimensional materials and the presence of quantum mechanical wave functions in such periodic potentials. Time-dependent perturbation-theory formulation of absorbance and emission phenomena. The application of band structure and spectroscopic properties to the design of modern devices, sensors, and imaging schemes. Prer., CHEM 4101 (formerly

CHEM 4520) or PES 4250 with a grade of "C" or higher. Meets with CHEM 5601.

CHEM 4621 - Surface Chemistry

3 Credits
A study of the physical chemistry of surfaces and interfaces. Topics include interfacial tension, wetting, monolayers, adsorption, heterogeneous catalysis, surface diffusion, kinetics of phase transformations, electrocapillarity, and the characterization of solid surfaces. Prer., CHEM 4101 (formerly CHEM 4520) with a grade of "C" or higher. Meets with CHEM 5621.

CHEM 4701 - Biophysical Chemistry

3 Credits
Covers physical chemistry topics such as thermodynamics, chemical equilibrium, and kinetics, illustrating these topics with important biological processes. In addition, an introduction to quantum theory will be presented with an emphasis on its application to biochemical problems. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360); MATH 1330 or MATH 1350; and either PES 1020 or PES 1120 with grades of "C" or higher.

CHEM 4711 - Bioinorganic Chemistry

3 Credits
Covers topics of interest in bioinorganic chemistry. Structures of metal active sites, mechanisms, and model complexes will be discussed. Relevant inorganic protein structures will be covered. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360), and CHEM 4211 or CHEM 4221 (formerly CHEM 4830, CHEM 4810) with grades of "C" or higher. Meets with CHEM 5711.

CHEM 4721 - Biochemistry of Drugs

3 Credits
This course examines in detail the mechanisms of action and biochemical basis of both pharmaceutical and recreational drugs. The use of primary research literature is emphasized. Prer., CHEM 4211 or CHEM 4221 with a grade of "C" or higher. Meets with CHEM 5721.

CHEM 4801 - Molecular Photochemistry

3 Credits
Covers the fundamental processes associated with the interaction of light and molecules. Topics include absorption, emission, radiationless decay processes, energy transfer, and photochemistry. Experimental techniques and equipment will also be discussed. Prer., CHEM 4111 or CHEM 4701 (formerly CHEM 4510, CHEM 4500) with a grade of "C" or higher.

CHEM 4811 - Molecular Symmetry and Chemical Applications of Group Theory

3 Credits
Symmetry operations and elements are defined and used to determine the point groups of molecules. Topics include molecular symmetry and point groups, group theory and its relationship to molecular vibrations, optical transitions, molecular orbital theory, and ligand field theory. Prer., CHEM 4101 (formerly CHEM 4520), CHEM 4102 (formerly CHEM 4540), and CHEM 4301 (formerly CHEM 4010) with grades of "C" or higher.

CHEM 4901 - Topics in Chemistry and Biochemistry

1-4 Credits
Examination of selected topics in chemistry and biochemistry in lecture, seminar, or laboratory format. Topic will change according to the interest of the instructor and students. Students may repeat the course for credit when the topic changes. Consult Course Search on the UCCS website or the MyUCCS Portal for topic. Meets with CHEM 5901.

CHEM 4904 - Research: Upper Division

1-8 Credits
Open to qualified junior and senior students by arrangement with a faculty member. Students will plan a project with the faculty member prior to registering for the course. A written report must be submitted at the end of the semester summarizing the research results. Students may take CHEM 4904 under only one faculty member in a given semester. Prer., Consent of instructor.

CHEM 4905 - Internship

1-3 Credits
Students arrange a program with appropriate faculty members through the auspices of local government or industrial facilities. The program will generally require independent laboratory or literature work, resulting in a report or series of reports. Prer., Consent of instructor.

CHEM 4911 - Chemistry Capstone

3 Credits
A capstone course designed to familiarize students with the chemical literature and to allow for written projects and formal oral presentations. Approved for the LAS Oral Communication requirement. Approved for the Compass Curriculum requirement: Summit. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, 3360); and CHEM 4001 or CHEM 4101 (formerly CHEM 4170, 4520) with grades of "C" or higher. Meets with CHEM 5911.

CHEM 4921 - Biochemistry Capstone

3 Credits
A capstone course designed to familiarize students with the bochemical literature and to allow for written projects and formal oral presentations. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Summit. Prer., CHEM 4231 and CHEM 4241 (formerly CHEM 4820 and CHEM 4815) with grades of "C" or higher. Meets with CHEM 5921.

CHEM 5000 - Chemistry for Teachers

0.5 - 2.5 Credits
A standards-based chemistry/science education course for middle school science teachers. Chemistry content will be integrated with pedagogy including inquiry, cooperative learning, and assessment methods. Participants will engage in reflection on current practice, development of teaching methodology, and application of content and pedagogy. Open to PIPES participants only. Prer., Consent of instructor.

CHEM 5011 - Instrumental Analysis

3 Credits
Emphasis is on instrumental methods of analysis, including spectral, electroanalytical, and separations methods. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4001 (formerly CHEM 4170), CHEM 4002 (formerly CHEM 4170 lab), and PES 1120 with grades of "C" or higher. Prer. or coreq., CHEM 4111 (formerly CHEM 4510), CHEM 5111, or CHEM 4701 , (formerly CHEM 4500). Coreq., CHEM 4012. Meets with CHEM 4011.

CHEM 5101 - Physical Chemistry: Quantum Mechanics and Molecular Spectroscopy

3 Credits
The application of quantum mechanics to atomic and molecular structure and spectra. Graduate students will read primary literature

articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) , PES 1120, PES 2160, and MATH 2350 with grades of "C" or higher. Meets with CHEM 4101.

CHEM 5111 - Physical Chemistry: Thermodynamics and Kinetics

3 Credits
The application of thermodynamics to phase changes, chemical reactions, and electrochemical cells. The rates and mechanics of chemical reactions. Graduate students will read primary literature articles and prepare oral presentations or written projects. Meets with CHEM 4111. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360), PES 1120, PES 2160, and MATH 1360 with grades of "C" or higher.

CHEM 5221 - Biochemistry I

3 Credits
Topics include amino acids and their properties, experimental biochemical techniques, the structure, function, and regulation of proteins and enzymes, enzyme mechanisms and kinetics, lipids, and energetics of biological processes. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., BIOL 1350, and CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grades of "C" or higher. Meets with CHEM 4221.

CHEM 5222 - Biochemistry Laboratory

3 Credits
Designed to provide laboratory skills and techniques. Experiments are selected to demonstrate principles and applications of current techniques and the use of instrumentation. Spectrophotometry, enzymology, centrifugation, and electrophoresis are stressed. Graduate students will read primary literature articles and prepare oral presentations or written projects. Coreq., CHEM 4211 (formerly CHEM 4830), CHEM 4221 (formerly CHEM 4810), or CHEM 5221 (formerly CHEM 5810) with grades of "C" or higher. Meets with CHEM 4222.

CHEM 5231 - Biochemistry II

3 Credits
Topics include common themes in metabolism, signal transduction pathways, common metabolic pathways such as glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation, and fatty acid metabolism with a focus on enzymes, control of the pathways, and interconnections between pathways. Prer., CHEM 4221 or CHEM 5221 (formerly CHEM 4810/5810) with a grade of "C" or higher. Meets with CHEM 4231.

CHEM 5232 - Adv Techniques in Biochemistry

3 Credits
Students develop competence in critical advanced lab techniques, including plasmid construction, characterization, and isolation; protein expression and characterization; enzymes assays; and product isolation and characterization. Graduate students will read additional primary literature articles and they will identify a problem and design an experiment, using advanced biochemical techniques, to test their hypothesis. Prer., CHEM 4222 (formerly CHEM 4860) or CHEM 5222 (formerly CHEM 5860) with a grade of "C" or higher. Meets with CHEM 4232.

CHEM 5241 - Biochemistry of the Gene

3 Credits
Introduces nucleic acids and then focuses on genome structures in simple and complex organisms. Examines the role of chromosomal proteins, non-coding RNA, and chromatin architecture to build an understanding of how regulation of gene expression determines cell function. Graduate students will read additional primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4221 or CHEM 5221 (formerly CHEM 4810/5810) with a grade of "C" or higher. Meets with CHEM 4241.

CHEM 5251 - Biochemistry of Membranes: Structure and Function

3 Credits
Builds on key topics introduced in CHEM 4221/4231 to provide current information on membrane structure and function, as well as intracellular and intercellular communication. Emphasis is on the relationship of membrane structure and function to human health and development. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 4231 or CHEM 5231 (formerly CHEM 4820/5820) with a grade of "C" or higher. Meets with CHEM 4251.

CHEM 5401 - Advanced Organic Chemistry: Synthesis

3 Credits
Survey of organic chemistry including mechanistic and synthetic organic chemistry. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with a grade of "C" or higher.

CHEM 5411 - Advanced Organic Chemistry: Mechanisms

3 Credits
Modern concepts of physical organic chemistry and their use in interpreting data in terms of mechanisms or organic reactions and reactivities of organic compounds. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) and CHEM 4101 or CHEM 5101 (formerly CHEM 4520, CHEM 5520) with grades of "C" or higher.

CHEM 5421 - Chemistry of Heterocyclic Compounds

3 Credits
Chemistry of five- and six-membered heterocycles and fused heterocycles, including structure, preparation, reactions and applications in the pharmaceutical world and in biochemistry and medicine. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360); and one of the following: CHEM 4001, CHEM 4211, CHEM 4221, or CHEM 5221 (formerly CHEM 4170, CHEM 4830, CHEM 4810, CHEM 5810), with grades of "C" or higher. Meets with CHEM 4421.

CHEM 5501 - Mass Spectrometry Instrumentation and Use

3 Credits
Theory and practice of mass spectrometry instrumentation with a focus on the history of the instrumentation, instrumentation components, ion formation and ionization sources, tandem mass spectrometry, quantitative data analysis, fragmentation and data interpretation, accelerator mass spectrometry, and new topics. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with a grade of "C" or higher. Meets with CHEM 4501.

CHEM 5502 - Bioanalytical Techniques

3 Credits
This course will focus on the practical application of bioanalytical techniques for the detection and quantification of biomolecules in complex sample matrices. In this lab/lecture course students will gain understanding of basic bioanalytical instrumentation, sample preparation, and analysis techniques, and apply them in a variety of laboratory experiments. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4001, CHEM 4002, and either CHEM 4211 or CHEM 4221 with grades of "C" or higher. Meets with CHEM 4502.

CHEM 5511 - Forensic Chemistry

3 Credits
Introduction to the elements of clinical chemistry and forensic toxicology, concepts of pharmacokinetics and pharmacodynamics, and chemical reaction mechanisms associated with drug metabolism and effects on neurotransmission. Graduate students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grades of "C" or higher. Meets with CHEM 4511.

CHEM 5521 - Environmental Chemistry

3 Credits
An in-depth survey of the macroscopic and microscopic principles of environmental chemistry processes in land, air, and water; energy and climate change; chemical equilibrium, kinetics, reduction-oxidation reactions, acid-base chemistry, and thermodynamics. A focus on current environmental problems, impact, and sustainability. Approved for LAS Global Awareness requirement. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360) with grade of "C" or higher. Meets with CHEM 4521.

CHEM 5601 - Nanoscience & Nanotechnology

3 Credits
Crystalline structure formulation of two-, one-, and zero-dimensional materials and the presence of quantum mechanical wave functions in such periodic potentials. Time-dependent perturbation-theory formulation of absorbance and emission phenomena. The application of band structure and spectroscopic properties to the design of modern devices, sensors, and imaging schemes. Graduate students will read additional primary literature articles and prepare oral presentations and/or written projects. Prer., CHEM 4101, CHEM 5101, or PES 4250 with a grade of "C" or higher. Meets with CHEM 4601.

CHEM 5621 - Surface Chemistry

3 Credits
A study of the physical chemistry of surfaces and interfaces. Topics include interfacial tension, wetting, monolayers, adsorption, heterogeneous catalysis, surface diffusion, kinetics of phase transformations, electrocapillarity, and the characterization of solid surfaces. Students will read primary literature articles and prepare oral presentations or written projects. Prer., CHEM 4101 or CHEM 5101 (formerly CHEM 4520, CHEM 5520) with a grade of "C" or higher. Meets with CHEM 4621.

CHEM 5711 - Bioinorganic Chemistry

3 Credits
Covers topics of interest in bioinorganic chemistry. Structures of metal active sites, mechanisms, and model complexes will be discussed. Relevant inorganic protein structures will be covered. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, CHEM 3360), and CHEM 4211 or CHEM 4221 (formerly CHEM 4830, CHEM 4810) with grades of "C" or higher. Meets with CHEM 4711.

CHEM 5721 - Biochemistry of Drugs

3 Credits
This course examines in detail the mechanisms of action and biochemical basis of both pharmaceutical and recreational drugs. The use of primary research literature is emphasized. Graduate students will be asked to read and present advances in relevant research areas. Prer., CHEM 4211 or CHEM 4221 with a grade of "C" or higher. Meets with CHEM 4721.

CHEM 5901 - Topics in Chemistry and Biochemistry

1-4 Credits
Examination of selected topics in chemistry and biochemistry in lecture, seminar, and/or laboratory format. Topic will change according to the interest of the instructor and students. Students may repeat course for credit when topic changes. Consult Course Search on the UCCS website or the MyUCCS Portal for topic. Graduate students will read primary literature articles and prepare oral presentations or written projects. Meets with CHEM 4901.

CHEM 5904 - Research: Graduate

1-3 Credits
Open to qualified graduate students by arrangement with a faculty member. Students will plan a project with the faculty member prior to registering for the course. A written report must be submitted at the end of the semester summarizing the research results. Students may take CHEM 5904 under only one faculty member in a given semester. Prer., Consent of instructor.

CHEM 5911 - Chemistry Capstone

3 Credits
A capstone course designed to familiarize students with the chemical literature and to allow for written projects and formal oral presentations. Graduate students will prepare additional oral presentations and written projects based on their graduate laboratory or literature research. Prer., CHEM 3111 or CHEM 3211 (formerly CHEM 3320, 3360); and CHEM 4001 or CHEM 4101 (formerly CHEM 4170, 4520) with grades of "C" or higher. Meets with CHEM 4911.

CHEM 5921 - Biochemistry Capstone

3 Credits
A capstone designed to familiarize students with the biochemical literature and to allow for written projects and formal oral presentations. Prer., CHEM 4231 or CHEM 5231 (formerly CHEM 4820, CHEM 5820) and CHEM 4241 or CHEM 5241 (formerly CHEM 4815, CHEM 5815) with grades of "C" or higher. Meets with CHEM 4921.

CHEM 7000 - Masters Thesis

1-6 Credits
Masters Thesis

CHEM 9400 - Independent Study in Chemistry - Undergraduate

1-3 Credits
Consent of instructor required. For upper-division students.

CHEM 9500 - Independent Study in Chemistry - Graduate

1-6 Credits
Consent of instructor required.

CHEM 9990 - Candidate for Degree
0 Credits
Candidate for Degree

CHIN - Chinese

CHIN 1010 - Beginning Chinese I

5 Credits
Introduces modern Chinese (Mandarin), developing all four skills (speaking, listening, reading, and writing) and communicative strategies. Students learn traditional full-form characters and the principles for converting them into simplified characters.

CHIN 1020 - Beginning Mandarin Chinese II

5 Credits
CHIN 1020 is the second semester of study of Mandarin Chinese. In this 5 credit course, students will further develop the four skills of listening, speaking, reading and writing in a communicative context. The course will emphasize using the Chinese language in a variety of daily-life scenarios and focus on practicing a broad range of verbal and written communication skills. Prer., CHIN 1010 or equivalent.

CHIN 2110 - Intermediate Chinese

5 Credits
This course in intermediate Mandariin Chinese is designed for students who already have knowledge of basic Chinese learned either through taking CHIN 1010 and CHIN 1020, or through some other relevant experience. We emphasize using the Chinese language in a variety of daily-life scenarios and focus on practicing a broad range of verbal and written communication skills. We will also integrate Chines culture into language learning to enhance the understanding of cultural influence on the language.

CJ - Criminal Justice

CJ 1001 - Introduction to Criminal Justice

3 Credits
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. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

CJ 1002 - CSI: Fact or Fantasy?

3 Credits
The prevalence and popularity of movies and television shows dealing with forensic investigation of crimes has created a gap between reality and fantasy. This course exposes some of the inaccuracies, exaggerated uses, and interpretation of forensic tools.

CJ 1003 - Introduction to Restorative Justice

3 Credits
This course introduces the principles and practices of restorative justice. Students will examine specific restorative methods and models, and will have a hands-on opportunity to learn and practice restorative dialogue facilitation conflict conversation skills, becoming trained RJ facilitators by the course end.

CJ 2030 - Introduction to Forensic Studies

3 Credits
A first exposure to the field of forensic studies for undergraduate students. Students will gain knowledge regarding the field of forensic studies through the application of forensics to criminal investigations with an emphasis on the relationship between forensic study and the legal system. Different disciplines will be examined and an emphasis placed on the roles of different types of professionals involved in evaluating a crime scene and the methodology of collecting and interpreting data.

CJ 2032 - Investigation of Injury and Death

3 Credits
An exploration of concepts and principles related to investigation of injury and death. Forensic pathology and forensic autopsy procedures are included. Specialized topics in clinical practice such as medicolegal evidence, violence injury, and environmental pathology are included.

CJ 2041 - Crime Theory and Causes

3 Credits
Provides a general survey of the nature and causes of crime and efforts of the criminal justice system to predict, prevent, modify, and correct this behavior. This course involves a critical appraisal of various theories of crime causation, including an examination of biological, psychological, economic, and sociological perspectives that explain crime and deviance.

CJ 2050 - Introduction to Human Security

3 Credits
Students will examine what makes for a peaceful and secure society by studying the links between human rights, human needs, and human development. The differences between documented threats and perceived uncertainties in communities will also be examined.

CJ 3050 - Interview & Interrogation Techniques

3 Credits
Introduces important, practical aspects of investigation. Study of technical and legal approaches used in gathering information from victims, witnesses, and suspects. Characteristics of questioning and use of psychological influences. Strategies of evaluation, critical thinking, and assessment. Prer., Sophomore Standing.

CJ 3100 - Criminal Justice Research Methods

4 Credits
Introduces students to the formulation of research questions covering crime and justice, research designs, data collection, and the interpretation and reporting of these data in criminological and justice system settings. Also includes experimental and non-experimental research designs, probability and non-probability sampling techniques, and construction of scales and indexes for research purposes. Approved for Compass Curriculum requirement: Writing Intensive. Prer., Sophomore Standing. Meets with SOC 3070.

CJ 3150 - Statistics for Criminal Justice

4 Credits
Serves as an introduction to descriptive and inferential statistics and computer analysis of criminology and criminal justice data. Includes basic procedures of hypothesis testing, correlation and regression analysis, and the analysis of continuous and binary dependent variables. Emphasis is placed on the examination of research problems and issues in the field of criminology and criminal justice. Prer., CJ 3100 or SOC 3070 and Sophomore standing. Meets with SOC 3170.

CJ 3160 - White-Collar Crime

3 Credits
Introduces students to a variety of topics and issues including types, causes and the measurement of white-collar crime. Examines the debate surrounding the definition of white-collar crime; provides an overview of the costs of white-collar and corporate crime in society;

considers competing theories that explain white-collar criminality; and, explores the use of criminal sanctions to deter misconduct involving corporations and elite offenders. Prer., Sophomore Standing.

CJ 3220 - Community-Based Corrections

3 Credits
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. Prer., Sophomore Standing.

CJ 3230 - Restorative Justice: An Alternative Approach to Repairing Harm and Restoring Relationships

3 Credits
Restorative practices are used in our judicial system, schools, and the work place. This highly interactive course will provide an introduction to the fundamental principles and practices of restorative justice (a victim-centered response to harm) and restorative dialogue (conflict conversation skills). Participants will explore the needs and roles of key stakeholders in conflict and crime, and learn how to apply various restorative practices in their work place, school, and community. Throughout the course emphasis is placed on how the theories and practices of restorative justice radically reframe the traditional notions of the American criminal justice system and education systems. Students will be challenged to examine the differences between restorative and retributive systems through a lens of multicultural perspectives and experiences. Special focus will be placed on restorative dialogue skills so participants come away with a conflict conversation skill set. Students will learn have the opportunity to practice restorative facilitation skills. Prer., Sophomore standing.

CJ 3250 - Violence in Society

3 Credits
Engages with a series of questions that social scientists have asked about violence, including: What situations and circumstances are associated with violent victimization and offending? How do situational factors and social groups shape violent events? What kinds of individual and organized responses does violence provoke? In considering the answers to these and other questions, we will draw on cross-cultural and historical research, as well as contemporary North American research on violence. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 1410 or ENGL 2080 or ENGL 2090 or ENGL 3010 or ENGL 3080 or INOV 2100 with a grade of "C-" or higher; Sophomore standing.

CJ 3251 - Crime and Media

3 Credits
Surveys the relationships between mass media, crime, offenders, victims, and criminal justice. It explores how the criminal justice system is portrayed in the media and the influence of these portrayals on society public policy, and the criminal justice system. Prer., Sophomore Standing.

CJ 3310 - Police in Contemporary Society

3 Credits
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. Prer., Sophomore Standing.

CJ 3320 - Police-Community Relations

3 Credits
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, experiences and various assessments of the advantages and disadvantages of community policing are emphasized. Prer., Sophomore Standing.

CJ 3400 - Public Administration and Homeland Security

3 Credits
Examines the role of administration in government, general trends in American public administration, problems in organization, and techniques in management. Emphasis will be on homeland security, including the importance of homeland defense and U.S. Northern Command, its mission, and other government organizations with which it interacts. Participants will gain an understanding of homeland security and homeland defense from the perspective of the primary national-level players: Department of Defense, U.S. Northern Command and the Department of Homeland Security. Prer., Sophomore Standing.

CJ 3410 - Probation and Parole

3 Credits
Appropriate for students who have a specific interest in the role of probation and parole as correctional sanctions in community settings. Particular attention is paid to evaluation research evidence and factors that contribute to the successful completion of probation and parole, and the role that the community and citizens play in the community corrections process. Prer., Sophomore Standing.

CJ 3420 - Pleas, Trials, and Sentences

3 Credits
Focuses on analysis of case materials involving pleas, trials, and sentences. Content includes an examination of the basic dimensions of criminality, the specific elements of major crimes, the use of confessions, fair trial procedures, and the nature of criminal sanctions including cruel and unusual punishments. Prer., Sophomore Standing.

CJ 3510 - Drugs, Alcohol, and Crime

3 Credits
Looks at the socially constructed nature of drugs and drug policy, and focuses on the variety of ways drugs and crime are connected and the socio-historical context of contemporary U.S. drug policy. Discusses the relationships between drug and alcohol abuse and criminal offending, including the historical and contemporary criminal justice system responses to illegal substances. Prer., Sophomore Standing.

CJ 3520 - Juvenile Justice Administration

3 Credits
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. Emphasis on the nature of juvenile law and methods of dealing with youthful offenders. Prer., Sophomore Standing.

CJ 3530 - Management of Offenders

3 Credits
Study of offender management in the criminal justice system, including offender classification concepts, principles, and techniques of offender management and supervision. Case management strategies to reduce recidivism and address offender risks and needs are discussed. Interview techniques, case diagnosis, and use of testing programs as classification

aids are applied. Operation of reception and diagnostic center and the principles of the treatment process are included. Prer., Sophomore Standing.

CJ 3540 - Crime and Delinquency Prevention

3 Credits
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 aftercare - are explored in the context of youth policy generally. Prer., Sophomore Standing.

CJ 3541 - Risk Factors for Adolescent Antisocial Behavior

3 Credits
An overview of the nature, extent, and causes of adolescent criminal, antisocial, and health risk behaviors, with primary focus on delinquency, violence, substance use (alcohol, tobacco, and other drugs), running away, academic achievement, and sexual behavior. Examines the role of family structure and family dynamics, adolescent development, peers, school, and community on the risk of a variety of antisocial behaviors and negative adolescent outcomes. Considers the scientific evidence behind common assumptions about the trends, causes, and prevention of negative adolescent behaviors and outcomes. Prer., Sophomore Standing.

CJ 3545 - Mental Health & the Criminal Justice System

3 Credits
This course explores the relationship between mental health and criminal behavior. Focuses on the nature and prevalence of mental disorders among criminal populations, the correlates of violence and mental disorders, and institutional and community-based treatment of mentally ill offenders. Prer., Sophomore standing.

CJ 3990 - Art, Graffiti, and Crime

3 Credits
This course provides an interdisciplinary study of cultural, social, and political experience, combining the study of historical, artistic, and philosophical perspectives and their effect on the criminal justice system. Topics include art, graffiti, history, music, literature, politics, and philosophy. This course introduces the use of critical thinking skills in the context of human conflict related to art, graffiti, and social change. Students will be able to evaluate and demonstrate orally and in writing the use of critical thinking skills in the analysis and implications of art, graffiti, technology, music and other symbolisms within the criminal justice system. Prer., ENGL 1310 or any of its equivalents.

CJ 4029 - Legal Aspects of Forensic Studies

3 Credits
An examination into the various types of forensic evidence and its application to the judicial process. The various strengths, weaknesses and veracity of these types of forensic evidence will be examined and discussed. Prer., Sophomore standing.

CJ 4030 - Human Trafficking: Causes and Consequences

3 Credits
Introduces students to the complex criminal justice issue of human trafficking (also referred to as a form of modern day slavery). Trafficking in persons in its historical, economic, political, legal, and social consequences will be discussed. Special emphasis will be placed on identifying the scope of the problem and global policy efforts to counter human trafficking crimes. Prer., Sophomore standing.

CJ 4033 - Crime Scene and Crime Lab

3 Credits
Introduces crime scene preservation, investigation, and the scientific tactics, procedures, and techniques employed by forensic experts. Attention will be given to homicide investigation and its central role in forensic examinations. Prer., Sophomore standing.

CJ 4034 - Criminal Profiling

3 Credits
Introduces the psychological, neurocognitive, social-sociological, and legal dimensions of forensics. Attention will be given to assessment and diagnosis of mental disorders, and the interface between the psychosocial effects of injury and illness and the judicial system. Criminal, civil, and family law applications of forensics will be considered. Prer., Sophomore standing.

CJ 4042 - Corrections

3 Credits
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, alternative correctional placements, and empirical assessments of the short-term and long-term consequences of one's involvement in correctional programs. Prer., Sophomore standing.

CJ 4043 - Law Enforcement

3 Credits
Presents an overview of the role that police play in American society today. Attention is on the origin 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 socio-legal context. Prer., Sophomore standing.

CJ 4044 - Courts and Judicial Process

3 Credits
Examines the basic functions, structure, and organization of the federal and state court systems, with special attention on the criminal court system. Also 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. Prer., Sophomore standing.

CJ 4050 - Advanced Interview and Interrogation Techniques

3 Credits
This course is an integrated study of techniques and use of law enforcement interview and interrogation tactics. Students will combine field study with classroom coursework to develop a better understanding on how law enforcement personnel use the human element in investigating criminal cases. Students will work in the office observing detectives conducting interviews and interrogations in the course of investigating actual cases. All students must pass a rigorous background check including a polygraph exam before being allowed to enroll in the course. Substantial work outside the classroom is required. Prer., CJ 3050 with a grade of "B" or higher, Junior standing, Criminal Justice majors only,

CJ 4120 - Race, Class, and Crime

3 Credits
Examines the relationships between race, social class, and crime. Attention is given to theoretical explanations, empirical research, and patterns of criminal behavior and focuses on historical frameworks that are relevant to current perspectives on the impact and interactions of race, class, and crime in the field. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., Sophomore standing.

CJ 4121 - Ethics in Criminal Justice

3 Credits
This course is designed to begin preparing students in identifying and critically examining ethical issues in the criminal justice system by applying ethical decision models. This course also provides students with the unique 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 professional codes of ethics. Approved for Compass Curriculum requirement: Summit. Prer., Senior standing, CJ majors only; CJ minors with permission of BACJ director..

CJ 4130 - Poverty and Crime

3 Credits
Involves an economic analysis of crime and the criminal justice system. Topics include empirical and theoretical analysis of the economic causes of criminal behavior, the social costs of crime and its prevention, and the design of crime enforcement policies. Prer., Sophomore standing.

CJ 4140 - Domestic Violence and Crime

3 Credits
This course examines the criminal justice system's response to intimate partner violence by focusing on the interactions between victims, offenders, and the individual components of the criminal justice system (law enforcement and the judiciary). 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. Prer., Sophomore standing.

CJ 4170 - Victim Studies

3 Credits
Involves the scientific study of crime victims and focuses on the physical, emotional, and financial harm people suffer at the hands of criminals. Focus is placed on victim-offender relationships, interactions between victims and the criminal justice system, and connections between victims and other social groups and institutions. The theory, history, research, legislation, and policy implications related to the social construction of "the victim" are explored. Prer., Sophomore standing.

CJ 4175 - Homicide Investigation

3 Credits
This course will familiarize students with the basic concepts of homicide investigation in America. Students will develop an understanding of key problems and concerns faced by law enforcement personnel and will explore investigative methods and techniques. Sociological theories relating to various dimensions of homicide and violent crime are applied to the unique problems and challenges faced by today's investigators. Prer., Sophomore standing.

CJ 4180 - Comparative Study of Criminal Justice Systems

3 Credits
Analyzes the dynamics of criminality and the social response to criminality across countries. Special emphasis is placed on the methods of comparative legal analysis utilized to examine international differences in crime and justice, international cooperation in criminal justice, and crime and development. Prer., Sophomore standing.

CJ 4190 - Women and Crime

3 Credits
Explores issues surrounding women as offenders and victims and investigates explanations for the involvement of women in illegal activities. Also examined is the participation of women in criminal justice professions including law enforcement, corrections, judicial processes, and law. Prer., Sophomore standing.

CJ 4200 - Wrongful Convictions

3 Credits
Examines the causes of wrongful conviction by exploring the continuum of criminal justice errors ranging from persons who are falsely accused, arrested, prosecuted, tried, wrongly convicted and imprisoned, to death row inmates who are erroneously executed. This course will explore the causes of wrongful conviction from false confessions, the role of informants, prosecutorial misconduct, ineffectiveness of counsel, and racial bias. Prer., Sophomore standing.

CJ 4230 - Corrections and Treatment

3 Credits
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 variations in the practice of punishment. Prer., Sophomore standing.

CJ 4252 - Criminal Offenders

3 Credits
Introduces the core principles of evidence-based programming and tools of motivational interviewing as they are used currently with the offender population. In addition, students will learn how to utilize these skills working with specific offender populations. Prer., Sophomore standing.

CJ 4340 - High Tech Crimes and Computer Forensics

3 Credits
Provides an understanding of high tech crimes and investigation. These crimes include identity theft, fraud, embezzlement, and forgery. Students will also gain an understanding of computer forensics and its role in law enforcement and investigation. Prer., Sophomore standing.

CJ 4400 - Understanding Terrorism

3 Credits
Understanding the sources of terrorism can help in dealing with terrorists and others who could threaten our homeland. Attendees will be provided with an understanding of the source of threats that may help them in developing effective methods of deterring, preventing, and defeating those threats. Topics may include the history of terrorism, psychology of terrorists, terrorist organizations and support, counter-terrorism organizations, weapons of mass destruction, and asymmetric threats. Prer., Sophomore standing.

CJ 4401 - Introduction to First Responder Organizations

3 Credits
Students will analyze the policies and prac-

tices of agencies commonly referred to as local "first responders," including emergency management, fire and emergency medical, and police organizations. Emphasis will be on homeland security, including the formal and informal relationships between first responder agencies and the manner in which local first responders interact with the state and federal agencies involved in homeland security. Topics may include historical evolution of these agencies; current and future challenges in the fields; services and operations. Prer., Sophomore standing.

CJ 4410 - Criminal Law and Constitutional Procedure

3 Credits
Focuses on substantive criminal law and constitutional rights of the accused in criminal proceedings. Content includes legal aspects of the investigation and arrest processes as well as the rules governing the admissibility of evidence in court. Prer., Sophomore standing.

CJ 4430 - Law and Society

3 Credits
Introduces students to the scholarly study of law. Students will have an opportunity to become familiar with social science perspectives of the law, legal institutions, the legal process, and the impact of law on behavior, with particular emphasis on the study of criminal behavior and the criminal justice process in American society. Additional topics include theories of law and legality, comparative legal systems, lawyers, judges and juries, and the use of social science in the courts. Prer., Sophomore standing.

CJ 4440 - Courts and Social Policy

3 Credits
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. Includes the history of judicial approaches to the criminal justice administrative process and substantive social policy. Prer., Sophomore standing.

CJ 4450 - Child Abuse and Neglect

3 Credits
This advanced seminar course addresses the often difficult but critical investigations into child abuse, child neglect, and child/infant homicides. Students will discuss the history of these investigations as well as emerging developments in the field of criminal justice, and through a multi-disciplinary approach will have the opportunity to explore significant themes, issues, and problems from a broad perspective. Prer., Sophomore standing.

CJ 4460 - Developing Criminal Justice Leadership

3 Credits
This course will examine the competencies, principles, and necessary traits that help students interested in pursuing criminal justice careers understand and develop their own leadership potential. Careful attention is given to developing the student's critical thinking and problem solving abilities in an attempt to prepare them in pursuing entry-level, supervisory, and management-level roles in the criminal justice field. This course will focus on very specific areas of leadership such as building individual leadership skills, understanding ethical decision making, learning crisis conflict resolution skills, and the effects of stress on criminal justice professionals. Students will explore the history, major trends, theories, and implementation and practice of leadership principles and learn the necessary competencies to be a successful leader at any level in a criminal justice organization. Prer., Sophomore standing.

CJ 4520 - Gangs and Criminal Organizations

3 Credits
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. Prer., Sophomore standing.

CJ 4530 - Families and Intergenerational Crime

3 Credits
Focuses on the family as the primary institutional mechanism of social control. The course is structured around social learning theory and explores the relationships between exposure to childhood violence and violence in dating relationships during adolescence and later violent marital relationships. The "cycle of violence" is also discussed in terms of the impact of early childhood violence on juvenile delinquency, adult criminality, and violent behavior in general. Prer., Sophomore standing.

CJ 4600 - Special Topics in Criminal Justice

1-6 Credits
This highly specialized seminar addresses cutting-edge and emerging developments in the field of 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. Prer., Sophomore standing.

CJ 4840 - Independent Study Criminal Justice

1-8 Credits
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. Prer., Junior standing. Consent of instructor required.

CJ 4950 - Honors Research Capstone Experience

3 Credits
This course will assist students in synthesizing what they have learned in the BACJ program by applying their knowledge and skills to a particular problem within Criminology and Criminal Justice. Students will conduct an independent research project, enabling them to explore the issue in depth. The course is taken in the final semester of the student's program. Open only to BACJ majors in the university honors program. Prer., Senior standing, BACJ students only, permission only.

CJ 4960 - Criminal Justice Internship

4-8 Credits
Internships involve a career-related, supervised experiential course in a criminal justice agency. Permission to enroll must be preceded by an application for an internship. Approval by the instructor and advisor is required. Students majoring in Criminal Justice must enroll in an initial minimum 4-credit-hour internship (160 clock hours of internship work). A student may register for more than 4 credit hours of internship, up to a maximum of 8 credit hours. For each additional credit hour the student must complete an additional 40 clock hours of internship work. Prer., Junior standing; Criminal Justice majors only; 18 hours of Criminal Justice coursework to include CJ 1001 and CJ 2041.

CJ 5000 - Law and Social Control

3 Credits
Provides an overview of the theory and application of criminal law in the context of social

control. The course reviews various theoretical perspectives on law and society, focusing on the relationship between law and the structure and function of other social institutions. The course also examines aspects of the criminal law in action, assessing how legal definitions and sanctions are differentially interpreted and applied.

CJ 5001 - Criminal Justice Systems, Policy and Practice

3 Credits
This course examines the salient, current critical issues in the justice system affecting law enforcement, courts, corrections, and recent social developments related to personnel. The class includes in-depth explorations of the development, implementation, and analysis of public policy in the field of criminology. Req., Grad and non-degree grad students only.

CJ 5002 - Criminological Theory

3 Credits
Explores the origins of criminal behavior and the impact of crime on society. The course examines theories of deviant, delinquent, and criminal behavior. Additionally, practical implications and application of theoretical constructs are analyzed through current research paradigms and empirical research. Req., Grad and non-degree grad students only.

CJ 5003 - Research Methods

3 Credits
This course examines research methods used to answer questions and test hypotheses in public and non-profit settings. Methods covered include identifying and reviewing scholarly literature; formulating research questions; selecting appropriate design, data collection, and sampling strategies; and analyzing data. Topics include causal and descriptive designs, interviews and surveys, and statistics such as t-test, chi square, regression, and the Statistical Package for Social Sciences (SPSS). Meets with PAD 5003. Prer., Graduate and non-degree graduate students only.

CJ 5004 - Statistics

3 Credits
This course covers 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, and logical regression analyses. Prereq., CJ 5003. Graduate students only.

CJ 5005 - Law and Society

3 Credits
Introduces a variety of topics related to law's varying functions and societal implications. 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. Req., Grad and non-degree grad students only.

CJ 5007 - Violence

3 Credits
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. Graduate and nondegree graduate students only.

CJ 5008 - Gender, Race, Ethnicity and Social Class: Implications for Criminology, CJ, and Public Service

3 Credits
This seminar bridges individual experiences and social structure by analyzing contemporary United States policies in respect to gender, race/ethnicity, and social class. Specific attention will be paid to the social, economic, and political factors that led to the development and administration of public and/or crime policies. The implications of such policies in regards to social stratification and inequality will be discussed. Possible substantive areas may include crime and violence, criminal justice systems, immigration, social welfare, education, health and human services, family issues, and drug policies. Graduate and nondegree graduate students only. Meets with PAD 5008.

CJ 5009 - Crime and Violence Prevention and Intervention

3 Credits
The course will draw on criminological, social and behavioral science, and public health theories and methods, to examine prevention and intervention development, evaluation paradigms, and methods of process and outcome evaluations. Drawing on major theories and research pertinent to crime and violence, including characteristics of violence and relevant risk factors, reporting and treatment protocols, and current/potential intervention efforts and prevention initiatives, emphasis is on interdisciplinary contributions to violence prevention and control. Students will be exposed to randomized designs, such as community trials, and evaluation of non-randomized interventions, such as policies and legislation. Special attention is given to the implications of process evaluation in modifying criminal justice policy-making and decision-making. Prer., Graduate students only; to include non-degree grads. Meets with PAD 5009.

CJ 5100 - Administration of Criminal Justice

3 Credits
Analyzes the policies and practices of agencies involved in the criminal justice process from 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.

CJ 5120 - Nature and Causes of Crime

3 Credits
Analyzes the social origins of criminal behavior and the impact of crime on society. Various categories of deviant, delinquent, and criminal behavior are examined, and attempts to control such behavior are assessed. Connections between social institutions, social problems, and illegal activities, and the response of the public to the threat of crime are examined.

CJ 5130 - Collaboration Across Sectors

3 Credits
The blurring of the three economic sectors, government, business and nonprofits, continues to increase as more partnerships are developed across sectors. Focuses on collaboration and partnerships involving public, nonprofit and for-profit organizations. 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. Graduate students only. Meets with PAD 5130.

CJ 5220 - American Jury System

3 Credits
Examines historical and current issues in jury as jury size, eyewitness testimony, and jury

reform. Court decisions are examined for a comprehensive understanding of jurors and their role. Prer., Graduate students only.

CJ 5240 - Gang Patterns and Policies

3 Credits
The course uses scientific method and thought processes to think critically about the formation of gangs, gang effects on crime, the criminal gang element, and gang victimization. Traces the origins and historical developments of gang activity in the United States. Topics inlude gang migration, gang-related crime and violence, and the effects of gang involvement on communities and families. Prer., Graduate students only.

CJ 5280 - Computer Crime

3 Credits
Course is designed to enhance interest, experience, and knowledge in leadership that promotes professionalism and ethical behavior. 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. Prer., Graduate students only.

CJ 5301 - Crime and Media

3 Credits
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 on the application of social constructionism to criminal justice-related social problems. Prer., Graduate students only.

CJ 5320 - Police Administration

3 Credits
This course considers the major issues confronting police executives, such as professionalism, recruitment, selection, training, deployment, innovation, evaluation, and charges of brutality, inefficiency, and corruption.

CJ 5321 - Research Methods in Criminal Justice

3 Credits
Provides an assessment of research strategies in criminal justice through an examination of applied research designs and analytical models. The logic and rationale of these various strategies are contrasted, and their relative merits are critiqued. Selected research problems in the criminal justice system are utilized to illustrate the application and interpretation of alternative strategies.

CJ 5330 - Gangs and Criminal Organizations

3 Credits
Examines extent, nature, and trends of gangs and criminal organizations, with a focus on contemporary studies and theories of gang behavior and organized crime. Examines the types of crime, gender and race issues, transnational violence, and public policies regarding criminal organizations. Prer., Graduate students only.

CJ 5340 - High Tech Crimes and Computer Forensics

3 Credits
Provides an understanding of high tech crimes and investigation. These crimes include identity theft, fraud, embezzlement, and forgery. Students will also gain an understanding of computer forensics and its role in law enforcement and investigation. Prer., Graduate and nondegree graduate students only.

CJ 5350 - Management of Offenders

3 Credits
Study of offender management in the criminal justice system, including offender classification concepts, principles, and techniques of offender management and supervision. Case management strategies to reduce recidivism and address offender risks and needs are discussed. Interview techniques, case diagnosis, and use of testing programs as classification aids are applied. Operation of reception and diagnostic center and the principles of the treatment process are included. Prer., Graduate and nondegree graduate students only.

CJ 5361 - Capstone Seminar

3 Credits
Designed to assist students in synthesizing what they have learned in the program by applying their knowledge and skills to a particular problem of interest. Students conduct an independent project, enabling them to explore an issue in depth. This course is taken in the final semester of the student's program. Prer., Completion of all core courses; MCJ Graduate students only. Meets with PAD 5361.

CJ 5391 - Sex Offenders and Offenses

3 Credits
Focuses on the challenges practitioners face in the programs and partnerships that can effectively assess, inform, manage, and treat sex offenders through all phases of the system and reduce recidivism. Prer., Graduate students only.

CJ 5410 - Victim Studies

3 Credits
Examines victim-offender relationships, the interactions between victims and the criminal justice system, and the connections between victims and other social groups and institutions among various populations. Addresses the theory, history, research, legislation, and policy implications related to the social construction of "the victim." Prer., Graduate students only.

CJ 5430 - Drugs, Alcohol, and Crime

3 Credits
Provides an interdisciplinary overview of theory, research and policy issues surrounding the relationship between drugs, alcohol and crime; and the criminal justice system response. Explores the socially constructed nature of illegal substances and connections to U.S. drug policy.

CJ 5460 - Political Advocacy

3 Credits
This course is designed to address advocacy and lobbying issues for graduate students, in the general area of public policy issues and government problems. Special attention is given to how the advocacy process works in the public sector and policy-making bodies and how lobbying techniques and processes can be understood. The general focus of the class is on practical applications at all levels of government with primary attention given to state and local government. It is anticipated that guest speakers will be invited to attend some of the classes and will have the opportunity to utilize their own academic and professional backgrounds and experiences. Graduate students only. Meets with PAD 5460.

CJ 5510 - Contemporary Issues in Policing

3 Credits
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.

CJ 5520 - Corrections

3 Credits
Provides a critical examination of the development and implementation of correctional systems in America. The course presents the origins of correctional efforts and the evolution of the prison; reviews punishment and rehabilitation rationales in the context of sentencing models; examines the social organization of the prison, including inmate subcultures and staff work strategies; and assesses the inmates' rights movement and the impact of judicial intervention in correctional settings.

CJ 5530 - Community Corrections

3 Credits
Analyzes the 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.

CJ 5540 - Juvenile Justice Administration

3 Credits
Examines the 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.

CJ 5550 - Criminal Justice Policy and Planning

3 Credits
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.

CJ 5551 - Judicial Administration

3 Credits
Analyzes the 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.

CJ 5552 - Criminal Justice Ethics

3 Credits
This seminar 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 will be better understood, more carefully analyzed and rendered more tractable. Applied ethics forces a reflection not just on ethics, but also on the nature and operation of the criminal justice system itself.

CJ 5553 - Women and Crime

3 Credits
This seminar 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.

CJ 5554 - Criminal Justice Reform

3 Credits
This seminar provides an overview of reform efforts in the criminal justice system. Selected theoretical approaches and policies are examined and assessed in light of their assumptions and programmatic applications. The rationales and processes underlying selected reform strategies are explored. The implications of the effects of reform in criminal justice policymaking and decision-making are analyzed.

CJ 5560 - Comparative Criminal Justice

3 Credits
Comparison of law and criminal justice system in different countries. Special emphasis on the methods of comparative legal analysis, international cooperation in criminal justice, and crime and development.

CJ 5571 - Social Organization of Crime

3 Credits
This seminar explores the relationship of neighborhood social disorganization to the dynamics of 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. The course will examine social, structural and ecological characteristics of neighborhoods and communities in affecting crime.

CJ 5573 - Organized Crime

3 Credits
This seminar examines the issues involved in understanding those economic activities by which persons involved in "organized crime" make money. Major topics include: the structure of drug trafficking; the operations of illegal gambling activities; the culture and function of loan sharking; the economics of labor racketeering; and the role of criminal groups in fencing stolen goods and providing other services to hijackers and burglars.

CJ 5574 - White Collar Crime

3 Credits
This seminar employs both the social science and legal approaches to examine crime committed by corporations as well as by individuals in white collar occupations. The course covers how such crimes are socially defined, who commits them, who is victimized by them, which social contexts promote them, and how society and the criminal justice system respond to them.

CJ 5575 - The Mentally Disordered Offender

3 Credits
This seminar examines the offender who may be mentally disordered. A survey is made of 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 are addressed.

CJ 5576 - Social Science in the Criminal Justice System

3 Credits
Examines the use of social science as a tool for legal analysis within the criminal justice system. 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 to change law, both constitutional law (particularly the First, Sixth, Eighth, and Fourteenth Amendments) and common law, particularly the construction of procedural rules that govern the operations of the criminal justice system. Prer., Graduate students only.

CJ 5650 - Disaster & Emergency Management

3 Credits
Examines policies for the management of hazards, emergencies and disasters. Focuses on a series of case studies concerning major disasters and on management principles drawn from those cases. Examines the role of institution processes, government organizations and nongovernmental organizations in emergency management. Prer., Graduate and nondegree graduate students only. Meets with PAD 5650.

CJ 5930 - Battered Women & the Legal System

3 Credits
Provides a practical understanding of how the following relate to battered women and their children: a) major developments in federal, state, tribal, administrative, statutory, and case law; b) the role and responses of law enforcement, judges, attorneys, victim assistance providers, and other legal system agents; and c) the role and process of victim advocacy. Meets with PAD 5930.

CJ 5950 - Major Issues in National and Homeland Security

3 Credits
This course covers historical developments of the national security apparatus in the United States since the end of World War II, its role during the Cold War, and developments after the Cold War and in the aftermath of 9/11. Students will be exposed to the discussions about new challenges to the national and homeland security apparatus such as radical religious ideology, proliferation of failed states and non-state actors, 4th generation warfare and issues such as climate change and cybercrime proliferation and their impact on national and homeland security. Meets with PAD 5950. Prer., Graduate and nondegree graduate students only.

CJ 5960 - Introduction to Homeland Security and All Hazards

3 Credits
This course covers general themes related to the introduction to the field of homeland security and understanding of all hazards. It will analyze shortcomings in response to great natural and manmade disasters in recent U.S. history such as Hurricane Katrina, Waldo Canyon fire, Black Forest fire, Hurricane Sandy, Fukushima nuclear incidents, etc. The course is designed to expose and bring students to the discussion about great disasters in the past, but also to the discussion about issues that are representing threat to the country in the futujre such as climate change, cyber security, non-state actors operating in the territories of failed states, etc. Meets with PAD 5960. Prer., Graduate and nondegree graduate students only.

CJ 5965 - International Relations and U.S. Foreign Policy

3 Credits
This course relates to the international relations system that has been established since the Peace of Westphalia and establishment of sovereign states. The course will offer insights into concepts like diplomacy, balance of power and international organizations (League of Nations, United Nations, NATO, OSCE, etc.). Students will be exposed to the discussions about U.S. foreign policy primarily since the Monroe Doctrine, and the role of the U.S. in the international theatre especially during the Cold War, post-Cold War and post-9/11 periods. Prer., Graduate and nondegree graduate students only. Meets with PAD 5965.

CJ 5970 - Intelligence & Security Policymaking

3 Credits
This course will survey the roles and functions of intelligence agencies in support of American policymakers and operations, including an introduction to the "intelligence cycle." The course begins with a review of national-level intelligence entities, their evolution since 9/11, and the policymakers and departments they serve, before moving to intelligence, policymakers and executive agencies at the state and local levels. Intelligence support functions across a range of policy sectors will be examined, from tactical to strategic levels and current intelligence to long-term needs. Navigating the relationships and distance between intelligence agencies and policymakers to optimize the efficacy and integrity of intelligence support is a central topic, including oversight of intelligence. The course will also look at intelligence liaison and comparative intelligence systems. Prer., Graduate and nondegree graduate students only. Meets with PAD 5970.

CJ 5980 - Security and Emergency Management Leadership

3 Credits
Understanding the critical role a leader plays in security and emergency management is vital to successful operations. This course will seek to identify and develop the leadership requirements during times of crisis while identifying a strategic plan that is characterized by strengths, weaknesses, opportunities, and threats. The student will learn how to best organize preventive measures and use valuable resources that include the Incident Command System (ICS) to minimize the effect of catastrophic events. The class will also introduce the need for homeland security in the fight against both international and domestic terrorism along with natural disasters for a well-rounded approach to successful operations. Prer., Graduate and nondegree graduate students only. Meets with PAD 5980.

CJ 5985 - U.S. Intelligence Analysis in the 21st Century

3 Credits
This course will provide students with a broad survey of intelligence analysis issues and research, beginning with an examination of the role intelligence analysis plays in support of policymakers and security operations. This will include the various types of intelligence analysis required and the different kinds of relations that characterize the analyst-policymaker dynamic. Students will learn about cognitive biases and analytic pathologies, as well as the role of critical thinking skills and social science methodology in intelligence analysis. The Structured Analytic Techniques (or SATs) devised and used by the U.S. Intelligence Community are also introduced. Key issues include the analytic reforms of the last decade (and the efficacy of those reforms), measuring analytic performance and techniques, emerging intelligence challenges such as climate change, intelligence politicization, and the management of intelligence analysts, analytic groups, and the analytic process. Prer., Graduate and graduate nondegree students only. Meets with PAD 5985.

CJ 6029 - Legal Aspects of Forensic Science: Civil and Criminal

3 Credits
Criminal, civil, and family law will be discussed as they relate to forensic issues.

CJ 6032 - Investigation of Injury and Death

3 Credits
An exploration of concepts and principles related to investigation of injury and death. Forensic pathology and forensic autopsy procedures are included. Specialized topics in clinical practice such as medicolegal evidence, violence injury, and environmental pathology are included.

CJ 6033 - Crime Scene and Crime Lab

3 Credits
Introduces crime scene preservation, investigation, and the scientific tactics, procedures, and techniques employed by forensic experts. Attention will be given to homicide investigation and its central role in forensic examinations.

CJ 6034 - Criminal Profiling

3 Credits
Introduces the psychological, neurocognitive, social-sociological, and legal dimensions of forensics. Attention will be given to assessment and diagnosis of mental disorders, and the interface between the psychosocial effects of injury and illness and the judicial system. Criminal, civil, and family law applications of forensics will be considered.

CJ 6100 - Graduate Seminar in Forensic Science

3 Credits
Students select a topic specific to current research literature and learn how to read and evaluate that literature relative to scientific methods. Each student presents a research paper from a peer-reviewed journal and leads class in a discussion of the paper. Prer., Graduate and nondegree graduate students only.

CJ 6105 - Program Evaluation

3 Credits
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. Prer., Graduate students only. Meets with PAD 5350.

CJ 6115 - Grant Writing

3 Credits
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 find a funding source among various public and private sources and how to plan and write a proposal. Graduate students only. Meets with PAD 6115.

CJ 6125 - Grant Management

3 Credits
Designed for grant management for public and nonprofit agencies. Provides students with knowledge regarding the procedures required for proposal processing within organizations and the processes and policies entailed in managing grant awards. Addresses programmatic and financial aspects from project development including proposal and budget development, partnership/relationship building, implementation, accepting and managing grant and contract awards, grants-management system(s), reporting, record keeping, and accountability, audit requirements, ethics in the grants environment, audits and monitoring, through closeout procedures, and program evaluation. Course content also includes federal OMB circulars, basic human resource issues, project management strategies, and reporting obligations. Prer., Graduate students only; to include non-degree grads. Meets with PAD 6125.

CJ 6135 - Advanced Program Evaluation

3 Credits
Students design and carry out an evaluation of a program that incorporates current evaluation methods and principles derived from research, theory, practice wisdom, and their own experience. These occur within a field placement agency or their own workplace agency. Topics include purposes and types of evaluations at the program and direct practice levels, instrument design, data analysis, ethical issues, and organizational, political, social, and cultural factors affecting evaluation in diverse human contexts. Evaluation methods covered include single-system designs; client-focused evaluations; practitioner-focused evaluations; program (group-level) evaluations, including input, process, outcome evaluations; standardized and self-constructed instruments, data analysis and reporting. Prer., PAD 5350 or CJ 6105. Graduate students only; to include nondegree grads. Meets with PAD 6135.

CJ 6200 - Wrongful Convictions

3 Credits
Examines the causes of wrongful conviction by exploring the continuum of criminal justice errors ranging from persons who are falsely accused, arrested, prosecuted, tried, wrongly convicted and imprisoned, to death row inmates who are erroneously executed. This course will explore the causes of wrongful conviction from false confessions, the role of informants, prosecutorial misconduct, ineffectiveness of counsel, and racial bias. Prer., Graduate and nondegree graduate students only.

CJ 6600 - Special Topics in Criminal Justice

3 Credits
This highly specialized seminar addresses cutting-edge and emerging developments in the field of 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. Course may be taken for credit more than once provided subject matter is not repeated.

CJ 6910 - Field Study in Criminal Justice

3 Credits
For students who have not had practitioner experience, a full or part-time internship is required. Consent of the instructor. Prer., MCJ graduate students only; 12 hours of MCJ coursework.

CJ 6950 - Master's Thesis in Criminal Justice

3-6 Credits
Independent original research project supervised and evaluated by a thesis committee. Prer., MCJ graduate students only.

CJ 9500 - Independent Study Criminal Justice

1-6 Credits
Affords the student the opportunity to pursue creative research activities under the individual supervision of a full-time faculty member. No more than six hours of credit for independent study may be applied toward the MCJ degree. Prer., twelve hours of criminal justice course work. Prer., MCJ graduate students only; 12 hours of MCJ coursework. Instructor Consent Required.

CJ 9990 - Candidate for Degree
0 Credits
Candidate for Degree. Prer., MCJ graduate students only.

COMM - Communication

COMM 1000 - Contemporary Mass Media

3 Credits
Examines the mass media and their interaction with society, looking at journalism and the mass media in historical, intellectual, political, and social contexts.

COMM 1020 - Interpersonal Communication

3 Credits
A lecture-discussion approach to communication theory and its applications in everyday communication. Intended to give students a point of view and certain basic knowledge that will help them become better communicators regardless of their fields of specialization. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

COMM 1050 - Intro to Strategic Communication

3 Credits
This is a foundational course for the Strategic Communication track, addressing the theories and practices involved in non-profit organizations. Students will learn about communication theories and business practices and opportunities related to the fields of advertising and public relations.

COMM 1110 - Introduction to Leadership

3 Credits
An introductory exploration of the relationship between leadership theory and practice. The course examines both foundational and emerging leadership paradigms to provide the student a basic understanding of leadership.

COMM 1440 - Foundations of Leadership

3 Credits
Through the analytical and intellectual examination of core issues in the practice of leadership, this course provides students with an understanding of the fundamentals of leadership. Self-assessment and experiential activities will guide students through a personal exploration of their leadership and communication traits and style.

COMM 2010 - Oral Communication in the Workplace

3 Credits
Designed to develop and enhance oral communication skills in business and professional settings. Course includes four components: a) basics of business communication, including emphasis on diversity; b) interpersonal skills, including listening and job interviewing; c) working in groups, including problem solving and effective meetings; and d) preparing and delivering effective business presentations. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

COMM 2030 - Intro to Communication Theory

3 Credits
A study of human communication from its classical foundations in Aristotelian rhetoric through contemporary theory. Emphases includes communication theory as a discipline coupled with application via a written assessment to include review of scholarly published research. APA format is also taught and required. Prer., COMM 1020.

COMM 2100 - Public Speaking

3 Credits
A lecture-recitation approach to the basic principles of speechmaking. Intended to give students basic information for the preparation and delivery of a variety of public presentations. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

COMM 2150 - Male/Female Communication

3 Credits
A lecture-discussion approach to the study of contemporary theories and research in male/female communication. The course will involve reading and discussion in such areas as gender differences in self-perception, social and media images of men and women, language usage and nonverbal behavior differences between genders. Approved for LAS Social Science area requirement. GT-SS3. Prer., COMM 1020.

COMM 2240 - Principles of Organizational and Strategic Communication

3 Credits
An introduction to the field of organizational communication with emphasis on communication process, information flow, individual communication roles and group process for problem solving and decision making. The course combines a strong emphasis on relevant theories with practical application. Prer., COMM 1020 and COMM 1030.

COMM 2250 - Introduction to Film and Video

3 Credits
A study of the principles and techniques of film-making, including practical experience in planning, shooting, lighting, editing, and sound mixing. The study of film as visual language will be integrated with experience and making short video productions. Approved for LAS Humanities area requirement.

COMM 2270 - Sports & Studio TV Production

3 Credits
An introductory course in creative television production. Course is geared toward developing the writing, directing, and production skills necessary to make intelligent and imaginative programs in a variety of basic formats. Designed for majors and nonmajors, includes lecture and lab. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

COMM 2440 - Leadership Theory and Practice

3 Credits
Exploration of the relationship between leadership theory and practice. Examines both foundational and emerging leadership paradigms to provide students with an understanding of leadership theory and practice. Prer., COMM 1440.

COMM 2500 - Research Methods

3 Credits
Introduction to the nature of social scientific methods including research design, measurement, survey methods and introductory statistics. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., ID 1050.

COMM 2600 - Family Communication

3 Credits
The role of communication in long-term relationships as found in families. It is a descriptive approach designed to provide an understanding of the extent to which communication affects and is affected by the family.

COMM 2770 - Leadership Applications and Experiences

3 Credits
This course will focus on exploration of one?s personal leadership style with an emphasis on self-leadership, including examination of personal strengths using the Strength Finder model. Students will be expected to apply leadership communication approaches to the completion of a group leadership project. Prer., COMM 1440 and COMM 2440.

COMM 2900 - Writing for the Media

3 Credits
Fundamentals of news gathering and writing, news story forms.

COMM 3000 - UCCS Television Workshop: The Bluffs - Studio

1-3 Credits
Students produce the TV/Web series "The Bluffs." Students will audition actors, secure locations, complete pre-production, develop shot-plans, light, shoot, and record audio for the multi-episode production. This is a realistic, hands-on experience. Instructor consent required.

COMM 3010 - UCCS Television Workshop: The Bluffs - Writing

1-3 Credits
In this course students will pitch ideas for The Bluffs TV/Web series and then work together to create a step-outline of the story. Each student will then be assigned various scenes to write in screenplay format. Instructor consent required.

COMM 3100 - Directing for Film and Television

3 Credits
Students learn basic techniques of storytelling through the medium of digital film. Each student will direct a scene from a professional screenplay by creating a shot plan based on analysis of the script, the characters, and the scene. When not directing, students will provide crew support for camera, lighting, sound, etc. Taught in Fall only. Approved for LAS Humanities area requirement.

COMM 3150 - Communication Competency in Groups and Teams

3 Credits
Theory and practice in group discussion processes and decision making. Prer., COMM 1020 or consent of instructor.

COMM 3200 - Principles and Practice of Public Relations

3 Credits
Designed to provide majors and non-majors an introduction to the principles and practice of contemporary public relations. Students will increase their understanding and knowledge of the formation and implication of public opinion, and the elements and the practice of public relations in contemporary society.

COMM 3230 - Nonverbal Communication

3 Credits
Systematic and systemic study of nonverbal communication through various cues and contexts. Emphasis is placed on inquiry, review of published research, hypothesis development, pilot testing, interpretation of results, and implications via oral presentation.

COMM 3240 - Business and Professional Communication

3 Credits
Theory and practice in oral and written communication competency for business and the professions. Topics include presentational speaking, business and proposal writing, interpersonal communication in organizations, and communication trends in business organizations of the future. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Navigate; Writing Intensive. Prer., ENGL 1310 and ENGL 1410.

COMM 3250 - Principles and Practices of Advertising

3 Credits
Provides a broad overview of advertising from both a theoretical and practical standpoint. Students will learn about the structure, process, and outcomes of the advertising industry.

COMM 3270 - Digital Cinematography

3 Credits
A focus on the refinement of storytelling through digital cinematography and editing with an emphasis on studio lighting and advanced DSLR camera technique. Productions will vary in concept to offer students both high and low/no budget production scenarios. Topics include production planning and procedures, directing, lighting, and editing. Lecture and lab. Offered in fall only. Prer., COMM 2250 and COMM 2270.

COMM 3280 - Intercultural and Global Communication

3 Credits
An experiential examination of the philosophy, process, problems, and potentials unique to communication across cultural boundaries. Implications for personal and social innovations. Comparative study in communication in selected cultures. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Navigate.

COMM 3300 - Screenwriting

3 Credits
A course in writing for non-print media. Students will learn key elements of screenwriting, story structures, and exposition. Prer., COMM 2250, COMM 2900 or JOUR 2900, and ENGL 1310 or ENGL 1410.

COMM 3330 - Gender and Leadership

3 Credits
Explores leadership and its complex relationship with gender roles in terms of leadership style, context, and communication. Students will consider their own leadership potential, explored from historic, contemporary, and personal perspectives. Meets with COMM 5330.

COMM 3350 - Integrated Marketing Communication

3 Credits
This course analyzes the integrated marketing communication strategies used in contemporary communication practice. Students will gain advanced, in-depth knowledge of the tools, practices, and theory that informs this area of contemporary communication study and professional practice.

COMM 3400 - Digital Communication Technologies

3 Credits
Introduces students to digital tools available to disseminate messages. Students use advanced features of presentation software, create a business card that reflects their "brand," and create a final "personal project" to engage in social news spaces. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., COMM 1000.

COMM 3440 - Organizational Leadership

3 Credits
An examination of contemporary theory and practice pertaining to leadership communication in organizations, including consideration of the nature of transformational leadership characteristics. Approved for LAS Social Science area requirement.

COMM 3450 - The History of TV Programming

3 Credits
Examines the history of television through its programming. It will study genres such as the sitcom and hour-long drama, as well as principles of programming for broadcast and cable TV. Taught in Spring Pre-Term only.

COMM 3460 - Digital Film Editing

3 Credits
Students will develop an understanding and skills related to digital film editing using Final Cut Studio and other editing software. They will also learn concepts related to story creation through digital film editing theory.

COMM 3480 - Media and Health

3 Credits
This course examines the effects of media messages and technologies on individuals' health attitudes, beliefs, and behaviors, and addresses key considerations for constructing effective media-based health communication campaigns.

COMM 3500 - American Cinema

3 Credits
An introductory film course surveying American cinema as art, industry, and system of representation and communication. Students acquire knowledge of film history and genres, technical and critical vocabulary terms, and how popular genres extend to broader social context. Approved for LAS Humanities area requirement.

COMM 3550 - Professional and Personal Relationships

3 Credits
This course explores issues related to professional relationships (such as co-workers, supervisors and subordinates, creative pairs), personal relationships (such as friendships, romantics relationships), and relationships that can be both (such as workplace friendships or enemies). Meets with COMM 5550.

COMM 3650 - Mass Media and Society

3 Credits
Introduces students to mass communication theories from an empirical social science perspective. The interrelationships among mass media, individuals, and society are explored.

COMM 3770 - Ethical Leadership

3 Credits
An examination of the unique ethical leadership communication challenges faced by leaders, with an emphasis on building ethical competency through self-assessment, challenge, and feedback. Topics include virtue ethics, evil, forgiveness, moral theories, transformational leadership, ethical group problem solving, organizational integrity, and managing ethical diversity.

COMM 3800 - Strategic Communication Tactics

3 Credits
This writing-intensive course considers the tactical and strategic elements necessary for any public relations tool to be successfully developed and distributed to a target public. Students will learn techniques for media relations and skills for developing controlled tactics. Prer., COMM 2900 and COMM 3200 or consent of instructor.

COMM 3850 - Walt Disney: The Nexus of Communication and Imagination

3 Credits
Examines the life of one of the most influential people in American media history. Course will study the psychological, cultural, economic, and social forces that influenced Walt Disney's art and his ability to connect to a mass audience.

COMM 4000 - Rhetorical Dimensions in Communication

3 Credits
The theory of oral discourse is examined in light of classical thought and practice, historical development, and modern rhetorical processes. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Summit.

COMM 4010 - Privilege and Oppression in Popular Culture

3 Credits
Discussion-based course uncovering the way in which various identity groups (race, gender, class, sexual orientation, ability, and religion) are constructed and portrayed in media texts and the impact of such portrayals on social relations. Students will directly apply theory to an array of media texts, from film and television to music and comic books. Taught in Fall only. Prer., Junior/Senior or Grad only or instructor consent. Meets with COMM 6010.

COMM 4050 - Public Relations & Social Media

3 Credits
Focus is on social media use in public relations. Students will learn how social media are transforming public relations and mass communications; about the strategic use of certain tools; the importance of authenticity and transparency in practicing public relations online; and how to measure online efforts. Prer., COMM 3200.

COMM 4090 - Emerging Communication Technology

3 Credits
This course introduces students to the latest trends and advancements in the emerging technology landscape. The course focuses on theoretical models and frameworks that are relevant in emerging technology environments, as well as on the practical applications and implications of new communication technologies. Meets with COMM 6090.

COMM 4100 - Advanced Public Speaking

3 Credits
Advanced exploration of the theory, preparation, and delivery of public speeches with an emphasis on technology and public speaking. Approved for LAS Oral Communication requirement. Prer., COMM 2100 or equivalent. Meets with COMM 5100.

COMM 4110 - Communication Competence

3 Credits
In a seminar format, this course examines the historical development of various theories, present conceptualizations, and models of communication competency. Models are related to assessment in various contexts. Students develop and present a context-specific oral communication competency program. Meets with COMM 6100.

COMM 4140 - Media Effects

3 Credits
This course is an overview of a broad range of media theories that have examined media as a social force, that have explored factors affecting individuals' selection and perceptions of media messages, and that have studied how media affect viewers' attitudes, beliefs, and behaviors. Meets with COMM 6140.

COMM 4150 - Communication, Teaching, and Learning

3 Credits
Taught from both theoretical and practical perspectives, this course will provide teachers (and prospective teachers) with strategies for using appropriate communication in online and classroom formats. Includes methods for analyzing, developing, and facilitating the learning process. Meets with COMM 5150.

COMM 4160 - Communication, Training, and Development

3 Credits
Examines the field of training and development from both theoretical and pragmatic perspectives. Although the primary emphasis will be on corporate training and development, the course will also address broad principles relating to adult education in a variety of training contexts. Meets with COMM 6160.

COMM 4170 - Documentary Film and Video

3 Credits
Students will research, write and produce nonfiction films or videos. Students will develop their abilities to write and speak critically about historical and contemporary documentaries. Prer., COMM 2250, COMM 3270, and COMM 2900 or JOUR 2900.

COMM 4200 - Persuasion

3 Credits
Systematic and systemic study of the art of persuasion via analysis and application of rhetoric, ethics, motivation, classic and contemporary theory, campaign, and modern media. Emphasis is placed on group and collaborative practicum via oral presentations. Approved for LAS Social Science area requirement.

COMM 4220 - Creative Communication

3 Credits
Exploration of the relationship between creativity and communication. Topics include: theories and models of creativity and language, the creative process in groups and organizations, and creative influence. Approved for LAS Social Science area requirement.

COMM 4230 - Crisis Communication

3 Credits
This course offers an applied approach to crisis communication that is rooted in theory. Emphasizing the role of communication in organizations, we will use a proactive three-stage approach to crisis management: pre-crisis, crisis , and post-crisis.

COMM 4240 - Advanced Organizational and Strategic Communication

3 Credits
Major perspectives for the study of organizational communication, communication auditing procedures, and communication training and development practices. Prer., COMM 1020, COMM 2240, COMM 2500, and COMM 3240. Meets with COMM 5240.

COMM 4250 - Advanced Interpersonal Communication: Conflict Management

3 Credits
A lecture-discussion approach to the study of contemporary theories and research in conflict. Course will involve reading and discussion of both original research reports and secondary sources in such areas as perception, destructive communication, manipulative communication, and communication in developing and terminating relationships. Approved for LAS Social Science area requirement. Prer., COMM 1020.

COMM 4260 - Organizational Communication in the Global Environment

3 Credits
Theory-based examination of virtual and changing organizational forms, international/intercultural communication, telemediated organizational communication, and legal issues in communication in the workplace. Course additionally prepares students for both technical and human proficiencies necessary for the workplace of the future. Prer., COMM 2240.

COMM 4270 - Digital Film Production

3 Credits
Students work in teams to write, produce, and direct a short narrative digital film. There is a focus on the art and craft of storytelling, integrating all the writing, camera, lighting, sound, and directing elements learned in courses leading up to this one. Taught in Spring only. May be repeated up to a maximum of 6 hours. Prer., COMM 2250, COMM 2270, COMM 3270.

COMM 4280 - Multicultural Diversity and Workplace Communication

3 Credits
Examines the process and theory of communication and its application to a multicultural society. Explores cases of successes and failures in interpersonal, group, and mass communication and examines the process of verbal and nonverbal communication expressed in a variety of channels, systems, and codes. Meets with COMM 5990.

COMM 4290 - Sustainability and Corporate Social Responsibility

3 Credits
Examines the communication challenges and opportunities organizations face dealing with sustainability and corporate social responsibility. Course combines theoretical and applied perspectives, focusing on issues of: corporate governance, ethics, global corporate citizenship, stakeholder management and social auditing/reporting. Meets with COMM 5290.

COMM 4300 - Ethical Issues in Communication

3 Credits
An examination of ethical issues in communication contexts ranging from the personal to the professional, societal to mass media. Students will explore the complexity of ethical issues through readings, discussion, case studies, and observation.

COMM 4350 - Critical Analysis of Popular Culture

3 Credits
An introduction to a wide range of theoretical, analytical and methodological tools for interrogating media texts. Students will critically analyze an array of media texts from film and television, to music and comic books, through a variety of prisms: rhetorical, feminist, semiotic, ideological, historical, textual, cultural, and more. Taught in Spring only. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., Junior/Senior or instructor consent. Meets with COMM 6350.

COMM 4460 - Advanced Editing & Colorization

3 Credits
Students learn advanced editing and colorization techniques and apply them as they edit episodes of The Bluffs student-produced TV series. This class prepares students to work as professional editors. Prer., COMM 3460.

COMM 4500 - Media Management

3 Credits
Analysis of managerial problems in industrial, governmental, and nonprofit media organizations. Case studies, local managers, and outside readings will examine public relations/marketing, inventory, personnel, and legal aspects of managing a media facility. Prer., COMM 1000 and COMM 2270.

COMM 4510 - Quantitative Methods for Communication Research

3 Credits
Course covers introductory statistics, t-tests, simple Anovas, bivariate regression and measurements issues. Students are also introduced to the use of statistical software. Taught in Fall only. Prer., COMM 2500 and ID 1050. Meets with COMM 5510.

COMM 4690 - Internship in Communication

3-6 Credits
Supervised opportunities for obtaining knowledge and experience concerning the role of communication in the world of work. Prer., for Organizational Communication, Recording Arts and Media Management students only.

COMM 4750 - Communication Law

3 Credits
Examines legal principles of public communication including the First Amendment, defamation, privacy, political speech, commercial speech, obscenity, news gathering, intellectual property rights, and regulation of broadcast, cable and online communications. Meets with COMM 5750.

COMM 4770 - Leadership Communication in a Global Environment

3 Credits
Advanced exploration of contemporary leadership research and theory with an emphasis on global leadership communication issues. The course focuses on leaders' responsibilities, leadership challenges in dealing with diverse populations, and the relationship between leadership and culture.

COMM 4800 - Strategic Communication and Campaigns

3 Credits
This is the capstone course for the Strategic Communication track. This course is intended as the pinnacle of the strategic communication coursework, drawing on all of the practices and theories learned. Through analyses of campaign case studies and a final, comprehensive communication campaign assignment, students will gain advanced and in-depth knowledge of strategic communications. The case studies will highlight best practices in strategic communication, and the campaign will give students an opportunity to create a tangible product for a client of their choice. Prer., COMM 2500 and COMM 3200.

COMM 4840 - Health Communication: Interpersonal Perspectives

3 Credits
This course provides an overview of information, research, and issues related to interpersonal communication in health care settings. Specifically, we will analyze provider-patient-caregiver interactions and the organizations, systems, and cultures within which they occur. Meets with COMM 6840.

COMM 4900 - Spec Topics in Communication

1-3 Credits
Advanced exploration of timely topics and issues related to communication in various contexts. Topics vary from semester to semester. May be taken up to two times for credit with permission of department chair. Prer., Vary from topic to topic.

COMM 4950 - Seminar in Leadership and Organizational Change

3 Credits
A dynamic and practical project-based course focusing on contemporary leadership approaches and the demands the current environment of change and innovation place on organizational leadership. Approved for Compass Curriculum requirement: Summit. Prer., COMM 1440, COMM 2440. Meets with COMM 5950.

COMM 5010 - Introduction to Graduate Studies: The Communication Discipline and Theories

3 Credits
This course prepares students for the Communication graduate program. A foundation for understanding the nature and structure of the communication discipline and its theoretical traditions is provided. Critical thinking, research, writing, and speaking for success in the program are emphasized. Prer., Graduate students only.

COMM 5020 - Quantitative Research Methods

3 Credits
Introduces students to quantitative, qualitative, and critical cultural research methods. Surveys basic concepts of theoretical and empirical research such as conceptualization, operationalization, and measurement, and introduces a variety of methodologies, including surveys, experiment, and content analysis. Prer., Graduate students only.

COMM 5050 - Public Relations & Social Media

3 Credits
Focus is on social media use in public relations. Students will learn how social media are used in public relations and mass communications; about the strategic use of certain tools; the importance of authenticity and transparency in practicing public relations online; and how to measure online efforts.

COMM 5100 - Advanced Public Speaking

3 Credits
Advanced exploration of the theory, preparation, and delivery of public speeches with an emphasis on technology and public speaking. Prer., COMM 2100 or equivalent. Meets with COMM 4100.

COMM 5150 - Communication, Teaching, and Learning

3 Credits
Taught from both theoretical and practical

perspectives, this course will provide teachers (and prospective teachers) with strategies for using appropriate communication in online and classroom formats. It will include methods for analyzing, developing, and facilitating the learning process. Meets with COMM 4150.

COMM 5220 - Creative Communication

3 Credits
Exploration of the relationship between creativity and communication. Topics include: theories and models of creativity, creativity and language, the creative process in groups and organizations, and creative influence.

COMM 5240 - Advanced Organizational and Strategic Communication

3 Credits
Explores major theoretical perspectives for the study of organizational communication, examines culture and communication relationships, describes the role and responsibilities of organizational communication professionals, and surveys current research in organizational communication. Students make application of organizational communication principles to a variety of case studies and organizational experiences. Meets with COMM 4240.

COMM 5290 - Sustainability and Corporate Social Responsibility

3 Credits
Examines the communication challenges and opportunities organizations face dealing with sustainability and corporate social responsibility. Course combines theoretical and applied perspectives, focusing on issues of: corporate governance, ethics, global corporate citizenship, stakeholder management and social auditing/reporting. Meets with COMM 4290.

COMM 5330 - Gender and Leadership

3 Credits
Explores leadership and its complex relationship with gender roles in terms of leadership style, context, and communication. Students will consider their own leadership potential, explored from historic, contemporary, and personal perspectives. Meets with COMM 3330.

COMM 5370 - Sociology of Media and Popular Culture

3 Credits
This course draws on cultural theory and history to explore the interdisciplinary field of media studies from a critical sociological perspective. The ultimate goal of the course is to critically interrogate a large part of students' lives that is typically taken for granted. Meets with SOC 5370.

COMM 5550 - Professional and Personal Relationships

3 Credits
This course explores issues related to professional relationships (such as co-workers, supervisors and subordinates, creative pairs), personal relationships (such as friendships, romantic relationships), and relationships that can be both (such as workplace friendships or enemies). Meets with COMM 3550.

COMM 5690 - Problems in Radio-Television and Film

1-3 Credits
Opportunity for students to explore, upon consultation with the instructor, areas in radio-TV and film which the normal sequence of offering will not allow. Prer., Consent of instructor.

COMM 5700 - Instructional Media

3 Credits
Comprehensive examination of communication and learning theory, instructional design, and media production.

COMM 5750 - Communication Law

3 Credits
Examines legal principles of public communication including the First Amendment, defamation, privacy, political speech, commercial speech, obscenity, news gathering, intellectual property rights, and regulation of broadcast, cable and online communications. Meets with COMM 4750.

COMM 5770 - Leadership Communication in a Global Environment

3 Credits
Advanced exploration of contemporary leadership theory and research with an emphasis on global leadership communication issues. Strategic communication methods are investigated through case analysis with emphasis on the relationship between leadership and culture, leadership style, transformational leadership, charisma, corporate culture, leadership challenges in dealing with diverse populations, ethical leadership and followership, and the global leadership challenges of the future.

COMM 5880 - Topics in Public Rhetorics

3 Credits
Advanced, in-depth study of the rhetoric of a particular public issue. Issues, theoretical materials, historical moment, and readings shift with topic. May be taken two times as long as topics are different. Prer., ENGL 1310, ENGL 1410. Meets with ENGL 4880.

COMM 5950 - Seminar in Leadership and Organizational Change

3 Credits
A dynamic and practical class offering assessment activities and dialogues focusing on the demands the current environment of change and innovation place on organizational leadership. Meets with COMM 4950.

COMM 5990 - Multicultural Diversity and Workplace Communication

3 Credits
It will examine the process and theory of communication and its application to a multicultural society. It will explore cases of successes and failures in interpersonal, group, and mass communication. It will also examine the process of verbal and nonverbal communication expressed in a variety of channels, systems, and codes. Meets with COMM 4280.

COMM 6010 - Privilege and Oppression in Popular Culture

3 Credits
Discussion-based course uncovering the way in which various identity groups (race, gender, class, sexual orientation, ability, and religion) are constructed and portrayed in media texts and the impact of such portrayals on social relations. Students will directly apply theory to an array of media texts, from film and television to music and comic books. Prer., Junior/Senior or Grad only or instructor consent. Meets with COMM 4010.

COMM 6020 - Communication Research Practicum

1-3 Credits
A project-based graduate course designed to involve students in communication research and/or creative work from the proposal stage

through conference presentation/publication/production. Prer., COMM 6010 and/or instructor consent.

COMM 6030 - Statistical Data Analysis

3 Credits
An introduction to quantitative data analysis techniques commonly employed in the field of communications and related disciplines. These techniques included t-tests, analysis of variance, correlation and regression, and factor analysis. Prer., Graduate standing.

COMM 6040 - Qualitative Research Methods

3 Credits
Explores the practice and application of qualitative research methods, such as participant observation, interviewing, and textual or content analysis, for the study of communication phenomena. Prer., Graduate students only.

COMM 6050 - Communication Graduate Capstone Experience

3 Credits
Facilitates the integration and application of students' learning and studies in all Communication graduate courses. Students are prepared for their comprehensive examinations, develop a research-based capstone project, and present a conference-quality scholarly paper. Prer., Graduate standing.

COMM 6090 - Emerging Communication Technology

3 Credits
This introduces students to the latest trends and advancements in the emerging technology landscape. The course focuses on theoretical models and frameworks that are relevant in emerging technology environments, as well as on the practical applications and implications of new communication technologies. Meets with COMM 4090.

COMM 6100 - Communication Competence

3 Credits
In a seminar format, this course examines the historical development of various theories, present conceptualizations, and models of communication competency. Models are related to assessment in various contexts. Students develop and present a context-specific oral communication competency program. Meets with COMM 4110.

COMM 6140 - Media Effects

3 Credits
This course is an overview of a broad range of media theories that have examined media as a social force, that have explored factors affecting individuals' selection and perceptions of media messages, and that have studied how media affect viewers' attitudes, beliefs, and behaviors. Meets with COMM 4140.

COMM 6160 - Communication, Training, and Development

3 Credits
Examines the field of training and development from both theoretical and pragmatic perspectives. Although the primary emphasis will be on corporate training and development, the course will also address broad principles relating to adult education in a variety of training contexts. Meets with COMM 4160.

COMM 6250 - Problems in Communication

1-6 Credits
Explores various graduate-level subjects in communication not normally offered on a regular basis. Consult Course Search on the UCCS website or the MyUCCS Portal for current offerings and prerequisites.

COMM 6350 - Critical Analysis of Popular Culture

3 Credits
An introduction to a wide range of theoretical, analytical and methodological tools for interrogating media texts. Students will critically analyze an array of media texts from film and television, to music and comic books, through a variety of prisms: rhetorical, feminist, semiotic, ideological, historical, textual, cultural, and more. Grad only or instructor consent. Meets with COMM 4350 and SOC 5350.

COMM 6510 - Intermediate Quantitative Methods for Communication Research

3 Credits
An applied quantitative methods course with computer applications for students in the social sciences and specifically in communication. Stresses everyday issues confronting social scientific researchers such as reliability, validity and selection of the most appropriate statistics for a given application. Specific topics addressed include: Anova, Ancova, parametric and nonparametric measures of association, factor analysis, and multiple regression. Prer., COMM 4510 or COMM 5510.

COMM 6840 - Health Communication: Interpersonal Perspectives

3 Credits
This course provides an overview of information, research, and issues related to interpersonal communication in health care settings. Specifically, we will analyze provider-patient-caregiver interactions and the organizations, systems, and cultures within which they occur. Meets with COMM 4840.

COMM 7000 - Masters Thesis

1-9 Credits
Masters Thesis

COMM 9400 - Independent Study in Communication

1-6 Credits
Individually developed and implemented research projects in communication. A student desiring independent study credit must present a well-defined topic for research to the faculty. Prer., COMM 1020, COMM 1030 and consent of instructor.

COMM 9500 - Independent Study in Communication - Graduate

1-6 Credits
Individually developed and implemented research projects in communication. a student desiring independent study credit must present to the faculty a well-defined topic for research. Prer., Graduate status.

COMM 9990 - Candidate for Degree

0 Credits
Candidate for Degree

COUN - Counseling

COUN 2000 - Introduction to Human Services

3 Credits
An introductory overview of the essential elements and principles of the field of human services. Topics include history of helping, the relationship between client and helper, and working in human service settings.

COUN 2500 - Introduction to Addictions

3 Credits
This course examines the impact of substance abuse and addiction on individuals as well as

the prevention and treatment of addiction, by understanding the physiological and psychological impact of drugs of abuse. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

COUN 2990 - Introduction to Counseling Skills

3 Credits
Prepares students to employ helping skills in their professional and personal relationships. Instructor demonstrates and students practice basic skills such as active listening, open-ended questions and reflection of feelings. Must be sophomore in good standing.

COUN 3000 - Intracultural Socialization Patterns

3 Credits
Topics covered will help students develop intercultural sensitivity and competence through self-awareness of cultural differences, and an understanding of the impact of prejudice, discrimination, and oppression on helping professionals and the diverse populations they serve. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

COUN 3100 - Career Planning

3 Credits
This course provides undergraduate students at UCCS with career planning and job search skills which will serve them throughout their work lives. The course is open to all academic majors and those students who are undecided in their career pathway. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Prer., Undergraduate students only.

COUN 3110 - Interpersonal Communication, Interviewing and Mediation Skills

3 Credits
Students in the human service professions will learn interpersonal skills, self-awareness, communication, negotiation and conflict resolution skills. This course will help students understand the power of effective communication and barriers impacting communication. Conflict, anger, resistance, control and power will be discussed.

COUN 3400 - Ethics, Values and Case Management

3 Credits
Provides an introductory overview of the essential elements and principles of ethics and case management in the field of human services. Topics include history of helping, the relationship between client and helper, and ethical issues when working in human service settings.

COUN 3500 - Group Dynamics and Group Process

3 Credits
This course includes studies that provide a broad understanding of group formation/development, group dynamics, and group leadership styles. Undergraduate students only - All levels.

COUN 4000 - Intro to Counseling Profession

3 Credits
Provides an overview of the field of counseling and human services. Students will learn about career opportunities in this field and the roles and functions of professional counselors in various settings. The history of the field and future trends will be presented.

COUN 4070 - Adventure Education and Experiential Learning

3 Credits
This training is designed for educators and community leaders wanting to develop and enhance their positive group facilitation skills and leadership strategies. This course will provide experiential ideas for developing group trust, enhancing teamwork, and encouraging cooperation. Meets with COUN 5070.

COUN 4500 - Wellness, Resilience and Emotional Intelligence

3 Credits
Focuses on the personal dispositions necessary to provide effective service in a helping profession. Specific areas include: self-awareness, emotional intelligence, communication, emotional management, wellness, and decision making. Students will learn strategies for navigating the dynamics of service organizations. Approved for Compass Curriculum requirement: Navigate. Prer., Juniors and Seniors only.

COUN 4830 - Workshop in Professional Counseling

1-3 Credits
Explores selected topics in-depth in professional counseling including conflict resolution, human resource development, child abuse or topics in counseling research. Counts toward master's degree with advisor approval only. Prer., upper division standing.

COUN 4950 - Practicum in Human Services

3 Credits
Provides an introductory overview of the key issues that students encounter in field work. Topics include theoretical content areas such as cultural competence and understanding the supervision relationship, as well as personal challenges such as taking care of oneself as a practicum student and as a professional. Prer., Junior or Senior standing.

COUN 5000 - Introduction to Counseling and Human Services

3 Credits
Provides an overview of the field of counseling and human services. Students will learn about career opportunities in this field and the roles and functions of professional counselors in various settings. The history of the field and future trends will be presented.

COUN 5010 - Theories and Techniques of Individual Counseling

3 Credits
Major theories of individual counseling and their philosophic bases will be studied in this course. Techniques used in the application of theory to practice in counseling and consultation will be presented. Basic and advanced counseling skills will be introduced in this course and practiced in COUN 5020 taken concurrently. Prer., Admitted to counseling program.

COUN 5020 - Laboratory in Individual Counseling

3 Credits
Provides basic interviewing, influencing and counseling microskills and characteristics of counselors and counselees that impact the counseling process. Students engage in self-examination of characteristics that may affect them as professional counselors. Core counseling skills and competencies are practiced and refined. Prer., Admission to DCHS program. Coreq., COUN 5010.

COUN 5040 - Human Growth & Development

3 Credits
Provides a broad understanding of life span theories of human development; understanding of the nature and needs of individuals at all developmental levels; normal and abnormal human behavior indicators; personality theory and development; and learning theory with cultural contexts. Prer., Graduate students only.

COUN 5050 - Introduction to Play Therapy

3 Credits
Provides a developmental and systems approach to play therapy with content areas including history, theory, techniques, methods applications to special settings or populations. Also included is sand-play therapy which is based on the work of Jung.

COUN 5070 - Adventure Education and Experiential Learning

3 Credits
This training is designed for educators and community leaders wanting to develop and enhance their positive group facilitation skills and leadership strategies. This course will provide experiential ideas for developing group trust, enhancing teamwork, and encouraging cooperation. Meets with COUN 4070.

COUN 5090 - Spiritual Dimensions of Counseling

3 Credits
An experiential and analytic investigation of our spiritual dimension as persons, and of methods of assessment and intervention regarding spiritual and religious issues in counseling and psychotherapy.

COUN 5100 - Theories and Techniques of Group Counseling

3 Credits
This course provides a comprehensive understanding of group development, stages, group dynamics, leadership styles and counseling theories across various settings. Core group facilitation skills and techniques will be studied in this course and practiced in COUN 5110. Prer., Admission to DCHS. Coreq., COUN 5110

COUN 5110 - Laboratory in Group Counseling

3 Credits
This course provides the student with group counseling experiences as both a member and leader. Students will develop and apply group counseling skills and techniques and learn to evaluate the effectiveness of various group facilitation strategies. Students engage in self-examination of characteristics that may affect them as professional counselors. Prer., Admission to DCHS. Coreq., COUN 5100

COUN 5120 - Practicum in Professional Counseling

3 Credits
Provides students with experience in counseling and consultation. Introduces the counselor and client characteristics that may affect the counseling process. Students complete 100 clock hours of supervised field experience of which 40 hours must be in direct service to clients. Prer., COUN 5010, COUN 5020, COUN 5100, COUN 5110 and admission to CHS program.

COUN 5130 - Theories and Techniques of Marriage, Couples, and Family Counseling

3 Credits
This course provides the student with a family systems approach emphasizing the foundational theories and techniques of marriage, family, couples, and relationship counseling. Students will learn to think systemically and gain awareness, insight and skills related to working with a multitude of family structures. Prer., Admission to DCHS.

COUN 5135 - Laboratory in Marriage, Couples and Family Counseling

3 Credits
This course provides the student with marriage, couples and family counseling experiences as both a member and leader. Students will develop and apply systems counseling skills and techniques. Students engage in self-examination of family of origin and multigenerational family patterns. Prer., Admission to DCHS, Coreq., COUN 5130.

COUN 5140 - Advanced Theories and Techniques of Family Counseling

3 Credits
Examines the following theories of family counseling: strategic, structural, experiential, object relations, communication and behavioral. Students will become familiar with the differences and similarities of these theories as well as consider the techniques for change associated with each. Prer., COUN 5130 or consent of instructor.

COUN 5150 - Conflict Resolution Training

3 Credits
This workshop course presents a win-win approach to conflict resolution that can be utilized with individuals, families, groups and organizations. Participants will be asked to examine their personal conflict resolution strategies and change any win-lose strategies into win-win strategies. Prer., Open only to students enrolled in Counseling and Human Services program.

COUN 5160 - Field Work in Counseling and Leadership

1-6 Credits
Provides students with experience in counseling and consultation. Introduces the counselor and client characteristic that may affect the counseling process. Students complete 400 clock hours of supervised field experience over 3 semesters. Course may be repeated for credit. Prer., Admission to Counseling and Leadership program.

COUN 5170 - Executive and Leadership Coaching

2 Credits
This course is designed to enhance the skills of counseling students and Air Force Officers. When working with clients or Cadets to address personal issues, coaching skills can be utilized, once those issues have been addressed, as the next step in the process which can then propel the client or Cadet toward a path of success.

COUN 5190 - Psychology of College Students

3 Credits
An orientation to developmental studies in personality, social and health domains of the college student. Focus is on age-related stresses and coping skills. Prer., Admission to the Counseling Program.

COUN 5200 - Adv Seminar in Student Affairs

3 Credits
Taken during the final semester of the student's program, requires the completion of an independent study on a topic of particular interest or concern to Student Affairs. The topic, and the method of conducting the study, will be mutually agreed upon by the faculty member and student. In-depth exploration of the topic will require the students to synthesize what they have learned in the program and demonstrate the ability to apply it.

Prer., COUN 5060, COUN 5080, COUN 5190 admissions to the Counseling Program in Student Affairs.

COUN 5210 - Characteristics of the Effective Leader

3 Credits
Examines the important individual characteristics of the effective leader. Emphasizes the leader's self-awareness and adaptability as well as other critical personality variables. Admission to the Counseling and Leadership program.

COUN 5240 - Executive Coaching and Leadership

2 Credits
This course is designed to enhance the skills of counseling students and Air Force officers. When working with clients or Cadets to address personal issues, coaching skills can be utilized, once those issues have been addressed, as the next step in the process that can then propel the client or Cadet toward a path of success.

COUN 5250 - Leader and Leadership Development

3 Credits
Leadership principles, change process research, and role functions of Air Force Officer Commanders. Prer., Admission to Counseling and Leadership program.

COUN 5260 - Practicum in Counseling and Leadership

1 Credit
Provides students with experience in counseling and leadership and introduces the counselor and client characteristics that may affect the counseling process. Students complete 100 clock hours of supervised field experience of which 40 hours must be in direct service to clients; the balance is indirect service. May be repeated 3 times. Prer., Concurrent with counseling core courses.

COUN 5270 - Advanced Techniques in Cadet Counseling

3 Credits
This course provides advanced training in specific counseling techniques for AOC's. It includes detailed intervention plans for various issues relevant to the cadets at the Academy. Students develop a detailed case study in problem areas, visit local agencies and conduct a literature review of relevant adolescent issues. Prer., Admission to Counseling and Leadership Program.

COUN 5280 - Teams and Organizational Leadership

3 Credits
This course extends and broadens the concept of "social capital" in its emphasis on teams and team processes. It also addresses institutional or organizational capital. This course is the final course in the leadership sequence in the Counseling and Leadership program. Prer., Admission to Counseling and Leadership program.

COUN 5290 - College Student Development

3 Credits
This course reviews developmental theories related to both understanding and effectively counseling college age individuals. Students will examine personality, social and wellness domains of the developing college student. Specific topics related to specific developmental and psychological stressors for college age individuals will be addressed. Must be admitted to Counseling and Leadership. Prer., Successful completion of COUN and LEAD core classes.

COUN 5300 - Laboratory in Marriage & Family Counseling

3 Credits
Provides students with skills in rapport building; information gathering and giving; structuring the session; reflecting and summarizing content and feeling; self disclosure; confrontation; and session closure for use in professional counseling sessions. Prer., COUN 5010 and COUN 5110. Coreq., COUN 5130.

COUN 5330 - Issues, Ethics and Trends in Professional Counseling

3 Credits
This course covers professional roles and functions, goals and objectives, organizations and associations, preparation standards and credentialing, and history and trends in the counseling profession. Developing knowledge of the professional code of ethics, laws, and other guidelines related to the practice of professional counseling, and acquiring proficiency in making ethical decisions, will be emphasized.

COUN 5350 - Adult Leadership Development

3 Credits
Explores the development of leadership, emphasizing entry level leadership skills for college-aged students. It surveys social and peer group influences, strategies for developing character, diversity issues and leading change in a college environment. Prer., Admission into the Counseling program.

COUN 5400 - Research in Counseling and Human Services

3 Credits
A comprehensive study of types of research, basic statistics, research project development, program evaluation, needs assessment, and ethical and legal considerations. A thorough review of the recent research literature in the student's area of emphasis is required for this course. Prer., COUN 5010 and COUN 5020 or consent of instructor.

COUN 5410 - Measurement and Appraisal

3 Credits
This course provides a comprehensive study of educational and psychometric theories and approaches to appraisal, data collection and evaluation methods. Validity and reliability of instruments, psychometric statistics, variables influencing appraisal and interpretation of test results will be addressed. Ethical use of measurement instruments, multicultural considerations, and strategies for consultation will be included. Prer., Admission to DCHS.

COUN 5430 - Career Development

3 Credits
This course offers a comprehensive study of career development theories; sources for obtaining occupational, educational, and labor market information; relational, cultural, and other factors that affect career development; assessment tools, techniques, and program development for career counseling, guidance, and education, and for lifestyle and career decision making, including applications for special groups and diverse populations.

COUN 5440 - Advanced Psychopathology and Diagnosis

3 Credits
An intensive survey of the major theories, research findings and behavioral characteristics associated with mental illness and behavior disorders. Requires thorough working knowledge of the DSM IV and related diagnostic tools. Prer., COUN 5130 or instructor consent.

COUN 5500 - Advanced Play Therapy

3 Credits
Builds on the basic concepts presented in Introduction to Play Therapy and includes using play to help children and families communicate through symbols, metaphors and stories. Puppet play, the hero/heroine's journey, family art and games are highlighted. Prer., COUN 5050 or consent of instructor.

COUN 5510 - Principles of Addiction Treatment

2 Credits
This course examines the etiology of addiction; various models and effective treatment methods supported by current research. Assessment of co-occurring disorders and addiction counselor competencies will be investigated and applied to adults and adolescents.

COUN 5520 - Infectious Diseases in Addiction Treatment

1 Credit
This course examines the complex relationship between a client's use of substances, lifestyle choices, and physiological health. Assess the importance of disease screening, exploring client risk, and educating clients about disease prevention.

COUN 5530 - Theory and Techniques of Motivational Interviewing

2 Credits
This course examines the stages of change, and motivational interviewing skills necessary for creating positive change. Includes implementation techniques and training designed to increase client engagement, retention, compliance and improving treatment outcomes.

COUN 5550 - Practice of Crisis Counseling, Trauma, and Disaster Work

3 Credits
Counseling strategies and techniques for dealing with individual, group, and organizational crisis in a variety of settings. Types of crises include suicide, domestic violence, sexual assault/rape, school and community violence, military trauma, terrorism, and natural disaster. Prer., Graduate students only.

COUN 5560 - Foundations of Addictions

3 Credits
An introduction to the psychology of the addiction process and the relationship of family to that process. This course will address the etiology of treatment of addictive behaviors. Theories linked with addiction will be evaluated critically with an emphasis on developing effective intervention strategies, recovery and relapse prevention.

COUN 5570 - Play Therapy & Child Counseling

3 Credits
An overview of the essential elements and principles of counseling children and adolescents primarily utilizing play therapy, including history, theories, modalities, techniques, applications, and skills. Significant emphasis will be placed on the treatment of child and family trauma following war, natural disaster, and other crises. Prer., Graduate students only.

COUN 5580 - Sexuality in Counseling

3 Credits
Examines human sexuality from historical, political, religious, economic, social, and cultural perspectives. Sexual norms, roles, and behaviors will be discussed, analyzed, and deconstructed to enhance the awareness, knowledge, and skills of counseling professionals. Prer., Graduate students only.

COUN 5600 - Leading Diversity

3 Credits
Introduces diversity-based leadership concepts and processes to prepare students to incorporate issues of diversity effectively in teams and organizations. Through directed readings, interactive exercises, and class discussions, students will be equipped to provide effective leadership to diverse organizations.

COUN 5700 - Internship in School Counseling

1-3 Credits
To complete the school counselor program the student must complete a 600 clock hour internship in an appropriate school setting under the supervision of a licensed school counselor. The intern will perform a variety of activities that a regularly employed school counselor would be expected to perform. The intern must complete 240 hours of direct service as part of the 600 clock hour internship. Direct service may include but is not limited to individual counseling, group work, developmental classroom guidance and consultation with faculty, staff and parents. May be repeated for credit three times. a minimum of two semesters of internship is required for graduation from the CHS program. Prer., Completion of core sequence and instructor consent.

COUN 5720 - Internship in Clinical Mental Health Counseling

1-6 Credits
Graduation from the counseling and human services program requires students to complete an appropriately supervised internship of six hundred (600) clock hours. The internship must include a minimum of two hundred forty (240) hours of direct service work with clientele appropriate to the program emphasis area. Students must be enrolled in the internship while working toward completion of this requirement. Direct service may include but is not limited to individual counseling, group work, developmental classroom guidance and consultation with faculty, staff and parents. May be repeated for credit three times. a minimum of two semesters of internship is required for graduation from the CHS program. Prer., Completion of core sequence and instructor consent.

COUN 5730 - Internship in Core Leadership

3 Credits
Elective in the Counseling and Human Services Department for the USAF Academy cohort that provides teaching opportunities at the Air Force Academy. Open only to grad students. Prer., Grad only, admission to the USAFA counseling cohort.

COUN 5740 - Internship in Student Affairs

3 Credits
To complete the student affairs in higher education program, students must complete a 600 hour internship; 40% in direct service, 60% indirect. May be repeated three times. Prer., Completion of core courses and instructor consent.

COUN 5750 - Internship in Counseling and Leadership

3 Credits
To complete the Leadership track in the Counseling program students must complete a 300 hour Internship; 40% direct service, 60% indirect. May be repeated 3 times to meet licensure requirements. Prer., COUN core courses.

COUN 5800 - Roles and Functions of the School Counselor

3 Credits
Studies include but are not limited to the following: history/philosophy of the school counseling profession; ethical standards and laws; developmental programming; comprehensive guidance services; standards-based services; surveys/interviews to design, implement, and manage/evaluate a comprehensive developmental standards-based program.

COUN 5810 - Organization/Administration of the School Counseling Program

3 Credits
Studies include, but are not limited to: learning theories, classroom motivation/management, and effective instruction; interrelationships/collaborations with school and community; characteristics and interventions for at-risk youth; special education process; educational strategies for assessment, transition, and advising students; and program leadership/advocacy. Prer., COUN 5800 or instructor consent.

COUN 5830 - Topics in Counseling

1-4 Credits
Explores selected topics in professional counseling in depth including conflict resolution, human resource development, or advanced topics in counseling research. Prer., Consent of instructor.

COUN 5840 - Adv Workshop in Counseling

3 Credits
In-depth study of selected counseling topics based on directed readings. For example, examination of original writings of major counseling theorists.

COUN 5850 - Advanced Theories and Techniques of Marriage Counseling

3 Credits
Presents marriage counseling from perspectives of psychodynamic, behavioral and systems theories. Introduces mate-selection, premarital counseling, marriage enrichment, sex therapy, counseling blended families and divorce mediation. Prer., COUN 5130.

COUN 5860 - Social and Cultural Foundation of Professional Counseling

3 Credits
Examines socioeconomic trends in society including sources of conflict and methods of conflict resolution, trends and changes in human roles, multicultural and pluralistic trends including characteristics and concerns of subgroups, and major societal concerns including discrimination on the basis of human characteristics such as age, race, religious preference, physical condition, sexual preference, ethnicity or gender, and methods for alleviating these concerns.

COUN 5870 - School Counseling Techniques

3 Credits
Course teaches counselors practical skills in the school setting. Studies include but are not limited to: applying counseling theories to the school setting; professional advocacy practices/techniques for diverse student populations; and essential services school counselors provide. Prer., COUN 5800 and COUN 5810.

COUN 5880 - Gender Issues in Counseling

3 Credits
Course will explore personal and cultural biases about gender, ethnicity, stereotypes and cultural differences. Discussion, research and investigation into socialized bias, prejudice, and sexual harassment concerns will offer students an expanded view of gender issues prevalent in our society.

COUN 5890 - Reflections on Culture

3 Credits
To become a culturally responsive educator it is important to consider how one's own cultural self awareness impacts educational leadership, teaching, and counseling. In this activity-based course students will reflect on their own biases and cultural awareness.

COUN 5920 - Role and Function of the Community Counselor

3 Credits
Broad examination of the context of the mental health movement with focus on the role and functions of the community counselor. Students will engage in studies that examine the clinical, administrative and specialized skills that community counselors must develop to serve as effective members of the health care team.

COUN 5930 - Sexual Addiction

3 Credits
Students gain understanding and clinical knowledge related to sexual addiction including: definition of sexual addiction, assessment, six typologies of sex addiction, behavioral treatment plans, and more. Course is only offered online.

COUN 5950 - Roles and Functions of the Clinical Mental Health Counselor

2 Credits
Broad examination of the context of the mental health movement with focus on the role and functions of the clinical mental health counselor. Students will engage in studies that examine the clinical, administrative, and specialized skills that clinical mental health counselors must develop to serve as effective members of the health care team. Graduate Students Only. Prer., Acceptance to Counseling Program.

COUN 5960 - Psychopharmacology

1 Credit
This course will provide counselors with a foundation in psychopharmacology to work effectively with clients taking psychotropic medications and to collaborate with prescribers. Content will include basic neuroanatomy and neurophysiology, pharmacokinetics and pharmacodynamics, history, efficacy, and current standards of pharmacotherapy. Graduate Students Only.

COUN 5970 - Advanced Pharmacology

1 Credit
This course explores the influence of contextual variables on addiction and recovery from a neuropsychological and cultural framework. Changes to the brain, the brain's ability to recover, medical problems, and the use of pharmacological assists in recovery will be examined. Prer., COUN 5950.

COUN 6050 - Counselor Supervision

3 Credits
Students will become familiar with models of counseling supervision as well as critically review current research and theory relevant to the practice of clinical supervision in carious counseling disciplines. Students will provide individual or group supervision for Master's level students or current employees and receive guidance and feedback regarding their supervision practices. Requisites: Master's degree with two years of counseling experience preferred. Approval of instructor required. Grad only.

COUN 6060 - Advanced Practicum in Professional Counseling

3 Credits
This course is designed for current counseling professionals and will focus on developing and refining counseling knowledge and skills as well as the integration of theory, practice, and empirically effective counseling strategies. Students will further develop assessment and diagnosis skills, enhance case conceptualization and intervention knowledge and practices, enhance ethical and multicultural competence, and increase awareness of personal attributes which impact the development and maintenance of the "working alliance" with clients or students. Prer., Master's degree in counseling or a counseling-related program; CACREP-accredited program preferred.

COUN 6111 - Study Abroad in Counseling

3 Credits
In this course students will immerse themselves in an international study of counseling through an overseas experience. Course topics include the history, culture, education, and counseling practices of the chosen country.

COUN 6500 - Introduction to College Teaching and Learning

3 Credits
This course addresses a variety of approaches, perspectives, and techniques for learning and teaching in higher education. Students will develop theoretical and hands-on skills and strategies for effective course development and delivery while incorporating their own personal teaching style. Prer., AOC students, PhD students, or instructor approval.

COUN 9500 - Independent Study in Counseling

1-4 Credits
Independent investigation of topics of specific interest to the student and completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision by the student and faculty member. Meeting times, expectations and evaluation are arranged with the faculty member. Students must have written consent of instructor to participate. Students using the independent study for degree purposes should also have written consent of their advisor. Prer., Consent of instructor.

COUN 9990 - Candidate for Degree

0 Credits
To be used only by those students who will not be registered for coursework or independent study during the semester in which the student will take comprehensive examinations for the master's degree. Registration as candidate for degree will fulfill the requirement for registration during the semester in which comprehensives are taken. No credit will be earned and the fee is that of a one-semester credit hour course. Prer., Consent of advisor is required.

CS - Computer Science

CS 1000 - Computer Literacy and Office Applications

3 Credits
Course is designed to provide students with the skills and knowledge of basic and advanced concepts of word processing, spread sheet accounting, and presentation software using Microsoft Word, Excel and Power Point. Some classes may also include a section on Web page design. Req., High School Algebra.

CS 1010 - Topics in Computer Science

1-3 Credits
Content will vary to reflect areas of current interest in computer science. As the course continually changes, students may take the course several times for elective credit. Prer., instructor consent.

CS 1020 - Web Page Design for Non-Computer Science Majors

3 Credits
An introduction to Web site design using Dreamweaver; creating and editing graphics using Fireworks; creating animation using Flash; integration of graphics and video into Web pages; and, basic Web design concepts. Not for CS or engineering majors. Prer., Students should be familiar with basic computer concepts, including file operations and text editing.

CS 1030 - Introduction to Microsoft Word

1 Credit
Introduction to word processing and the specifics of using the Microsoft Word for Windows system. Students will learn to create, format, and edit documents using Word.

CS 1040 - Introduction to Microsoft Excel

1 Credit
Introduction to spreadsheets and the specifics of using the Microsoft Excel for Windows system. Students will learn to create, edit, and print spreadsheets using Excel.

CS 1050 - Topics in Computer Science

1-3 Credits
Content will vary to reflect areas of current interest in computer science. As the course continually changes, students may take the course several times for elective credit. Prer., Instructor consent.

CS 1060 - Topics in Computer Science

1-3 Credits
Content will vary to reflect areas of current interest in computer science. As the course continually changes, students may take the course several times for elective credit. Prer., Instructor consent.

CS 1070 - Introduction to Programming in Visual Basic for Non-Majors

3 Credits
Introduction to using visual basic to design and implement programs that interface with their users through Microsoft Windows. Prer., High school algebra.

CS 1080 - Exploring Computer Technology

3 Credits
This course investigates the uses and capabilities of computers in society. Topics include word processing, spreadsheets, digital media, the internet, digital security, fair information practices, and basic web page development. Students should be familiar with basic computer concepts. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

CS 1090 - Introduction to Programming Using MATLAB

3 Credits
Introduction to programming with emphasis on structured programming techniques using MATLAB as the learning environment. Designed to teach mechanical and aerospace engineering students fundamentals of computer programming. Prer., high school algebra.

CS 1100 - Introduction to Game Development

3 Credits
Introduces students to basic game development topics through game design and implementation activities. Students design, implement, and test computer games using drag-and-drop game creation tools. A small amount of programming is required. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Meets with GDD 1100.

CS 1120 - Computational Thinking with Beginning Programming

3 Credits
This course explores the ideas behind computational thinking: the thought processes involved in analyzing problems and formulating their solutions in precise, unambiguous ways. Topics include data collection, analysis, and representation; algorithms and procedures; simulation; and others. Most problem solutions in the course are implemented as computer programs. Prer., High school algebra or equivalent.

CS 1150 - Principles of Computer Science

3 Credits
Introduction to programming with emphasis on computer science concepts. Develops methods for computer problem solving. Develops proficiency for programming in a modern programming language, and introduces the concepts of abstraction in problem solving. Includes basic concepts of computer systems and environments including debuggers, editors, and file systems. Prer., High school algebra and familiarity with computer concepts including file operations and text editing; College of Engineering students only.

CS 1450 - Data Structures and Algorithms

3 Credits
Concepts of data type, data abstraction, and data structure. Internal representations of fundamental data types. Linear data structures: stack, queue. Linked data structures and dynamic data types. Search table data abstraction, linear search in arrays and lists, binary search in arrays and trees. Binary trees, non-binary trees, binary search trees. Prer., CS 1150, College of Engineering students only.

CS 2010 - Topics in Computer Science

1-3 Credits
Content will vary to reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Consent of instructor, College of Engineering students only.

CS 2030 - Topics in Computer Science

1-3 Credits
Content will vary to reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Consent of instructor, College of Engineering students only.

CS 2050 - Topics in Computer Science

1-3 Credits
Content will vary to reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Consent of instructor, College of Engineering students only.

CS 2060 - Programming with C

3 Credits
A first course in the C programming language for those who are proficient in some other high level language. Prer., CS 1120, CS 1150, GDD 1200, or ECE 1021; College of Engineering students only.

CS 2070 - Topics in Computer Science

1-3 Credits
Content will vary to reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Consent of instructor; College of Engineering students only.

CS 2080 - Programming with UNIX

2 Credits
An introduction to the UNIX operating system with an emphasis on the development of C and command shell programs. Prer., CS 1450, College of Engineering students only.

CS 2100 - iPhone and iPad Application Development

3 Credits
Introduces and gives students hands-on experience with tools such as Xcode and Interface Builder. Students will become familiar with Apple framework such as Foundation UIKit and will spend many hours with Apple's runtime language. Students will also become comfortable transferring innovative ideas to Objective C. Prer., College of Engineering students only.

CS 2120 - Topics in Computer Science

1-3 Credits
Content will vary to reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Consent of instructor, College of Engineering students only.

CS 2160 - Computer Organization and Assembly Language Programming

3 Credits
Provides an introduction to the concepts of computer architecture, functional logic, design and computer arithmetic. It presents material on the mechanics of information transfer and control within a computer system. Also included are: symbolic programming techniques, implementing high level control structures, addressing modes and their relation to arrays, subprograms, parameters, linkage to high level languages and the assembly process. Prer., CS 1450, CS 2060; College of Engineering students only.

CS 2250 - Advanced Data Structures in C++

3 Credits
An advanced study of data structures and object-oriented concepts designed to transition the students to C++. Students explore memory management concepts within C++ including pointers, arrays, constructors, destructors, templates, threads, and GUI development. Prer., GDD 2200; College of Engineering students only.

CS 2300 - Computational Linear Algebra

3 Credits
Covers mathematical as well as computational aspects of Linear Algebra. The class will apply/explore these concepts: Vectors, Matrices, 2D, 3D, and ND Transforms and Graphics, Systems of Linear Equations, Eigenvalues/ Eigenvectors, Numerical Stability, and Linear Filters/Predictors. Prer., CS 1150 or GDD 1200; a score of 20 or better on the Math ACT, or a score of 50 or better on the algebra Math Placement Test, or successful completion of MATH 99; or instructor permission (programming experience required).

CS 3010 - Web Programming

3 Credits
An introduction to the programming languages and technologies associated with the Web. Included are XHTML, cascading style sheets, Javascript, dynamic XHTML documents, applets, XML, Perl and its use in CGI programming, Java Servlets and web access to databases. Prer., CS 2060, CS 2080; College of Engineering students only.

CS 3020 - Advanced Object Technology Using C#/.Net

3 Credits
C# class construction principles, delegates, threads, event handling, GUI components, observer pattern, standard collections, generic parameters, enumerators, custom components, UML representation, abstract classes, interfaces, object persistence, remoting, and refactoring. Prer., CS 1450; College of Engineering students only.

CS 3030 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for technical elective credit. Prer., Instructor consent, College of Engineering students only.

CS 3040 - Adv Object Technology Using Java

3 Credits
Understand advanced object-oriented concepts and implement software in Java. Topics include swing, beans, class construction, exception handling, threads, graphics, printing, cloning, serialization, collections, event-handling models, model-view-controller and reflection. Apply good OO principles by implementing mid-sized projects in Java. Prer., CS 1450; College of Engineering students only.

CS 3050 - Social and Ethical Implications of Computing

1 Credit
This class will discuss selected topics in ethical, social, political, legal and economic aspects of the application of computers. Each student is expected to research one or more topics, actively participate in discussions, and give a presentation. Written papers may be required. Prer., CS 2080; College of Engineering students only.

CS 3060 - Object-Oriented Programming Using C++

3 Credits
The principal goals of this course are: 1) to learn the fundamentals of object-oriented programming, 2) to gain skill and proficiency in using the C++ programming language, 3) to exercise the C++ language in implementing a moderate sized software system designed with objects. Prer., CS 2060, CS 2080; College of Engineering students only.

CS 3110 - Programming the Mobile Web

3 Credits
Provides an introduction to web systems and technologies with focus on the support for mobile platforms. Topics include HTML5, CSS, JavaScript, AJAX, web servers, server side scripting/browser detection, content delivery, iOS, Android, and mobile web application development environments and processes. Prer., CS 1450, CS 2080; College of Engineering students only.

CS 3160 - Concepts of Programming Languages

3 Credits
Evolution of the central concepts of programming languages, describing syntax and semantics, data types, abstract data types, control structures, subprograms, concurrency and exception handling. Prer., CS 2160, and either CS 3020 or CS 3060; College of Engineering students only.

CS 3300 - Software Engineering I

3 Credits
Software engineering methodologies. The software lifecycle. Emphasis on the design, development and implementation of a software system. A course project provides the student teams practical application of the software engineering techniques. Approved for Compass Curriculum requirement: Navigate. Prer., CS 2080, and either CS 3020 or CS 3060; College of Engineering students only.

CS 3350 - Introduction to Game Design and Development

3 Credits
Includes game mechanics, feedback systems, game programming fundamentals, game math and physics, artificial intelligence, 2D and 3D graphics and animation, and audio programming. Students complete a team project developing a complete game. Prer., CS 1450 or GDD 2200; GDD 2150; PES 1110; College of Engineering students only.

CS 3910 - System Administration and Security

3 Credits
Covers the installation and configuration of mainstream operating systems, important network services, disaster recovery procedures, and techniques for ensuring the security of the system. Prer., CS 2080; College of Engineering students only.

CS 4000 - Graduation Exit Exam and Interview

0 Credits
Graduation exit exam on Computer Science topics and participation in exit interview. These activities support continuous improvement of the Computer Science curriculum. Taken during student's final semester. This zero-credit course is required for graduation. Prer., Senior standing.

CS 4010 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4020 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4030 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4040 - Select Topics in Computer Science

1-3 Credits
Selected topics in computer science. The content of these courses will vary from time to time and reflect the areas of current interest in computer science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4050 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4060 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent., College of Engineering students only.

CS 4070 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4080 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4090 - Select Topics in Computer Science

1-3 Credits
The content of these courses will vary from time to time and reflect the areas of current interest in Computer Science. As the courses continually change, students may take the course several times for elective credit. Prer., Instructor consent, College of Engineering students only.

CS 4100 - Compiler Design I

3 Credits
Underlying theory and design techniques for compilers. Lexical analysis, top-down and bottom-up parsing algorithms, runtime storage management, syntax directed translation schemes, intermediate code generation. Approved for Compass Curriculum requirement: Summit. Prer., CS 3160, and either CS 4700 or CS 5700; College of Engineering students only. Meets with CS 5100.

CS 4200 - Computer Architecture I

3 Credits
Course covers fundamentals of computer design, instruction set principles and examples, pipelining, advanced pipelining and instruction-level parallelism, memory-hierarchy design and survey of design issues in storage, interconnection network and multiprocessor systems. Prer., CS 2160; College of Engineering students only. Meets with CS 5200.

CS 4220 - Computer Networks

3 Credits
Course focuses on the basic network and protocol concepts and principles with practical hands-on exercises on network management, network programming, and network planning through the use of industry simulators. Topics include: Internet protocols and routing, local area networks, basic TCP/IP programming, congestion control, packet switching and routing, quality-of-service, and network management. Prer., CS 2060, MATH 2150; College of Engineering students only.

CS 4360 - Game Design and Development Capstone Project

1 Credit
A Capstone Project course in which each individual student designs and develops a complete game on their own. Each student also develops the documentation associated with their game, including marketing materials and a user manual. Prer., CS 4780; College of Engineering students only.

CS 4420 - Database Systems I

3 Credits
Course introduces general database concepts as well as database system technology. The course covers ER and R data models, R-algebra, SQL, data storage and indexing, query optimization, database design and security. Prer., CS 3300; College of Engineering students only. Meets with CS 5420.

CS 4440 - Big Data

3 Credits
Extensive experience in multiple paradigms for Big Data, focusing on: 1) Large-scale data analysis techniques: statistics basics, machine learning, classification; 2) parallel programming techniques: Nvidia GPUs/CUDA; 3) Cloud computing techniques: Map-Reduce, Hadoop, Pig, Hive. Prer., ECE 3610 or MATH 3810; CS 3060; College of Engineering students only. Meets with CS 5440.

CS 4500 - Operating Systems I

3 Credits
Introduces concepts, terminology, and algorithms of operating systems. Describes semaphores, processes, virtual mappings, interrupts, resource allocation and management, protection, synchronization, scheduling, queuing and communication as applied to operating system design and implementation. Prer., CS 2060, CS 2080, CS 4200 or CS 5200; College of Engineering students only. Meets with CS 5500.

CS 4600 - Numerical Computing

3 Credits
Algorithms for the solution of nonlinear equations, interpolation and approximation, differentiation, integration, systems of linear equations, ordinary differential equations and least squares. Prer., CS 1450, MATH 2350, and either MATH 3130 or CS 1300; College of Engineering students only. Meets with CS 5600.

CS 4700 - Computability, Automata and Formal Languages

3 Credits
Finite automata and regular expressions, context-free grammars, context-free languages, and pushdown automata, Turning machines, undecidability, the Chomsky hierarchy of formal languages, computational complexity and intractable problems. Prer., MATH 2150, and either MATH 3130 or CS 1300; College of Engineering students only. Meets with CS 5700.

CS 4720 - Design and Analysis of Algorithms

3 Credits
Design methodologies; divide-and-conquer, exhaustive search, dynamic programming. Time and space complexity measures, analysis of algorithms. Survey of important algorithms for searching, sorting, graph manipulation. Tractability: class P and NP, NP complete problems. Prer., CS 1450, MATH 2150; College of Engineering students only. Meets with CS 5720.

CS 4780 - Advanced 3D Games and Digital Content Creation

3 Credits
Populating virtual worlds with characters and objects. Concentrates on current technology and advanced topics using graphics and VR technology. Typical topics include graphics engines, landscape specializations, wrapping techniques, complex scenes, lighting, shadows, motion control, collisions, dynamics, image-based rendering, multiplayer games, etc., plus advanced features from Siggraph and others. Prer., CS 4800 or CS 5800; College of Engineering students only. Meets with CS 5780.

CS 4800 - Computer Graphics

3 Credits
Fundamental areas of modern raster computer graphics: hardware, software, data structures, mathematical modeling, user interface and manipulation of graphical objects. A subset of the two-dimensional GKS is examined and implemented with emphasis placed upon segmented display files and instance modeling. Basic to all graphic programs written are the ergonomic requirements of the user. Required programs are in the areas of animation, paint systems, polygon filling and clipping, and curve generation. Prer., CS 1450 or GDD 2200, MATH 3130 or CS 1300; College of Engineering students only. Meets with CS 5800.

CS 4820 - Functional and Logical Programming for Artificial Intelligence

3 Credits
Course focuses on functional programming using LISP and logical programming using Prolog. Programming projects are geared towards various aspects of artificial intelligence. Prer., CS 3160; College of Engineering students only.

CS 4850 - Bioinformatics and Computational Biology

3 Credits
Review of molecular and cell biology; bioinformatics databases; pairwise sequence alignment algorithms; Markov Chains, Hidden Markov Models; evolutionary models; Phylogenetic trees; gene recognition; protein structure prediction. Prer., MATH 3810, CS 4720; College of Engineering students only. Meets with CS 5850.

CS 4910 - Introduction to Computer Security

3 Credits
Students will learn basic cryptography, user authentication, access control, malicious software, network attacks and protection, software security, and operating system security. Students will also perform hands-on security lab exercises. Prer., CS 3160, CS 3300, Senior standing, College of Engineering students only.

CS 4920 - Introduction to Applied Cryptography

3 Credits
Basic security issues in computer communication, classical cryptographic algorithms, symmetric-key cryptography, public-key cryptography, authentication, and digital signatures. Prer., MATH 2150 and MATH 3810 or QUAN 2020 or ECE 3610; College of Engineering students only.

CS 5010 - Intensive Computer Science for Graduate Students

3 Credits
Intended for prospective graduate students with extensive programming experience. Covers concepts in CS 1150 and CS 1450. Can substitute for these courses in satisfying entrance requirements for M.S. in Computer Science. Does not count towards M.S.or B.S. degrees. Not open to undergraduate. Prer., Knowledge of high-level programming language.

CS 5020 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5030 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5050 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5060 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5070 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5080 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5090 - Select Topics in Computer Science

1-3 Credits
Topics vary.

CS 5100 - Compiler Design

3 Credits
Underlying theory and design techniques for compilers. Lexical analysis, top-down and bottom-up parsing algorithms, runtime storage management, syntax directed translation schemes, and intermediate code generation. Prer., CS 2160, CS 3160 Meets with CS 4100.

CS 5200 - Computer Architecture I

3 Credits
Course covers fundamentals of computer design, instruction set principles and examples, pipelining, advanced pipelining and instruction-level parallelism, memory-hierarchy design and survey of design issues in storage, interconnection network and multiprocessor systems. Prer., CS 2160. Meets with CS 4200.

CS 5220 - Computer Communication

3 Credits
The subject of transmitting information between processors is described in detail. The student is expected to have maturity with hardware and/or real-time concepts. Communication systems, from simple to asynchronous point-to-point links, to those based on complex network architectures will be studied. Material will be oriented toward the computer scientist as a user, designer and evaluator of such systems. Terminology and concepts will be emphasized rather than detailed electronic or physical theory. Prer., Graduate students only.

CS 5250 - Multimedia Computing and Communications

3 Credits
Design principles of multimedia authoring and communication systems. It covers the interface and characteristics of voice and video processing equipment, multimedia document architectures, media encoding/compression schemes, real-time scheduling of time critical multimedia documents, multimedia editors, multimedia communication standards and communication software. Prer., Graduate standing or instructor permission.

CS 5260 - Advanced Internet & Web Systems

3 Credits
Advanced topics in Internet and WWW systems, TCP/IP network modules in kernel, content switching, web server technologies, web system management, load balancing, web security, and electronic commerce. Prer., CS 3010, CS 5220, or consent of instructor.

CS 5310 - Software Requirements Analysis and Specification

3 Credits
Techniques and tools for requirements analysis and requirements specification. Requirements languages and notations. Specification completeness and consistency. Team project in the analysis and specification of a major software system. Prer., CS 1450 or equivalent, knowledge of a modern programming language and discrete structures.

CS 5320 - Software Design

3 Credits
Covers a variety of methodologies and tools for design of sequential, parallel and distributed software systems. Design language; graphical design representations. Data abstraction, data dictionaries. Data flow design and diagrams. Object-oriented design. Documentation. Team project in the design of a major software system. Prer., Graduate students only.

CS 5330 - Formal Methods of Software Systems Engineering

3 Credits
Elements of discrete mathematics. Formal mechanisms for specifying and verifying the correctness, reliability, and efficiency of software systems. State transition, regular expression, context free, and applicative models. Assertions, Hoare axioms, and weakest preconditions. State machine, algebraic, and operational specification techniques. Prer., Graduate students only.

CS 5340 - Software Maintenance

3 Credits
Discussion and application of corrective, adaptive, perfective and preventive software maintenance techniques and tools. Related topics such as software systems analysis, reverse-engineering, re-engineering, regression testing and configuration management are examined. As a project, student teams maintain an existing software system. Prer., Knowledge of modern programming language, discrete structures, Graduate students only.

CS 5350 - Software Project Management

3 Credits
Planning, scheduling, costing of projects. Measuring progress, predicting success, controlling failure. Management tools and their use. Effectiveness and efficiency of software engineering environments. Distributed software development. Quality control standards and practices. Prer., Knowledge of modern programming, NG language, data structures and algorithms, and discrete structures.

CS 5360 - Software Product Assurance

3 Credits
Principles, techniques and tools for producing quality software systems. The first half of this course focuses on software product assurance processes. The second half covers a variety of software testing techniques. Prer., Graduate students only.

CS 5371 - Software Testing for Mobile Devices and Embedded Systems

3 Credits
This course covers theoretical and practical aspects of Software Testing for mobile devices and embedded systems and introduces students to recent research in the area. Students develop a research proposal in the subject area on a topic of their choice. Prer., CS 1450 and either CS 4500 or CS 3110. Graduate students only.

CS 5380 - Object-Oriented Software Development

3 Credits
Principles of object-oriented problem-solving, object-oriented analysis and object-oriented design. Development of class hierarchies, use of polymorphism and inheritance, criteria for good design, semester project. Prer., CS 3300 or consent of instructor.

CS 5390 - Software Systems Engineering Project Laboratory

3 Credits
Students participate in a project involving the development or maintenance of a software system intended for external distribution and use. Duties include requirements analysis, specification, design, implementation, testing, quality assurance, configuration management and documentation. Projects come from the university and from outside sources. Students are evaluated based on their project work and an oral presentation describing their work and critiquing their results. Prer., CS 5310, CS 5320, CS 5340, CS 5360.

CS 5420 - Database Systems I

3 Credits
Course introduces general database concepts as well as database system technology. The course covers ER and R data models, R-algebra, SQL, data storage and indexing, query optimization, database design and security. Prer., CS 3300. Meets with CS 4420.

CS 5430 - Database Systems II

3 Credits
Course covers advanced database topics including transaction management, parallel and distributed databases, internet databases, decision support, data mining, object and object-relational database systems, spatial data management and other current research issues. Prer., CS 4420/CS 5420.

CS 5440 - Big Data

3 Credits
Extensive experience in multiple paradigms for Big Data, focusing on: 1) Large-scale data analysis techniques: statistics basics, machine learning, classification; 2) parallel programming techniques: Nvidia GPUs/CUDA; 3) Cloud computing techniques: Map-Reduce, Hadoop, Pig, Hive. Prer., CS 3060, and either ECE 3610 or MATH 3810. Meets with CS 4440.

CS 5450 - KDD (Knowledge Discovery in Databases) Applications in Bioinformatics and Neurosciences

3 Credits
Both a theoretical and hands-on course that presents data mining concepts common to the art of KDD including Discretization, Rought Set Theory, Fuzzy Logic, Domain Adaptation and Discrete Finite Automata Trees. The application of these will be in terms of data mining with Weka, Matlab, Scal and Java. Prer., computer science familiarity. Prer., Graduate students only.

CS 5500 - Operating Systems I

3 Credits
Introduces concepts, terminology, and algorithms of operating systems. Describes semaphores, processes, virtual mappings, interrupts, resource allocation and management, protection, synchronization, scheduling, queuing and communication as applied to operating system design and implementation. Prer., CS 2060, CS 2080, and CS 4200/5200. Meets with CS 4500.

CS 5510 - Distributed Systems

3 Credits
Conveys insight into, and knowledge of, the principles and practice underlying the distributed systems, both Internet-based and otherwise. Describes major developments in interprocess communication, remote invocation, distributed file systems, replication and load balancing, distributed shared memory, and distributed multimedia systems. Prer., CS 4500/5500.

CS 5520 - Operating System Support for Security

3 Credits
Covers the configuration and management of operating systems for security-related applications, OS hardening, access control, security policies, security and protection mechanisms, virtual machines, the exploits related to operating systems and their defenses, and mandatory access control and multilevel security. Prer., CS 2060, CS 2080.

CS 5530 - Mobile and Wireless Systems

3 Credits
Considers aspects of mobile and wireless systems including the support for creating mobile applications, OS, programming, network protocols, security, and their interactions with web systems and cloud computing. Prer., CS 5220, Graduate students only.

CS 5540 - Datacenters and Cloud Computing

3 Credits
This course focuses on recent research in cloud computing and datacenters, including automated cloud resource management, data center reliability, and secure and scalable data center design. Prer., CS 4500 or CS 5500; Graduate students only.

CS 5550 - Computer Systems Performance Evaluation

3 Credits
Perspectives of performance evaluation, measurement techniques; hardware, software, and firmware tools, simulation techniques, analytical techniques; workload characterization, system selection; system tuning; performance tracking, performance prediction in the design phase and cost-benefit analysis. Prer., CS 4500/5500.

CS 5600 - Numerical Computing

3 Credits
Algorithms for the solution of nonlinear equations, interpolation and approximation, differentiation, integration, systems of linear equations, ordinary differential equations and least squares. Prer., CS 1450, MATH 2350 and MATH 3130. Meets with CS 4600.

CS 5670 - Discrete Simulation I

3 Credits
Examines concepts and methods of discrete event simulation. Compares major modeling methods. Discusses statistical issues including random number generation, arrival processes, analysis of simulation output, verification and validation of models and simulation programs. Describes in detail the use of a major discrete event simulation language. Discusses simulation level of detail and simplifying assumptions. Prer., CS 2080 and MATH 3810.

CS 5700 - Computability, Automata, and Formal Languages

3 Credits
Finite automata and regular expressions; context-free grammars, context-free languages, and pushdown automata; Turing machines; undecidability; the Chomsky Hierarchy of Formal Languages; computational complexity, and intractable problems. Prer., MATH 2150 and MATH 3130. Meets with CS 4700.

CS 5710 - Evolutionary Computation

3 Credits
Introduction to evolutionary computation with emphasis on genetic algorithms. Includes evolution strategies, evolutionary programming, schemata fitness functions and classifiers, current research topics, messy algorithms, and adaptive landscapes. Prer., MATH 3810, and CS 5720 or CS 5820; or instructor permission.

CS 5720 - Design and Analysis of Algorithms

3 Credits
Design methodologies: divide-and-conquer, exhaustive search, dynamic programming. Time and space complexity measures, analysis of algorithms. Survey of important algorithms for searching, sorting, and graph manipulation. Tractability: Class P and NP, NP-complete problems. Prer., CS 1450 and MATH 2150. Meets with CS 4720.

CS 5750 - Computational Geometry

3 Credits
Computational complexity of geometric problems within the framework of analysis of algorithms. Stress on geometric searching, intersection problems, particularly of rectangles, and fundamental algorithms. Practical applications of concepts developed can be found in computer graphics, analysis of algorithms, spatial data structures and VLSI system design. Prer., CS 4720/5720, CS 4800/5800 or instructor consent.

CS 5770 - Computer Graphics Animation & Scientific Visualization Techniques

3 Credits
Animation: basic principle, physically based modeling, algorithms for animation, constraint optimization, use of dynamics in animation, teleological modeling. Scientific visualization: overview, foundation techniques, and applications. Prer., CS 4800/5800.

CS 5780 - Advanced 3D Games and Digital Content Creation

3 Credits
Populating virtual worlds with characters and objects, this course will concentrate on current technology and advance topics using graphics and VR technology. Typical topics included are graphics engines, landscape specializations, wrapping techniques, complex scenes, lighting, shadows, motion control, collision, dynamics, image based rendering, multiplayer games, etc. plus advanced features from Siggraph and others. Prer., CS 4800/5800 or instructor consent. Meets with CS 4780.

CS 5790 - Wearable Computing and Complex Systems

3 Credits
Wearable computing with an emphasis on complex systems research is an important area of research. This course will cover concepts and related techniques, and state of the art issues. This course will provide an excellent basis for students who are interested in computer graphics and virtual reality research. Prer., CS 4800/5800 or consent of instructor.

CS 5800 - Computer Graphics

3 Credits
Fundamental areas of modern raster computer graphics; hardware, software, data structures, mathematical modeling, user interface and manipulation of graphical objects. A subset of the two dimensional GKS is examined and implemented with emphasis placed upon segmented display files and instance modeling. Basic to all graphic programs written are the ergonomic requirements of the user. Required programs are in the areas of animation, paint systems, polygon filling and clipping, and curve generation. Prer., CS 1450, CS 2080. Meets with CS 4800.

CS 5810 - Topics in Computer Graphics

3 Credits
Examines the mathematical and physical models used to produce realistic three dimensional images. Topics include perspective viewing, hidden surface removal, shading, fractals, and rag tracing. Prer., CS 4800/5800.

CS 5820 - Artificial Intelligence

3 Credits
Course covers the foundation of artificial intelligence: search techniques, first-order predicate calculus and knowledge representation. Also covers advanced topics such as speech and natural language processing and learning. Prer., CS 3160, CS 4820, or instructor consent for graduate students.

CS 5840 - Computer Vision

3 Credits
Representation and manipulation of digital images, Fourier analysis of images, enhancement techniques in spatial and frequency domain, segmentation procedures, digital geometry, region and boundary representation, texture processing, pattern recognition and application to robotics. Prer., MATH 2350 or consent of instructor. Meets with MATH 5840.

CS 5850 - Bioinformatics and Computational Biology

3 Credits
Review of molecular and cell biology; bioinformatics databases; pairwise sequence alignment algorithms; Markov Chains, Hidden Markov Models; evolutionary models; Phylogenetic trees; gene recognition; protein structure prediction. Prer., MATH 3810, CS 4720/5720, or instructor permission. Meets with CS 4850.

CS 5860 - Machine Learning

3 Credits
Introduction to machine learning followed by a selection of machine learning topics such as regression, Bayesian learning, Hidden Markov Models, support vector machine, clustering and reinforcement learning. Prer., CS 5820 or instructor permission. Graduate standing.

CS 5870 - Introduction to Artificial Neural Networks

3 Credits
The course will cover basic neural network architecture and learning algorithms. Practical applications will be surveyed. Students will learn to implement their own simulator and implement various architectures. Prer., MATH 2350.

CS 5880 - Information Retrieval

3 Credits
Information retrieval focuses on algorithms and approaches to the search for information in documents, in databases, and on the Web. Topics include index construction and compression, probabilistic retrieval, language models, text classification, classification, clustering, web crawling, and web search. Prer., Graduate standing or instructor permission.

CS 5890 - Computational Linguistics

3 Credits
Approaches to syntactic processing of natural language: issues in semantic interpretation, pragmatics or the impact of context and world knowledge of natural language understanding and generation of natural language responses. Prer., Senior standing or Graduate standing.

CS 5910 - Fundamentals of Computer/Network Security

3 Credits
Introduction to the study of computer and network security from the view of information warfare. Topics include information system threats, vulnerabilities and defensive mechanisms (cryptography, authentication digital signatures, PKI, etc.). Prer., CS 2080 and MATH 2150.

CS 5920 - Applied Cryptography for Secure Communication

3 Credits
Basic security issues in computer communication, classical cryptographic algorithms, symmetric-key cryptography, public-key cryptography, authentication, and digital signatures. Prer., MATH 2150, MATH 3810, CS 3160, CS 5220, or instructor consent.

CS 5990 - Information Assurance Capstone Project Laboratory

3 Credits
Students participate in information assurance projects involving the vulnerability analysis and hardening of software systems. Students are evaluated based on their project work, how they integrate what they have learned in the required information assurance core courses, and an oral presentation at the end of the course. Prer., CS 5200, CS 5220, CS 5520, CS 5910, CS 5920; Graduate students only.

CS 6000 - Introduction to Computer Science Research

3 Credits
This course, required for CS first-year Ph.D. students, will introduce the basics of doing CS research and survey ongoing research in the field. Students will read research papers across multiple CS topics and prepare written analyses. Prer., Graduate students only.

CS 6010 - Technological Transfer, Patents and IP in Engineering

3 Credits
Technological transfer process including discovery through invention to commercialization. Forms of IP protection including copyrights and patents. Students will read/write patent applications. Prer., Permission of instructor.

CS 6220 - Distributed Networks

3 Credits
Deals with complex communications systems in depth. Packet switching networks, local area networks, satellite systems, the open systems interconnect (OSI) reference model, and the development of communications software. Prer., CS 5220.

CS 6300 - Topics in Software Systems Engineering

3 Credits
Advanced topics and current research issues in software engineering. Possible topics include software engineering environments, requirements, design, testing, software metrics, configuration management, maintenance, software cost analysis, and distributed software. Prer., CS 5310 or CS 5350.

CS 6380 - The Design and Modeling of Class Interfaces and Contracts

3 Credits
Past and present work related to specifying the semantics of a class using assertions are examined. The BON method is presented. Prer., CS 5380.

CS 6430 - Data Mining

3 Credits
This course covers data warehousing, OLAP, association rules, cluster analysis, classification and prediction, complex data mining applications and trends in data mining. Prer., CS 4420/5420.

CS 6770 - Virtual Reality and Computer-Human Interaction

3 Credits
The course will focus on the so-called ultimate form of interaction between human and machine, creating virtual or artificial world. The basic idea and various input devices will be discussed. Several advanced papers in this area will be covered. Some of these ideas will be implemented through a term project. Prer., CS 5800 or CS 5770 or consent of instructor.

CS 6820 - Seminar in Artificial Intelligence

3 Credits
Research seminar treating contemporary results in the theory and applications of artificial intelligence. Prer., CS 5820 or instructor permission.

CS 6870 - Advanced Studies in Artificial Neural Networks

3 Credits
A research seminar treating contemporary results in the theory and applications of artificial neural networks. Prer., CS 5870.

CS 6910 - Advanced System Security Design

3 Credits
Advanced topics in network and system security, including firewall design, network intrusion detection, tracking and prevention, virus detection, programming language and OS support for security and wireless network security. Prer., CS 5910, CS 5920, or instructor permission.

CS 6920 - Adv Topics in Network Security

3 Credits
Covers advanced topics in network security such as Kerberos, PGP, IPSec, VPNs, SSL, SET, Smart cards, Steganography, Watermarking and Biometric Encryption. Research papers may be discussed. Prer., CS 5920.

CS 6930 - Advanced Topics in Web Security and Privacy

3 Credits
This course will explore a series of important topics in web security and privacy. It is a combination of introductory lectures, homework, student presentations of research papers, and research projects. Prer., CS 5910 or consent of instructor.

CS 7000 - Masters Thesis

1-6 Credits
Masters Thesis. Prer., Consent of instructor.

CS 7010 - Masters Project

1-3 Credits
Masters Project. Prer., Consent of instructor.

CS 7020 - Graduate Internship

1-3 Credits
Educational readings and reporting associated with a computer science internship related to students' graduate studies. Must be enrolled in a CS graduate program and have faculty sponsor.

CS 7060 - Games and Media Integration Portfolio Development

1-6 Credits
Completed works with interdisciplinary focus to be submitted to various animation or graphics festivals. Prer., Must be enrolled in Games and Media Integration (GMI) graduate program and have faculty sponsor; instructor consent required.

CS 8000 - PhD Dissertation

1-10 Credits
Prer., Acceptance into program.

CS 9200 - Independent Study in Computer Science Undergraduate

1-3 Credits
Prer., Consent of instructor.

CS 9600 - Independent Study in Computer Science Graduate

1-3 Credits
Independent and creative work in the Computer Science area for graduate students. Prer., Approval of program advisor.

CS 9990 - Candidate for Degree

0 Credits
Candidate for Degree. Prer., Consent of instructor.

CURR - Curriculum & Instruction

CURR 2009 - Succeeding at UCCS

1 Credit
Designed to provide an overview of education at UCCS. It is intended for students who have not attended K-12 school in the U.S. or American-style schools abroad. A foundational orientation course that will facilitate student success on campus.

CURR 2010 - P-20 Education in the USA

1 Credit
This course provides an overview of American education from preschool through college levels (P-20) for international students who have

not attended K-12 school in the U.S. It includes foundational information on topics relevant to American schooling, including funding, legal issues, governance, and educational systems.

CURR 3199 - Educational Technology Laboratory

1-3 Credits
A series of self-paced modules including operating systems, word processing, graphics, gradebooks, presentation programs, e-mail, multimedia, and the Internet. Available for both Mac and PC. Number of credits to be arranged with instructor. Prer., This course is open only to admitted to and participating in TEP.

CURR 3713 - Language and Linguistics

3 Credits
Presents basic components of language structure and language use, emphasizing relevance for teaching culturally and linguistically diverse students. Meets with CURR 5713.

CURR 4051 - LETRS: Speech Sounds of English Phonemes and How to Teach Them

2 Credits
Participants will receive training using the Language Essentials for Teachers of Reading and Spelling curriculum developed by Houghton Mifflin. LETRS is a comprehensive curriculum designed to enrich and extend program-specific professional development in the area of reading instruction. This course covers phonological processing, phonics, and phoneme awareness. Meets with CURR 5051.

CURR 4052 - LETRS: Teaching Phonics, Word Study, and Alphabetic Principle

2 Credits
Participants will receive training using the Language Essentials for Teachers of Reading and Spelling (LETRS) curriculum developed by Houghton Mifflin. LETRS is a comprehensive curriculum designed to enrich and extend program-specific professional development in the area of reading instruction. This course focuses on phonological and phoneme awareness, reading fluency, vocabulary, and text comprehension. Meets with CURR 5052.

CURR 4053 - LETRS: The Mighty Word: Building Vocabulary and Oral Language

2 Credits
Participants will receive training using the Language Essentials for Teachers of Reading and Spelling curriculum developed by Houghton Mifflin. LETRS is a comprehensive curriculum designed to enrich and extend program-specific professional development in the area of reading instruction. This course focuses on word meanings and how they are learned from direct definition and exposure to contextual use as well as other key ideas. Meets with CURR 5053.

CURR 4054 - LETRS: Getting Up to Speed: Developing Fluency

2 Credits
Participants will receive training using the Language Essentials for Teachers of Reading and Spelling (LETRS) curriculum developed by Houghton Mifflin. LETRS is a comprehensive curriculum designed to enrich and extend program-specific professional development in the area of reading instruction. This course covers the definition of automaticity and fluency, how children become fluent readers, and other topics. Meets with CURR 5054.

CURR 4055 - LETRS: Digging for Meaning: Teaching Text Comprehension

2 Credits
Participants will receive training using the Language Essentials for Teachers of Reading and Spelling (LETRS) curriculum developed by Houghton Mifflin. LETRS is a comprehensive curriculum designed to enrich and extend program-specific professional development in the area of reading instruction. This course will specifically cover techniques and strategies that are tailored for use before, during and after reading as well as other factors that contribute to comprehension. Meets with CURR 5055.

CURR 4060 - TeachSpecialEd.com: Foundations in Special Education

3 Credits
This course places the history of special education in context of current principles and practices. Presents contributions of advocacy groups relative to legislative accomplishments and addresses important issues, federal laws, and resources for beginning teachers in determining their legal responsibilities. Meets with SPED 4430.

CURR 4061 - TeachSpecialEd.com: Development and Characteristics of Learners with Exceptional Learning Needs.

3 Credits
Focuses on individuals with high-incidence disabilities, including mild mental retardation, learning disabilities, ADHD, and behavioral disorders. Teachers are also introduced to the attributes of students from low-incidence groups. Meets with SPED 4440.

CURR 4062 - TeachSpecialEd.com: Assessment for Instructional Planning and Decision Making

3 Credits
Foundations of assessment are addressed from the perspective of instructional planning and decision making. Legal and ethical principles are covered along with the processes of screening, pre-referral, referral and classifications. Attention is given to assessments in IEP development. Meets with SPED 4460.

CURR 4063 - TeachSpecialEd.com: Creating Environments that Promote Learning, Social Interactions, and Behavior.

3 Credits
Development of positive learning environments as a strategy for enhancing teaching and learning. Preventive measures in the context of approaches to building positive behavior support. Intervention strategies for problem behavior, along with techniques for promoting social interactions and behaviors. Meets with SPED 4470.

CURR 4064 - TeachSpecialEd.com: Instructional Strategies: Teaching for Results

3 Credits
Planning for effective instruction is the central focus of this course. Instructional planning, organizing and designing instruction, student outcomes instructional principles, and assessing outcomes of effective instruction. Curriculum-based assessment is covered along with the communication of student outcomes. Meets with SPED 4480.

CURR 4065 - TeachSpecialEd.com: Instructional Strategies: Improving Basic Reading Skills

3 Credits
Emphasizes teaching beginning reading and developing reading fluency. Applicable to teaching students with exceptional learning needs in varied instructional settings. Meets with SPED 4560.

CURR 4066 - TeachSpecialEd.com: Instructional Strategies: Improving Reading Comprehension

3 Credits
Provides an overview of reading comprehension with emphasis on teaching students with exceptional learning needs. Attention is given to building a knowledge base and analyzing text to enable comprehension skills and teaching comprehension strategies. Meets with SPED 4570.

CURR 4067 - TeachSpecialEd.com: Language and Communication in Diverse Learners

3 Credits
Places the needs of exceptional learners in the larger context of cultural differences and diversity with a focus on language and communication. Language development and communication styles are covered. Teaching second language learners. Augmentative, alternative and assistive communication development is addressed. Meets with SPED 4580.

CURR 4068 - TeachSpecialEd.com: Collaboration and Instructional Planning in Individual Education Programs (IEP)

3 Credits
Emphasizes developing standards-based IEPs in accordance with Idea requirements. Introduces models of collaboration and highlights developing collaboration skills to enhance effectiveness of the beginning teacher in development and implementation of IEPs. Meets with SPED 4860.

CURR 4069 - TeachSpecialEd.com: Professional and Ethical Practices

3 Credits
Focuses on the ethical standards and principles of the profession. Ethical issues related to assessment, decision making, instruction, working with agencies, and families/guardians of children with exceptional learning needs are covered. Meets with SPED 4870.

CURR 4100 - Introduction to Technology in Education

2 Credits
Covers the fundamental concepts of computer uses in education. The course is designed for practicing or prospective educators who wish to explore computer uses in the classroom. Demonstrations of classroom activities, modern applications, and electronic mail will be conducted.

CURR 4102 - Selected Topics in Education Technology

1-4 Credits
Offered by guest lecturers to the university or by regular faculty where special topics or special needs arise. Examples of appropriate topics include the study of hypermedia, desktop publishing in educational settings, the application of microcomputers to a field or subject area, or the study of advanced technologies such as a videodisk integration. Topics and prerequisites to be announced.

CURR 4103 - Technology for the Learner with Special Needs

3 Credits
Participants will review and synthesize literature on a broad variety of technological solutions that meet the needs of special learners (with different school-based disabilities). Students will also conduct investigations into the use of adaptive devices and assistive technologies, demonstrate their use, and design learning environments to support the learner's needs for education in the least restrictive environment. Meets with CURR 5122.

CURR 4131 - Web-Based Delivery of Training

1-3 Credits
This series of six half-credit modules addresses a range of topics relating to web-based delivery of training. The topic mix for the modules evolves as the technology evolves. Students must take modules in multiples of two. Meets with CURR 5131.

CURR 4170 - Intro to Technology in Education

3 Credits
This course explores the foundations, strategies, and tools for using technology as a means of engaging all students within inclusive educational settings. A focus is placed on universal design for learning (UDL) as a framework for selecting, evaluating, and implementing educational technology hardware and software. For students in the Special Education Licensure. Meets with CURR 5170.

CURR 4440 - Selected Topics in Reading Education

1-6 Credits
Selected topics and issues in reading education will be explored in depth. Examples of special topics include: Introduction to Whole Language; Whole Language and Phonics Instruction; Reading; Writing and Spelling Connections; and others as issues arise. Prer., Bachelor's degree in Education or related field.

CURR 4504 - Topics in Teaching Science

1-4 Credits
Explores selected topics in science teaching. Topics will vary each time course is offered. Meets with CURR 5504.

CURR 4800 - Schools, Society, and Diversity

3 Credits
Emphasizing the foundations of American education through a contemporary lens, the course investigates multiple dimensions of diversity and society impacting today's schools. Implications for innovative educational curricula and pedagogy are explored. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer. or coreq., TED 3010, Sophomore standing. Meets with CURR 5800.

CURR 4801 - Creating Culturally Responsive Pedagogy

3 Credits
Provides educators with a framework for teaching about privilege and oppression. Designed to enhance the commitment to culturally responsive pedagogy and inclusive classrooms. Emphasizes pedagogical approaches to teaching diverse populations. Includes hands-on activities. Meets with CURR 5801.

CURR 5000 - Foundations: History and Research in Curriculum Studies

3 Credits
Designed to foster understanding of historical, philosophical, psychological, cultural, and social foundations of curriculum and instruction, and the impact of these constructs on schools, teachers, and students. Curriculum development, implementation, and evaluation will be studied while encouraging educators to implement historical, research-based strategies in the classroom. Prer., Graduate students only.

CURR 5002 - Issues, Strategies, and Models in Curriculum Design

3 Credits
Designed to prepare students to write challenging, differentiated, and effective curricula

for a variety of learners. A variety of curriculum models and strategies will be explored. Prereq., CURR 5000. Graduate students only.

CURR 5009 - Succeeding at UCCS

1 Credit
Designed to provide an overview of education at UCCS. It is intended for students who have not attended K-12 school in the U.S. or American-style schools abroad. A foundational orientation course that will facilitate student success on campus.

CURR 5010 - P-20 Education in the USA

1 Credit
This course provides an overview of American education from preschool through college levels (P-20) for international students who have not attended K-12 school in the U.S. It includes foundational information on topics relevant to American schooling, including funding, legal issues, governance, and educational systems.

CURR 5011 - Education Profession: Its Bases and Contexts

3 Credits
Philosophical and historical bases of current educational issues, the role of education in a democratic society, reciprocal rights and responsibilities in teaching, the ethics of teacher decision making, fostering effective home-school and community-school relationships. Prer., Acceptance into COE Alternative Licensure Program.

CURR 5012 - Understanding Learners and Learning

3 Credits
Understanding human developmental processes and variations; understanding how factors in the home, school, and the community may affect learners; understanding diverse student populations; understanding learning processes and strategies that foster student learning. Prer., Acceptance into COE Alternative Licensure Program.

CURR 5013 - Instructional/Classroom Management Strategies I - Elementary

3 Credits
Instructional methods, standards-based curriculum, materials classroom management and discipline, reading and writing literacy teaching and learning, assessment, and integrating curriculum across content and with technology. Prer., Admission into COE Alternative Licensure Program.

CURR 5014 - Secondary - Instructional/Classroom Management Strategies I

3 Credits
General teaching strategies designed to promote learning and the use of literacy in secondary content areas. Specific strategies for developing standards-based curriculum and methods in particular subject areas. Technological supports; developing assessment and evaluation strategies, classroom management strategies. Open to graduate students only. Prer., Acceptance into COE Alternative Licensure Program.

CURR 5015 - Instructional/Classroom Management Strategies II - Elementary

2-4 Credits
Continuation of CURR 5013 with emphasis on math and reading methods, analyzing results, and reflecting on the teaching process. Prer., Acceptance into COE Alternative Licensure Program.

CURR 5016 - Secondary - Instructional/Classroom Management Strategies II

3 Credits
Continuation of CURR 5014 with emphasis on applying strategies, analyzing results, and reflecting on the teaching process. Open to graduate students only. Prer., Acceptance into the COE Alternative Licensure Program.

CURR 5017 - School Residency and Teaching Seminar - Elementary

3-6 Credits
Full-time service in a school as a resident teacher planning, delivering, and evaluating instruction, managing the classroom environment and student behavior, developing collaborative relationships with parents and colleagues. Prer., Acceptance into COE Alternative Licensure Program.

CURR 5018 - Alternative Teacher Seminar in Secondary Education I

3 Credits
Supervised candidates in their first semester with an Alternative Teacher License plan, deliver, and reflect on their instruction; manage their classrooms; and begin a portfolio of evidence of proficiency in Colorado teacher standards. Hybrid format; five on-campus sessions required. Prer., Graduate Students/Alternative Licensure Program Students Only.

CURR 5019 - Teaching Seminar in Elementary Education

3 Credits
Exploration of learning from theory and practice; developing and presenting a teaching portfolio; developing a problem-based approach to teaching; self-analysis and reflection on teaching. Prer., Acceptance into the COE Alternative Licensure Program. $25.00 additional course fee required.

CURR 5020 - Alternative Teacher Seminar in Secondary Education II

6 Credits
Second semester of full-time teaching supervised by UCCS faculty. Candidates synthesize theory and practice as they finalize an electronic portfolio of evidence demonstrating their proficiency in Colorado teacher standards. Hybrid format; five on-campus sessions required. Prer., CURR 5018, Graduate students/ Alternative Licensure Program students only.

CURR 5090 - Master's Research Project

3 Credits
During this course the student will complete a research paper/project which investigates a topic of specific interest to the student under the guidance of the faculty member. This project serves as the comprehensive exam for the C & I master's degree. Open to graduate students only. Prer., Graduate acceptance in Curriculum and Instruction Master's Degree, LEAD 5700.

CURR 5100 - Introduction to Technology in Education

2 Credits
Introduction to the fundamentals of microcomputer use in the classroom. The course covers a variety of educational applications including information processing, teacher utilities, problem solving in various programming environments, selection of software and management of hardware, and other relevant topics. Coreq., CURR 5101.

CURR 5101 - Introduction to Technology in Education Laboratory

1 Credit
Accompanies CURR 5100. Participants will individually use microcomputers to experience the methods and outcomes of hands-on activities. Note: $20 lab fee required. Coreq., CURR 5100.

CURR 5110 - Evaluation of Computer-Based Training and Education Programs

3 Credits
Instructional designers are responsible for validating the effectiveness of their training or educational programs. This course covers the design of a program evaluation, design and application of measures and instruments, presentation of formative and summative evaluation reports, and the evaluation of cost effectiveness. Prer., CURR 5001.

CURR 5120 - Project

3 Credits
Students will be required to design and implement a project involving the practical application of the principles and techniques addressed by the degree program. Details will be arranged through the student's advisor. Projects based on activities in the field are encouraged. Prer., CURR 5212 and CURR 5213.

CURR 5121 - Selected Topics in Educational Technology

1-3 Credits
Graduate level courses to be offered by guest lecturers to the university or by regular faculty where special topics or special needs arise. Examples of appropriate topics include the study of hypermedia, desktop publishing in educational fields or settings, the application of microcomputers to a field or subject area, or the study of advanced technologies such as videodisk integration. Topics and prerequisites to be announced. Course cannot be used to satisfy graduate degree requirements.

CURR 5122 - Technology for the Learner with Special Needs

3 Credits
Students will synthesize literature on a variety of technological solutions that meet the needs of special learners, conduct investigations into the use of adaptive devices and assistive technologies, demonstrate their use, and design learning environments that support the learner in the least restrictive environment. Meets with CURR 4103.

CURR 5123 - Field-based Practicum in Educational Computing and Technology

1-4 Credits
Students will develop and complete under the direction of a faculty member an in-depth field experience involving educational technology in an educational setting. The specifics of the investigation and the topic are a joint decision by the student and the faculty member. The meeting times, expectations,and evaluations are arranged with the faculty member. Students must have written consent of the instructor. Students using field experience for degree purposes should have the written consent of their advisor. Students are expected to submit a written proposal of their work to the instructor involved. Suggested examples of field experiences are as follows: (1) Work with students in lab situations to acquire computer skills, (2) develop, design, and evaluate curricular programs for implementation of computer skills at the district, school, or classroom level, (3) develop, design, and field test educational computer software in an educational setting.

CURR 5130 - Multimedia Development

3 Credits
This series of six half-credit modules addresses a range of topics relating to multimedia development. The topic mix for the modules evolves as the technology evolves. Students must take modules in multiples of two. Graduate credit will involve a review of research literature on multimedia use in training. Prer., CURR 5131. Meets with CURR 4130.

CURR 5131 - Web-Based Delivery of Training

1-3 Credits
This series of six half-credit modules addresses a range of topics relating to web-based delivery of training. The topic mix for the modules evolves as the technology evolves. Students must take modules in multiples of two. A review of the literature on web applications of media analysis will be required for graduate credit. Meets with CURR 4131.

CURR 5140 - Graphics Design

1-3 Credits
This series of six half-credit modules addresses a range of topics relating to graphics design. The topic mix includes graphics design, desktop publishing, and a variety of graphics applications. Students must take modules in multiples of two. An instruction design/visual literacy submission will be required for graduate credit.

CURR 5150 - Instructional Message Design

3 Credits
Design of instructional environments that support effective learning. Environments may include computer-based instruction, web designs and computer-augmented classrooms.

CURR 5151 - Instructional Design I

3 Credits
Provides an introduction to the major theories and principles of systematic instructional design and evaluation. Students will be required to create, field test, and evaluate their instructional designs. Prer., CURR 5150.

CURR 5152 - Instructional Design II

3 Credits
Building upon the theories and principles of instructional design introduced in CURR 5151, this course will explore the application of ID in a broad spectrum of environments. Field work may be required. Prer., CURR 5151.

CURR 5153 - Authoring

3 Credits
Students will learn to use software tools for media integration and the development of computer-based training. Topics include navigation design coding, CMI, and cross-platform integration. The primary application used is AUTHORWARE. Prer., CURR 5130 or instructor's permission.

CURR 5154 - Technologies for Computer-Based Training and Assisted Instruction

3 Credits
Hardware and software technologies that support computer-based training and computer-assisted instruction. Students will be required to present their findings in class.

CURR 5162 - Practicum Instructional Technology

6 Credits
Students will meet with course instructor to design a CBT project (corporate) or classroom interventions for both students and teachers (educator). Prer., CURR 5152.

CURR 5170 - Intro to Technology in Education

3 Credits
This course explores the foundations, strategies, and tools for using technology as a means of engaging all students within inclusive educational settings. A focus is placed on universal design for learning (UDL) as a framework for selecting, evaluating, and implementing educational technology hardware and software. For students in the Special Education Licensure. Meets with CURR 4170.

CURR 5171 - K-12 Web-Based Educational Resources

3 Credits
Students will read current literature involving using the Internet in the K-12 curriculum as well as evaluate various web-based educational resources to use in educational settings. Students will design and develop several lessons/units involving web-based resources in this hands-on class.

CURR 5172 - Multimedia Development for K-12 Educators

3 Credits
This course is designed for educators who want to develop interactive multimedia technology through a hands-on approach. The course provides students with an overview of multimedia/hypermedia technology, devoted primarily to interactive, collaborative, multidisciplinary and student-centered hands-on activities.

CURR 5201 - Foundations of Gifted Education

3 Credits
An introductory course which provides the foundation necessary for future courses and the framework needed to understand gifted and talented learners. Includes: a historical survey of the field, definitions, basic terminology, theories of giftedness, models, and characteristics of the gifted and talented. How to apply this knowledge to plan for the academic achievement and learning-related affective development of these diverse students will be covered.

CURR 5202 - Assessment and Identification of Gifted and Talented Students

4 Credits
Explores the rationale of using multiple criteria and information from a variety of sources to identify gifted students and to assess their needs. The selection and utilization of appropriate instruments and methods applicable to a wide range of student profiles (culturally and ethnically diverse, linguistically different, and economically disadvantaged) will be elaborated upon, as will the use of relevant data to diagnose individual educational needs. Prer., CURR 5201. Graduate Level Only.

CURR 5203 - Psychology of the Gifted: Social, Emotional Needs, and Special Populations

4 Credits
Students explore current research, psychological theory and practical counseling techniques relevant to the social and emotional components of giftedness. Topics include perfectionism, gender issues, motivation, underachievement, and diverse populations; i.e., bilingual, special needs, disadvantaged, highly gifted. The ability to evaluate the need for specialized support services to assist with meeting the unique needs of these learners will also be addressed. Prer., CURR 5201. Graduate Level Only.

CURR 5204 - Under-Identified and Under-Served: Giftedness in Poverty and Culturally Diverse Backgrounds

2 Credits
The goal of this course is to 1) Increase the identification of gifted learners from poverty and culturally diverse backgrounds. 2) Increase teachers awareness of cultural and social nuances of giftedness in poverty and culturally diverse groups. 3) Equip teachers with the tools to create, modify and deliver gifted programs and services to this group of gifted students. 4) Engage and retain students with these characteristics in gifted programs. Graduate Level Only.

CURR 5205 - Early Childhood Gifted Education

1 Credit
This course is designed to provide participants with an understanding of 1) characteristics and needs for young gifted children, 2) environmental conditions and instructional strategies that support young gifted children, 3) programming for young gifted children, 4) early childhood assessment tools, and 5) current issues in early childhood gifted education. Graduate Level Only.

CURR 5206 - Creativity in Gifted Education

3 Credits
This course is designed to provide participants with an understanding of 1) definitions and theories of creativity, 2) the relation of intelligence, creativity, and non-intellectual factors with the constructs of giftedness, 3) research on cognition and creativity, 4) environmental support of the creative process, and 5) assessment of and programming for creative children. Graduate Level Only. Prer. CURR 5201.

CURR 5207 - Under-identified and Underserved: Gifted Girls

2 Credits
This course is designed to 1) Increase identification of gifted girls, 2) Equip the teacher with skills to develop and improve services for this under represented population in gifted programs, 3) Equip the teacher to become an advocate for gifted girls with parents, educators, and administrators. Graduate Level Only.

CURR 5210 - Arts for the Gifted

3 Credits
Explores a variety of arts activities for the elementary and middle grades. There will be a focus on a multi-faceted approach to teaching arts within creative, stimulating environments where the gifted student can evolve and thrive. Meets with SPED 5590.

CURR 5211 - Curriculum Models and Aligned Programming for Gifted Students

3 Credits
Provides the foundation for the development of differentiated curricula for gifted students. Methods, materials, and curriculum models are reviewed and/or introduced. Other topics include: effective teaching strategies for gifted students, adapting curriculum for individual differences, acceleration, the organization of curriculum for the gifted (scope and sequence; the issues related to integrated, interdisciplinary curriculum), teaching higher level cognitive skills, creative thinking, project and problem-based learning, critical thinking, logical thinking, and decision making.

CURR 5212 - Reading and Language Arts for the Gifted

3 Credits
Explores a wide variety of reading and writing activities for gifted learners. Children's and adolescent literature, biography, independent study, creative dynamics and expository and creative writing are among the many topic areas addressed. Meets with SPED 5620.

CURR 5213 - Social Studies and Humanities for the Gifted

3 Credits
Addresses the teaching of social studies and the humanities to gifted and talented students, grades K-12. An integrated, holistic approach to social studies is emphasized. Meets with SPED 5630.

CURR 5214 - Differentiated Instruction and Research-based Strategies for Teaching the Gifted

3 Credits
Focuses on strategies for teaching gifted and talented learners. Emphasis is placed on instructional decision making based on the educational characteristics (learner profile) and subsequent modification within the classroom environment. Research-based instructional strategies for gifted and talented learners will be explored in addition to classroom-based differentiated instruction; individualization; flexible grouping strategies; dialogue and questioning strategies; enrichment, and instructional responsiveness to the affective needs of gifted learners.

CURR 5215 - Gifted Program Leadership

3 Credits
Examines the theoretical and practical aspects of instructional programs for gifted and talented students at the district and school levels. Develop skills and strategies for working collaboratively with students, parents, guardians, classroom teachers and administrators in the development, design and implementation of programs and services. Develop the ability to evaluate various program options and instructional strategies for their effect on student learning and achievement.

CURR 5220 - Creative Problem Solving and Future Problem Solving for Gifted Learners

3 Credits
Covers four areas: creativity, problem solving, future studies, and future problem solving. Course content will focus on both the theoretical frameworks underlying each topic as well as concomitant teaching strategies. Meets with SPED 5640.

CURR 5230 - Gifted and Talented Practicum

3 Credits
Aims at giving students a chance to work and practice what they have learned in gifted education courses. Students are expected to develop and implement a proposal outlining the intended field experience and will meet regularly with a faculty member to develop and enhance skills in teaching the gifted.

CURR 5301 - Mathematical Connections and Concepts

3 Credits
Exploration of current mathematics curriculum topics in ways which will allow students to develop deeper conceptual knowledge and a better understanding of the connections between various mathematical topics. Applications of mathematics to other disciplines. Historical background of secondary curriculum.

CURR 5302 - Leadership & Mentoring in the Mathematics Classroom

3 Credits
Overview of the methods, materials, and curricula required to develop leadership in the classroom and in developing mathematics curriculum and instruction. Graduate Level Only.

CURR 5303 - Quantitative Literacy in American Schools

3 Credits
An overview of essential standards-based mathematics in today's schools to include effects of building a strong sense of number (number sense), real-world application, and discipline integration on becoming mathematically literate will be surveyed, including developing teaching and planning strategies for enhancing quantitative literacy and deep mathematical understanding.

CURR 5304 - Mathematics and Cognition

3 Credits
How students approach, process, and apply mathematical tasks based on current cognitive theories and brain research will lead this course. Problem solving and reasoning, via Cognitively Guided Instruction, will be emphasized, including incorporation of concrete manipulatives, interactive technologies, and higher-order thinking.

CURR 5305 - Teaching and Assessing Manipulative-Based Mathematical Inquiry

3 Credits
Using, integrating, and assessing K-12 students' explorations with manipulatives through performance-based, alternative assessments will be emphasized. Students will be encouraged to create concrete strategies and assessment tools, ask questions, and encourage synthesis while gathering useful information about how K-12 students think and feel about mathematical skills and tasks.

CURR 5400 - Teaching Reading and Writing in Content Areas

3 Credits
Format variations from content area to content area, materials, equipment, readability of content materials, vocabulary, variations in comprehension, and variations in study procedures.

CURR 5401 - Teaching Reading in the Elementary School

3 Credits
Comparative analysis of predominant current philosophies/methodologies of reading instruction, current organizational procedures, skill development, and comprehension activities in the elementary school.

CURR 5402 - Teaching the Basal

3 Credits
Application of current instructional techniques in reading to basal readers in use. Focus on the instruction of average to below average readers.

CURR 5403 - Intro to Clinical Experiences

3 Credits
Introduction to diagnostic, evaluative, prescriptive, and remedial principles. Tutorial approach.

CURR 5404 - Facilitating Reading in Preschool and Kindergarten Classrooms

3 Credits
Historical background of reading readiness and strategies for advancing literacy in the preschool and kindergarten classroom.

CURR 5405 - Teaching Reading to High Risk Children: Let's Teach Our Children to Read

1-3 Credits
Presents the basic information relative to teaching reading to at-risk students. Provides a foundation in the areas of creating a viable reading program: instructing an appropriate lesson, diagnosing common problems and remediation of common issues in reading performance. Focuses on the direct application of

strategies to classroom instruction. Open to graduate students only.

CURR 5406 - Issues and Trends in Literacy

3 Credits
This course presents an in-depth study of the predominant current researched-based methodologies and philosophies of literacy instruction. Prer., Graduate students only.

CURR 5407 - Teaching Content and Disciplinary Literacy to Adolescents

3 Credits
Alternative licensure candidates will learn the reading, writing, speaking, and listening skills and strategies unique to their discipline and will generate instructional materials, lesson plans, and other evidence that they can teach their students. Open to Alternative Licensure Program students only.

CURR 5410 - Informal Diagnostic and Remedial Techniques of Reading

3 Credits
Causes of low reading ability and techniques employed in teaching the poor reader, diagnosis, motivation, and skills.

CURR 5411 - Psycholinguistics and Reading

3 Credits
An analysis of the reading process from a psycholinguistic orientation. Emphasis on research studies and selected readings dealing with linguistic development and appropriate implications for reading acquisition. Prer., CURR 5401 or CURR 5410.

CURR 5412 - The Reading-Writing Connection

3 Credits
Explores the relationships that exist between reading(decoding) and writing (encoding). Both reading and writing are viewed as inseparable parts of the complete language arts complex. Reading to write and writing to read are both important focus areas of this course.

CURR 5413 - Literacy and Research: Effective Schools, Teachers and School Improvement

3 Credits
Research-based knowledge, practices and procedures involving school organization of literacy programs, current laws and initiatives, selection of staff, roles and responsibilities of teachers and administrators, professional development, resources and materials, scheduling, budget, and evaluation of students and staff. Prer., 6 hours of instruction in reading or consent of instructor.

CURR 5414 - Literacy Assessment, Diagnosis and Evaluation

3 Credits
The course connects literacy research, theory and practice to literacy assessments that are administered to individual students in grades K-12 for the purpose of analyzing results, diagnosing individual needs, and developing a data-based program of intervention to increase reading competency. Prer., 6 hours of instruction in reading or consent of instructor.

CURR 5415 - Foundations of Literacy: Theories and Models

3 Credits
Examines foundational theories and models that have historically shaped the field of literacy. Emphasis is placed on connections between theory and practice. Prer., Graduate students only.

CURR 5420 - Children's and Adolescents' Literature

3 Credits
Reading and evaluation of books for children, information about children's books, children's interests in reading, important authors and illustrators, and problems in the guidance of reading.

CURR 5421 - Literature for Adolescents

3 Credits
Reading and evaluation of literature for adolescents. Emphasis on modern literature as well as literature by female and minority group authors. Meets with SPED 545.

CURR 5430 - Reading Clinical Procedures I (Elementary)

4 Credits
Supervised diagnosis of reading problems; evaluation instruments; pertinent research; case study approach. Prer., CURR 5410 or consent of instructor. Meets with CURR 5431.

CURR 5431 - Reading Clinic Procedures II (Secondary)

4 Credits
Supervised remediation of reading problems; methods and teaching materials; use of readability measures. Prer., CURR 5410 or consent of instructor. Meets with CURR 5430.

CURR 5432 - Supervised Practicum in Reading: Elementary

3 Credits
For advanced students working toward reading certification at the elementary level. Supervised field placements focusing on the application of program planning components. Prer., CURR 5410 and consent of instructor.

CURR 5433 - Supervised Practicum in Reading: Secondary

3 Credits
For advanced students working toward reading certification at the secondary level. Supervised field placements focusing on the application of program components. Prer., CURR 5410, CURR 5431, and consent instructor.

CURR 5434 - Capstone in Literacy Leadership

3 Credits
The course is the culminating experience for students in the Curriculum and Instruction MA: Literacy program. Students will demonstrate their mastery of best practices in literacy and the application of knowledge and current research in an educational setting. Students must have completed all prior coursework in the program.

CURR 5440 - Selected Topics in Reading Education

1-6 Credits
Selected topics and issues in reading education will be explored in depth. Examples of special topics include: Introduction to Whole Language; Whole Language and Phonics Instruction; Reading, Writing, and Spelling Connections; and others as issues arise. Prer., Bachelor's degree in Education or related field.

CURR 5462 - Elementary Literacy Methods

3 Credits
Elementary reading and writing literacy practice and strategies, methods, and materials with emphasis on Colorado Model Content Standards. Prer., Acceptance in ALP program.

CURR 5464 - Elementary Math Methods

3 Credits
Elementary mathematics strategies to successfully implement mathematics instruction with emphasis on problem solving, thinking, and addressing Colorado Content Math Standards. Prer., Acceptance into ALP program.

CURR 5491 - Secondary English Methods

3 Credits
Secondary English Methods gives an overview of instructional theory, methods, and materials in English and helps the students develop teaching strategies and address the Colorado model content standards. Prer., Only those admitted to and participating in ALP. Meets with TED 4910 and TED 5910.

CURR 5492 - Secondary Math Methods

3 Credits
Secondary Math Methods gives an overview of instructional theory, methods, and materials in math and helps students develop teaching strategies and address the Colorado model content standards. Prer., Only those admitted to and participating in ALP. Meets with TED 4920 and TED 5920.

CURR 5493 - Secondary Science Methods

3 Credits
Secondary Science Methods gives an overview of instructional theory, methods, and materials in science and helps students develop teaching strategies and address the Colorado model content standards. Prer., Only those students admitted to and participating in ALP. Meets with TED 4930 and TED 5930.

CURR 5494 - Secondary Social Studies Methods

3 Credits
Secondary Social Studies Methods gives an overview of instructional theory, methods, and materials in social studies and helps students develop teaching strategies and address the Colorado model content standards. Prer., Only those admitted to and participating in ALP. Meets with TED 4940 and TED 5940.

CURR 5495 - Spanish Methods

3 Credits
Overview of instructional theory, methods, and materials in the teaching and learning of Spanish. Candidates incorporate research-based instructional practices, technology, and assessment strategies that address the diverse needs of all learners. Prer., Admission to Alternative Licensure Program, first semester teaching on Alternative Teaching License.

CURR 5501 - Exploring the Science Curriculum

3 Credits
Explores the curriculum, instructional strategies, and foundations for teaching science K-12. The course presents a variety of strategies for creating and implementing science curriculum. Participants will acquire knowledge and skills necessary to implement a holistic approach to science teaching that considers knowledge, process skills, scientific attitudes, and mandated standards.

CURR 5502 - Developing Manipulative Materials for Science Teaching

3 Credits
Designed to enable teachers at all levels to develop manipulative science materials from easily available resources. Participants will develop and demonstrate materials for teaching science in a contemporary fashion on a limited budget.

CURR 5503 - Integrating Reading and Science

3 Credits
Familiarizes teachers with contemporary practices in science and reading education. Particular emphasis is placed on integrating "Learning-cycle" procedures from science education with "Marginal gloss" and other "Whole language" techniques from reading education. Many activities with direct application to classroom practice will be presented.

CURR 5504 - Topics in Teaching Science

1-4 Credits
Explores selected topics in science teaching. Topics will vary each time course is offered. Prer., Bachelor's degree in Education or related field. Meets with CURR 4504.

CURR 5510 - Science and Environmental Education for Gifted Students

3 Credits
Designed for K-12 educators interested in developing their ability to work with gifted and talented students in science education and environmental education. The course emphasizes using and developing science resources for gifted and talented students. It also explores contemporary methodology for teaching science to gifted and talented students. Prer., Teaching experience.

CURR 5511 - Teaching Energy & Environment

3 Credits
Focuses on contemporary energy and environmental topics and issues. It is designed for elementary through secondary teachers. Emphasis is placed on clarifying environmental issues; showing relationships between energy, environment, and society.

CURR 5512 - Energy and Environmental Activities

3 Credits
Focuses on developing and utilizing activities, games, and role playing simulations in the area of energy, environment and conservation. This course is designed to enable classroom teachers at all levels to present and clarify various related concepts.

CURR 5513 - Activities for Teaching Earth Science

2 Credits
Focuses on using and developing classroom activities for anyone teaching earth science topics. Most activities presented are adaptable from preschool through high school. The course will cover five main topics including: space, land, water, air, and the earth's past.

CURR 5514 - Activities for Teaching Weather

3 Credits
Provides many classroom activities demonstrating various aspects of weather and weather prediction. Topics include aspects of weather ranging from local up-slope caused by an "Albuquerque Low" to global warming. Activities presented will be applicable for elementary through high school grades.

CURR 5520 - Activities for Teaching Physical Science

3 Credits
Designed for teachers at all levels and includes a wide variety of activities for teaching physical science concepts. Contemporary science teaching methods will be modeled to develop physical science concepts through manipulative and inquiry experiences.

CURR 5521 - Activities for Teaching Electricity and Magnetism

2 Credits
Provides classroom activities involving electricity and magnetism for teachers. Activities are designed for use with materials easily available from local sources. The course covers a wide variety of activities ranging from simple interactions of magnets to generation of electricity.

CURR 5522 - Teaching Cosmology - Explaining the Universe

3 Credits
Utilizes the PBS series "Stephen Hawking's Universe" as a basis for presenting an overview of the universe from its theoretical origins to its ultimate demise. The course will focus on understanding the broad principles and incorporating cosmology into classroom instruction. Open to graduate students only. Prer., Acceptance into Master's Program.

CURR 5523 - The Science of Yellowstone National Park for Teachers

3 Credits
This field course in Yellowstone National Park focuses on science inherent to its setting. It provides hikes, experiences, and investigations of the park's geology, chemistry, physics, quantum optics, and ecology. Students will explore natural features seen by few tourists including geysers, waterfalls, hot springs, wildlife, thermophiles, travertine formations, and columnar basalt cliffs. Prer., Graduate students only, teaching experience required.

CURR 5530 - Cutting Edge Science for Cutting Edge Teachers

3 Credits
Focuses on the readings from contemporary journals, magazines, databases, etc. It will bring participants up-to-date with recent developments in science and technology. It allows teachers to explore current scientific information along with strategies for including new information in their science teaching from K-12.

CURR 5670 - Philosophy, Organization, and Current Issues in Middle Level Schools

3 Credits
Philosophy and goals of middle level education and current issues in middle level education: testing and test results, grouping students, staffing and staffing design, teaming structures, new and innovative programs affecting middle level schools.

CURR 5671 - Introduction to Middle Level Schools

3 Credits
Overview of the middle school: definition of terms, organization of the middle school, philosophy, staffing and staffing design, teaming, interdisciplinary teaching, programs that are unique to middle level schools, and scheduling.

CURR 5672 - Curriculum, Instruction, and Assessment for Middle Level Schools

3 Credits
Effective middle school curriculum that is responsive to the needs of the early adolescent will be the focus of this course. Topics that will be covered include the components of middle level curriculum, instructional delivery techniques and strategies, and multifaceted evaluation methods. Various models will be presented and practitioners will provide their insight into curriculum models.

CURR 5673 - Communication and Technology in the Middle Level School

3 Credits
Communication in a middle level school is unique in terms of parent, peer, and student communication. Technology and how it has affected communication in middle level schools will be explored.

CURR 5675 - Interdisciplinary Teaming for Middle Level Teachers

3 Credits
Creating a classroom atmosphere where maximum learning can take place. Topics will include: team organization, teaching through thematic units, block scheduling, guidelines for teaching middle level learners through teaming, and interdisciplinary approaches.

CURR 5676 - Leadership in the Middle Level School

3 Credits
The course will examine the role of teachers and administrators in the middle level school. Topics that will be covered include: organization of the middle level school, philosophy, staffing and staffing design, role of the team leader, teaming, site-based management, transition programs, school/community relations, school climate, instructional leadership, decision-making, and providing for a safe learning environment.

CURR 5700 - Introduction to ESL/Multicultural Education

3 Credits
Provides a comprehensive survey of programs for the linguistically diverse and multicultural education student. Includes history and legislation of bilingual/linguistically diverse education, instructional models, philosophies, theories of bilingual/linguistically diverse education, the culture of the linguistically diverse classroom, instructional strategies and important considerations for teaching the limited English proficient student.

CURR 5701 - Materials and Methods: Linguistically Diverse/Multicultural Education

3 Credits
Provides an in-depth study of curriculum options available for the LDE classroom. Presents, reviews, and critiques specific methods and strategies for teaching language minority students. Emphasizes methods for implementing cooperative learning strategies among students. Prer., CURR 5700 or TED 3700.

CURR 5702 - Literacy for All Learners

3 Credits
Presents current and emerging philosophies and methods on teaching reading to all learners. Includes review of materials, strategies for inclusive teaching of reading and writing. Prer., Graduate students only.

CURR 5703 - Assessment: Methods, Materials, and Theories for ELLs

3 Credits
Prepares teachers to assess and evaluate ESL students in a field-based setting. Includes particular assessment instruments, mediation strategies and materials, and formal and informal diagnostic strategies. Covers both theoretical and applied aspects of assessing language learning and teaching. Prer., CURR 5700 or TED 3700.

CURR 5704 - Practicum in ESL/Multicultural Education

3 Credits
A field-based, standards-based course that provides at least 150 hours of site-based work in addition to in-school work. Students must have a classroom to implement the field-based work. Prer., CURR 5700, CURR 5701, CURR 5702, and CURR 5703.

CURR 5705 - Second Language Acquisition: Capstone

3 Credits
Presents broad survey of second language acquisition research. Stresses theoretical concerns, research findings, practical applications to teaching second languages. Gives emphasis to applied second language acquisition, cultural awareness, social and economic factors that contribute to ELL's success in schools. Prer., CURR 5704.

CURR 5707 - Pro-Seminar: Parent and Community Involvement

3 Credits
Focuses on models and strategies for improving parent and community involvement in the schools. Discusses administrative concerns, such as parent advisory councils, instructional concerns, such as helping children with school assignments, and family literacy issues and programs. Field-based assignments are required.

CURR 5708 - Research Issues in ESL/Multicultural Education

3 Credits
Offers practical experience in review, critique, and conceptualization of contemporary research studies in second language acquisition. Provides experiences in the design of classroom-based evaluation systems. Prer., CURR 5704, CURR 5705.

CURR 5709 - Theories of Learning and Development

3 Credits
Examines current theory and research on child development, learning, and motivation. Emphasizes the relationship between and among development, learning, motivation, and how theory and research can inform instructional decisions in the elementary classroom. Prer., CURR 5705.

CURR 5710 - Education and Sociolinguistics

3 Credits
Examines current theory and research on child development, learning, and motivation. Emphasizes the relationship between and among development, learning, motivation, and theory and how research can inform instructional decisions in the elementary classroom. Prer., CURR 5705.

CURR 5711 - Intro to Research and Statistics

3 Credits
Introduces measures of central tendency, variability, percentiles, standard scores, and correlation. Explores basic concepts in statistical inference by evaluating, designing, and analysis of education research. A minor research project will be completed. Prer,. CURR 5709 and CURR 5710.

CURR 5712 - Ethnographic Methods in Educational Research

3 Credits
Explores the history of ethnography in cultural anthropology and its translation into educational research. Students learn about and practice participant observation, interviewing, journal writing, artifact searches, data processes, strategies for qualitative analysis and interpretation and styles of reporting. Open only to graduate students and unclassified students with a degree. Prer., CURR 5711 and LEAD 5700.

CURR 5713 - Language and Linguistics

3 Credits
Presents basic components of language structure and language use, emphasizing relevance for teaching culturally and linguistically diverse students. Prer., Open to graduate students only. Meets with CURR 3713.

CURR 5740 - ESL Professional Development Courses for Special Education Teachers

2-6 Credits
The purpose of these course modules is to present English as a second language professional development modules that will train special education teachers to effectively serve the needs of English language learners with disabilities. Each module is for 2 credit hours.

CURR 5800 - Schools, Society, and Diversity

3 Credits
Emphasizing the foundations of American education through a contemporary lens, the course investigates multiple dimensions of diversity and society impacting today's schools. Implications for innovative educational curricula and pedagogy are explored through evaluation of graduate-level readings and research. Prer. or coreq., TED 3010. Meets with CURR 4800.

CURR 5801 - Creating Culturally Responsive Pedagogy

3 Credits
Provides educators with a framework for teaching about privilege and oppression. Designed to enhance the commitment to culturally responsive pedagogy and inclusive classrooms. Emphasizes pedagogical approaches to teaching diverse populations. Includes hands-on activities. Meets with CURR 4801.

CURR 7000 - Master's Thesis

1-6 Credits
Master's Thesis

CURR 9500 - Independent Study in Reading

1-5 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics ofthe investigation and the topic are a joint decision by the student and faculty member. The meeting times, expectations, and evaluation are arranged with the faculty member. Students must have written consent off the instructor. Students using independent study for degree purposes should have the written consent of their advisors.

CURR 9600 - Independent Study in Curriculum

1-3 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision between the student and faculty member. The meeting times, expectations, and evaluations are arranged with the faculty member. Students must have written consent of the instructor.

CURR 9601 - Independent Study in Junior High/Middle School Curriculum

1-3 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics of the investigation and the topics are a joint decision between the student and the faculty member. The meeting times, expectations, and evaluation are arranged with the faculty member. Students must have written consent of the instructor.

CURR 9602 - Indep Study in Gifted/Talented

1-3 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision between the student and faculty member. The meeting times, expectations, and evaluation are to be arranged with the faculty member. Students must have written consent of the instructor.

CURR 9603 - Independent Study in Educational Computing and Technology

1-3 Credits
Designed to accommodate students who wish to pursue study of a special topic of interest. Approval must be sought from the instructor prior to registration. A proposal outlining the planned study, including readings and written reports to be submitted, should be filed during the first week of the semester. Sample topics for study: computers and the handicapped; research on computing in education; emerging technologies; artificial intelligence; hypermedia; desktop publishing; advanced graphics; and telecommunications in education.

CURR 9604 - Independent Study in Reading

1-3 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision by the student and faculty member. The meeting times, expectations, and evaluation are arranged with the faculty member. Students must have written consent of the instructor. Students using independent study for degree purposes should have the written consent of their advisors.

CURR 9990 - Candidate for Degree

0 Credits
Candidate for Degree

DNCE - Dance

DNCE 2700 - Fundamentals of Dance Technique

3 Credits
An introduction to dance technique. Students will focus on technique exercises, stretching, body alignment, choreography, and movement explorations. The course is a beginning dance class and the foundation for other dance classes. Additional outside work required. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

DNCE 3700 - Spec Topics in Dance Technique

3 Credits
Focus is on various forms of dance. Each semester the course will use technique, research, and performance to highlight a specific dance genre. Prer., DNCE 2700 or THTR 2700. Meets with THTR 3700.

DNCE 3710 - Basic Modern Dance Technique I

3 Credits
The class is designed to provide a foundation of modern dance technique. Students will experience full dance classes consisting of warm-up, technique exercises, stretching, body alignment, center exercises and cool down. Students will also participate in movement explorations through improvisation. The course will culminate in a modern dance performance. Additional outside work required. Prer., DNCE 2700 or consent of instructor.

DNCE 3720 -Basic Modern Dance Technique II

3 Credits
The class is designed for dancers who are at an intermediate level in modern dance technique and is a continuation of DNCE 3710. Students will participate in movement explorations where they can creatively engage the fundamentals of space, time and force through improvisation. The course will culminate in a modern dance performance. Additional outside work required. Prer., DNCE 2700, DNCE 3710, or consent of instructor.

DNCE 3730 - Jazz Dance Technique

3 Credits
Introduces the basic techniques of jazz dance, which are built upon knowledge of jazz terminology, rhythm, fundamental exercises, and the basic elements of dance. The course will culminate in a jazz dance performance. Additional outside work required. Prer., DNCE 2700 or consent of instructor.

DNCE 3740 - Ballet Dance Technique

3 Credits
Introduces the basic techniques of ballet, which are built upon knowledge of ballet terminology, fundamental exercises, and the basic elements of dance. Focuses on movement-oriented dance, comprised of stretching, barre warm-up exercises, simple terre a terre and jumping steps, and basic extended positions. Additional outside work required. Prer., DNCE 2700 or consent of instructor.

DNCE 4700 - Dance Composition

3 Credits
Students will study and apply the basic choreographic elements that go into creating an original dance. In a laboratory type setting, students will work on developing their own artistic voices through short movement compositions as well as give critique to others. Additional outside work required. Prer., DNCE 2700 or consent of instructor.

DNCE 4710 - Dance Composition 2

3 Credits
Students study and apply advanced choreographic elements that go into creating an original dance. Building on level one composition, this culminating course ends with a dance showcase. Prer., DNCE 4700.

DNCE 4900 - Spec Tpcs in Music and Dance:

3 Credits
Through the study of historical and contemporary convergences across music, sound, dance and movement, students will develop collaborative languages and methods in order to build and articulate original works. Topics will vary each semester. Prer., DNCE 2700 or consent of instructor. Meets with MUS 4900.

ECE - Electrical Engineering

ECE 1001 - Introduction to Robotics

3 Credits
An introductory course presenting foundational material in the design of robots. Topics include basic properties of sensors, motors, gears, drive mechanisms, control schemes and processors to guide and control robots. Lego kits will be used to implement student designs. Meets with ENGR 1001. College of Engineering students only.

ECE 1021 - Computer-Based Modeling and Methods of Engineering

3 Credits
Methodology for solving engineering problems is introduced. Fundamental features of the C programming language are presented and integrated with a variety of engineering examples

and applications. Pointer variables and structures will be used in the applications. Prer., ECE 1001, and either MATH 1320 or MATH 1350; College of Engineering students only.

ECE 1411 - Logic Circuits I

2 Credits
Fundamentals of Digital Electronics, Number Systems, Logic Gates, Boolean Algebra, Combinational Circuit Design, Binary Math, basic operation of Flip-flops and Latches, Logic Families, and Specifications, Introduction to microprocessors. Meets with ENGR 1411. College of Engineering students only.

ECE 2050 - Introduction to Physical Electronics

3 Credits
An introductory course on the fundamental properties of materials and semiconductors in preparation for a background in modern device physics and technology. Topics include: Crystal Structure, Quantum Theory of Solids, and Transport and Excess Carriers in Semiconductors. Coreq., MATH 3400, PES 2130. College of Engineering students only.

ECE 2205 - Circuits and Systems I

4 Credits
Modeling and analysis of analog circuits and linear systems. Kirchoff's current and voltage laws. Uses time-domain methods and s-domain transfer functions to solve differential equations of first and second-order RLC circuits with op amps. Transient and steady-state response to steps and complex exponentials. Zero-input, zero-state, and initial-state response. Introduction to circuit simulation. Prer., ECE 2610, Coreq., MATH 3400. College of Engineering students only.

ECE 2210 - Circuit Analysis I

3 Credits
Modeling and analysis of electrical devices and circuits, including operational amplifiers. Transient and steady state response using classical differential equation methods. Impulse and step responses. Prer., MATH 1360, ECE 1021. Coreq., MATH 2350, PES 2130. College of Engineering students only.

ECE 2411 - Logic Circuits II

2 Credits
Covers sequential circuits design and implementation. Topics include Mealy/Moore machine design, State encoding, states minimization, Verilog HDL modeling of logic circuits, Register Transfer Level Modeling of digital systems, and memory. Prer., ECE 1411; coreq., ECE 1021 or CS 2060. College of Engineering students only.

ECE 2610 - Introduction to Signals & Systems

4 Credits
Mathematical representation of signals and systems; spectrum representation; representation of signals by sample values; discrete-time filter characterization and response; the z-transform; continuous-time signals and linear, time-invariant systems; frequency response; continuous-time Fourier transform and application to system analysis. MATLAB basics with application to signals and systems. Includes lectures, demonstrations, and laboratory assignments. Prer., ECE 1021 or CS 2060, and MATH 1360; College of Engineering students only .

ECE 3001 - Electronic Projects

3 Credits
Designed for non-engineering majors. In the Fall semester, the principles of "How We Communicate" are introduced through hands-on building and testing of radio circuits. In the Spring semester, the principles of "How We Control" are introduced through hands-on building, programming, and testing of microcontrollers. The history, personalities, social and cultural impacts, economic and business impacts, and sustainability issues are integrated into the lecture material for the target technology. Approved for Compass Curriculum requirement: Advanced Core. Prer., Freshman level science course.

ECE 3020 - Semiconductor Devices I

3 Credits
An introduction to semiconductor devices used in modern microelectronic technologies. The course objective is to provide an understanding of the fundamental physical principles and concepts underlying the operation and use of the most important semiconductor devices. Prer., ECE 2050, and either ECE 2205 or ECE 2210. College of Engineering students only.

ECE 3110 - Electromagnetic Fields I

3 Credits
Static electric and magnetic field analysis, Poisson's and Laplace's equations, steady electric current, fields of steady electric currents, ferromagnetic materials, boundary-value problems for static fields, time-varying electric and magnetic fields, and Maxwell's equations and wave equations. Relationship between field and circuit theory. Prer., ECE 2205 or ECE 2210. College of Engineering students only.

ECE 3120 - Electromagnetic Fields II

3 Credits
Electromagnetic wave propagation in dielectric and conducting media: solutions to the wave equations, transmission lines, waveguides and resonators, antennas and radiation, uniform and non-uniform plane waves. Design involving considerations of electromagnetic fields. Prer., ECE 3110, MATH 3400. College of Engineering students only.

ECE 3205 - Circuits and Systems II

4 Credits
A continuation of topics introduced in ECE 2205. Also, phasors, sinusoidal steady-state response, impedance models, Fourier series and Laplace transforms. Computer-aided design of active and passive analog filters. Includes lectures, demonstrations, and laboratory assignments. Prer., ECE 2205. College of Engineering students only.

ECE 3210 - Electronics I

3 Credits
The application of semiconductor devices to the design of electronic circuits. Topics include diode circuits and applications, low frequency transistor amplifier design and switching theory. Prer., ECE 2205 or ECE 2210. College of Engineering students only.

ECE 3220 - Electronics II

3 Credits
Transistor models used in circuit design at high frequencies: multistage amplifier design, frequency response of amplifiers, feedback, operational amplifiers, and distortion. Prer., ECE 2205 and ECE 3210. College of Engineering students only.

ECE 3230 - Electronics Laboratory I

1 Credit
Design and implementation of power supplies, amplifiers with bipolar junction transistors, junction field effect transistors and MOSFETS. In addition, basic circuit design with operational amplifiers will also be performed.

Coreq., ECE 3210. College of Engineering students only.

ECE 3240 - Electronics Laboratory II

1 Credit
Continuation of ECE 3230. Design of differential amplifiers with discrete components, analysis of frequency response, frequency compensation techniques, feedback amplifier design, power amplifiers, oscillator and simple subsystem design. Prer., ECE 3230. Coreq., ECE 3220. College of Engineering students only.

ECE 3420 - Microprocessor Systems Lab

1 Credit
Introduction to microprocessor development systems and foundations of system design. Assembly language will be used in the development. Use of high-level languages will also be discussed. Prer., ECE 1411. Coreq., ECE 3430. College of Engineering students only.

ECE 3430 - Intro to Microcomputer Systems

3 Credits
Design of microcomputer systems including assembly language programming and interfacing techniques. Emphasis is on the practical application of microcomputers as solutions to engineering problems. Prer., ECE 1411. Coreq., ECE 3420. College of Engineering students only.

ECE 3440 - Microcomputer Systems Lab

1 Credit
Experiments are performed to program and interface microcomputer systems to design and implement microcomputer-based systems. Emphasis is on the application of the microcomputer as a tool to solve control and data acquisition problems. Prer., ECE 2411, ECE 3430. College of Engineering students only.

ECE 3510 - Linear System Theory

3 Credits
Characterization of linear systems by impulse response, convolution, transfer function. Linear differential equations and linear difference equations as models. Applications to circuits, electromechanical systems, etc. Transform methods include: Fourier series, Fourier transforms, and Laplace transforms. Introduction to state variables, and the state transition matrix. Use of a variety of models in design. Prer., ECE 3210, MATH 3400. Coreq., ECE 3520. College of Engineering students only.

ECE 3610 - Engineering Probability & Statistics

3 Credits
An introduction to probability and statistics with application to solving engineering problems. Includes the axioms of probability, random variables, density functions, distributions functions, expectations. Gaussian random variables, bivariate random variables, sums of independent random variables. Estimation of sample mean and variance. Monte Carlo simulation, binomial, hypergeometric, Poisson counting processes, confidence intervals, reliability, failure rates, the Weibull model, the log-normal model, estimation using regression. Introduction to random processes. Prer., MATH 2350. College of Engineering students only.

ECE 3910 - Power Systems I

3 Credits
Basic concepts and analytical methods in three-phase electric power systems: single-phase equivalent models; per-unit system of calculations; power, apparent power, and energy; basic properties of power systems elements; short-circuit current; voltage drop; and losses. Includes lectures and demonstrations. Prer., ECE 3205. Coreq. ECE 3110. College of Engineering students only.

ECE 4020 - Semiconductor Devices II

3 Credits
Advanced study of the electrical and transport properties of semiconducting and solid state devices and integrated device structures. Topics include: pn junction device structures, non-ideal effects in small geometry Mosfets, compound semiconducting devices, CCDs, negative conductance microwave devices. Prer., ECE 3020. College of Engineering students only. Meets with ECE 5020.

ECE 4040 - Introductory VLSI Fabrication Lab

1 Credit
Various types of VLSI fabrication processes such as thermal oxidation, rapid thermal annealing, diffusion, physical vapor deposition, ion implantation, photolithography and etching. In addition, students will use a variety of device characterization techniques available in the laboratory. Prer., ECE 4020, ECE 4080. College of Engineering students only.

ECE 4050 - Microelectronics IC Fabrication Laboratory

3 Credits
Independent experimental project in which students are expected to acquire the theoretical understanding of modern IC fabrication process, perform the IC processing and supporting measurements, and write detailed laboratory reports. Students should take ECE 4050 before ECE 4896. Prer., ECE 4020, ECE 4080. College of Engineering students only. Meets with ECE 5050.

ECE 4070 - Electronic Properties of Materials

3 Credits
Principles and applications of the electrical, optical, magnetic, and thermal properties of engineering electronic materials. The treatment is designed for students specializing in the areas of microelectronics, solid state, and electromagnetics. Prer., ECE 3050. College of Engineering students only. Meets with ECE 5070.

ECE 4080 - VLSI Processing

3 Credits
Introductory study of the various processes such as oxidation, diffusion, epitaxy, ion-implantation, photolithography, CVD, plasma processing, etc., used in contemporary fabrication of modern microelectronic technologies; use and understanding of process modeling programs used in design, fabrication, and simulation of MOSFET and bipolar microelectronics technologies. Prer., ECE 3020. College of Engineering students only. Meets with ECE 5080.

ECE 4095 - Nanotechnology I

3 Credits
Application to advanced semiconductors and oxide electronics in which electron-electron interactions dictate device operations is the final goal of the series. Advanced device technology in the nanometer scale era and advances in strongly correlated electron devices need specialized knowledge in many areas of quantum physics which involve Non-Equilibrium Green's Function (NEGF) formalism and advanced techniques of quantum field theory in condensed matter. Students pursuing MSEE and PhD programs are encouraged to have knowledge in these formalisms in order to conduct research in advanced areas of device physics. The treatment is essentially an engineering application of fundamental formalisms in practical applications. Only advanced undergraduates with an interest in MSEE and PhD

in Physics or Electrical Engineering may take this course with instructor permission. Meets with ECE 5095.

ECE 4110 - Electromagnetic Theory and Applications

3 Credits
An intermediate level fields course beginning with the classical development of Maxwell's equations and the Wave equation. Included are electrostatics, the steady magnetic field, plane-wave propagation, Poynting's vector, guided waves, transmission lines, wave guides, the interaction of fields and matter, and concluding with an introduction to the subject of radiation. Dirac-delta and Dyadic Green's function methods of problem solution are treated. Prer., ECE 3120. College of Engineering students only. Meets with ECE 5110.

ECE 4120 - Antenna Engineering

3 Credits
Antenna engineering theory based on electromagnetic radiation is introduced. Various antennas including linear wire, aperture/horn, printed-circuit, and arrays are introduced. The design, fabrication, and measurement of antennas are covered. Prer. or Coreq., ECE 3120. College of Engineering students only. Meets with ECE 5120.

ECE 4150 - Microwave Measurements Lab

1 Credit
Experiments with transmission lines and waveguide systems. Infrared imaging of electromagnetic fields. Measurement of antenna fields. Exposure to equipment and techniques used in microwave measurements. Design of microwave circuits. Coreq., ECE 3120. College of Engineering students only. Meets with ECE 5150.

ECE 4160 - Power and Energy

4 Credits
Topics include: magnetic circuits and materials, transformers, electromechanical energy conversion principles, introduction to rotating machines, synchronous machines, poly-phase induction machines, DC machines, stepper motors, single and two-phasemotors. Laboratory experiments on transformers, synchronous motors, induction motors, stepper motors and motor control circuits. Prer., ECE 3110, ECE 2205. College of Engineering students only.

ECE 4200 - Advanced Digital Design Lab

1 Credit
A design laboratory focusing on the design of digital systems in Verilog using the Digilent Spartan 3 FPGA prototyping board. A contemporary design environment consisting of the Xilinx ISE tool for implementation and ModelSim/QuestaSim for simulation will be utilized. Prer., ECE 4242. College of Engineering students only.

ECE 4211 - Rapid Prototyping with FPGAs

3 Credits
Field programmable gate arrays (FPGAs) are an important part of the overall design flow for application-specific integrated circuits (ASICs) because they offer the potential of allowing cheap hardware prototypes to be built to meet a narrow window of opportunity. They also offer novel, programmable architectures. This course will focus on the combined use of FPGAs and modern synthesis tools to develop rapid prototypes of ASICs. Includes a team project. Prer., ECE 4242. College of Engineering students only. Meets with ECE 5211.

ECE 4220 - Analog IC Design

3 Credits
A fundamental analog circuit design course that establishes relationships between semiconductor device theory, semiconductor processing technologies and the electrical and functional performance requirements of modern analog integrated circuits. Includes design project. Prer., ECE 3020, ECE 3220, ECE 3240. College of Engineering students only. Meets with ECE 5220.

ECE 4230 - Analog Filter Design

3 Credits
Theory, specification, design, and simulation of active and passive analog filters based on modern integrated circuit technology and VLSI Design I design philosophy. Prer., ECE 3220. College of Engineering students only. Meets with ECE 5230.

ECE 4242 - Adv Digital Design Methodology

3 Credits
Focuses on modern digital design practice using computer-based design tools and then considers key steps in a modern design flow, with particular attention to the use of behavioral models in hardware description languages as a stepping stone to combinational and sequential logic synthesis. The Verilog language will be presented, along with ancillary topics of functional verification, testbench generation, timing analysis, fault simulation, and design for testability. Design examples will include microcontrollers, finite state machines for datapath control, serial and parallel communication protocol controllers, and typical architectures of synchronous computational units. Prer., ECE 2411. College of Engineering students only. Meets with ECE 5242.

ECE 4250 - Microwave Circuit Design

3 Credits
An introduction to the design and analysis of microwave circuits both passive and active. Topics include microwave circuit analysis, measurement methods, transmission line structures, material properties, lumped elements, discontinuities, terminations, attenuators, directional couplers, hybrids, power dividers, impedance transformers, filters, mixers, switches, phase shifters, and amplifiers. Coreq., ECE 3120. College of Engineering students only. Meets with ECE 5250.

ECE 4260 - Mixed Signal IC Design

3 Credits
Design of data converters, switch capacitor filters, high performance opamps, phase locked loops, oscillators. Prer., ECE 4220 or ECE 5220. College of Engineering students only. Meets with ECE 5260.

ECE 4270 - CMOS Radio Frequency Integrated Circuit Design

3 Credits
CMOS based high Frequency amplifier design, s-parameters, voltage references, noise, low noise amplifier (LNA), mixers, RF power amplifiers, phaselocked loops, oscillators and synthesizers, transmitter and receiver architectures and RFID systems. Prer., ECE 3110, ECE 3210, ECE 3220. College of Engineering students only. Meets with ECE 5270.

ECE 4280 - Adv Verification Methodology

3 Credits
Verification of electronic systems consumes 70% of the development cycle. This course teaches students how to develop high-quality verification environments with SystemVerilog and how to use advanced verification techniques such as assertions and coverage for digital systems. Prer., ECE 4242. College of Engineering students only. Meets with ECE 5280.

ECE 4320 - Fault Detection & Design for Testability

3 Credits
Stuck-at fault modeling. Test generation for combinational circuits-Boolean difference, D algorithm, PODEM, FAN, critical path. Fault dominance and equivalence. Test generation for synchronous sequential circuits. Cost functions used in test generation. Fault simulation. Basics of design for testability. Prer., ECE 3430. College of Engineering students only. Meets with ECE 5320.

ECE 4330 - Embedded Systems Design

3 Credits
Introduction to embedded systems including real time fault-tolerant significance. Study the hardware and software techniques to designing embedded system, including study of various embedded operating systems, embedded controllers and digital signal processing hardware. Study existing embedded systems. Prer., ECE 3430, CS 1450, or consent of instructor. College of Engineering students only. Meets with ECE 5330.

ECE 4340 - VLSI Circuit Design I

3 Credits
Design considerations for MOS integrated circuits with an emphasis on CMOS technology and the relationships between semiconductor device theory, semiconductor processing technologies, and the electrical and functional performance requirements of modern digital IC circuits. Physical behavior of CMOS transistors and integrated circuits, CMOS processing technology, CMOS circuit and logic design, design rules and structured design methodology. Prer., ECE 3020, ECE 3210. College of Engineering students only. Meets with ECE 5340.

ECE 4480 - Computer Architecture and Design

3 Credits
The design of large digital systems with emphasis on the computer. Architectural alternatives, instruction set design, implementations including microprogramming, and actual examples are discussed. Performance tradeoffs. Prer., ECE 3430. College of Engineering students only. Meets with ECE 5480.

ECE 4510 - Feedback Control Systems

3 Credits
Linear analysis and analog simulation of electrical, chemical, hydraulic, and mechanical systems using block diagrams and signal flow graphs. Comparison of open and closed loop configurations. Feedback control system design using Nyquist, Bode, and root locus methods. Effects of simple networks on system response. Introduction of state variable techniques and digital computer solutions. Prer., ECE 2205. College of Engineering students only. Meets with ECE 5510.

ECE 4520 - Multivariable Control Systems I

3 Credits
Fundamental aspects of modern control theory are covered, including solutions to systems modeled in state variable format, controllability, observability, pole placement, and linear transformation. Computer- based tools for control system design are used. Prer., ECE 4510, MATH 3130. College of Engineering students only. Meets with ECE 5520.

ECE 4530 - Control Systems Laboratory

1 Credit
Introductory experiments on response of control system components. Open-loop and closed-loop (feedback) response of servo systems. Simulation of systems on an analog computer. Design of compensator systems. Coreq., ECE 4510. College of Engineering students only.

ECE 4540 - Digital Control Systems

3 Credits
Theory and application of classical and modern discrete-time control systems. Analysis and design of discrete-time and hybrid control using Z-transforms, root locus, frequency domain and state variable compensation techniques. On-line implementation by digital computers will be studied. Prer., ECE 4510. College of Engineering students only. Meets with ECE 5540.

ECE 4560 - Digital Control Laboratory

1 Credit
Discrete-time control systems will be designed and tested using microcomputers, compensators, A/D and D/A converters, and analog computers. Experiments in the control of discrete and analog systems will be performed. Coreq., ECE 4540. College of Engineering students only.

ECE 4610 - Analysis of Random Signals

3 Credits
Probability and random variables. Practical aspects and methods for analyzing and interpreting random signals. Statistical and parametric descriptions, estimators and errors for measurement data. Prer., ECE 3510, ECE 3610. College of Engineering students only. Meets with ECE 5610.

ECE 4611 - Physical-Layer Security

3 Credits
The fundamentals of physical-layer security from first principles in information theory. Topics covered include equivocation, the wiretap channel, secrecy capacity, and signaling techniques for physical-layer security (e.g., beam forming, channel precoding, etc.). Meets with ECE 5611. Prer., ECE 3610, and ECE 4645 or ECE 5645.

ECE 4615 - Statistical Signal Processing

3 Credits
Concepts of signal processing using random signals, random vectors, random processes, signal modeling, Levinson recursion, Wiener filtering, spectrum estimation, and detection theory. Prer., ECE 3610; and ECE 4650 or ECE 5650. College of Engineering students only. Meets with ECE 5615.

ECE 4625 - Communication Systems I

3 Credits
Introduction to principles of modern communication theory and signal processing: AM, FM, PAM, PCM, and delta modulation. Noise analysis, filtering, threshold effects, phase-locked loops, and introduction to digital modulation. Prer., ECE 3205. College of Engineering students only. Meets with ECE 5625.

ECE 4630 - Communications Systems II

3 Credits
Continuation of ECE 4625. Digital modulation and demodulation; equalization and diversity; error correcting code performance in noise; introduction to spread spectrum and space communications; simulation of communication systems. Prer., ECE 3610; ECE 4625 or ECE 5625. College of Engineering students only. Meets with ECE 5630.

ECE 4645 - Information Theory and Coding

3 Credits
Information theory including entropy, mutual information, Markov chains, and channel capacity. Coding theory including block codes, convolutional codes, and an emphasis on mod-

ern coding techniques such as low-density parity-check codes. Prer., ECE 3610. College of Engineering students only. Meets with ECE 5645.

ECE 4650 - Modern Digital Signal Processing

3 Credits
Study of linear discrete-time systems, linear difference equations, Z-transforms, discrete Fourier transform, fast Fourier transform, sensitivity, discrete random processes, quantization effects, and design-related concepts. Prer., ECE 3205, ECE 3610. College of Engineering students only. Meets with ECE 5650.

ECE 4655 - Real-Time Digital Signal Processing

3 Credits
An introduction into the design, development, and implementation of signal processing algorithms on real-time hardware targets. The emphasis will be on high-level language, but assembly language will also be discussed. Prer., ECE 2610 or ECE 3205 or ECE 4650 or ECE 5650. College of Engineering students only. Meets with ECE 5655.

ECE 4660 - Introduction to Digital Image Processing

3 Credits
Methods for coding, storing, and processing images by digital computers. Image models, sampling theorem, Fourier representation. Methods for image enhancement, restoration, registration and image understanding. Introduction to pattern recognition, computer vision and robotics with industrial applications. Prer., ECE 3510, ECE 3610. College of Engineering students only. Meets with ECE 5660.

ECE 4670 - Communications Laboratory

1 Credit
Laboratory experiments demonstrating material taught in ECE 4625/5625. Use is made of Spectrum analysis to study baseband signals and signal processors. Topics include noise, AM, FM, PM, sampling, TDM, digital modulation, errors, and complete communication systems. Prer., ECE 3230. Coreq., ECE 4625. College of Engineering students only.

ECE 4675 - Phase-Locked Loops and Frequency Synthesis

3 Credits
a study of phase-locked loops and frequency synthesizers. Both analysis and design aspects are addressed. Linear and nonlinear models are considered. Prer., ECE 3610, ECE 4625. College of Engineering students only. Meets with ECE 5675.

ECE 4680 - Signal Processing Laboratory

1 Credit
Analog filter design, design and simulation of digital processors including filters, and FFT algorithms. Prer., ECE 3230; Prer. or Coreq., ECE 4650. College of Engineering students only.

ECE 4690 - Satellite Communications

3 Credits
This course covers the basics of satellite/radio location systems from first principles. Topics include orbital mechanics, noise and propagation, atmospheric effects, satellite modulation, channel impairments, and global positioning systems. Prer., ECE 3610. College of Engineering students only. Meets with ECE 5690.

ECE 4710 - Modeling, Simulation, and Identification of Battery Dynamics

3 Credits
Derives mathematical models of the electrochemical dynamics of battery cells, including thermodynamic and kinematic properties, at multiple scales. Modern, lithium-ion chemistries are emphasized. Students will use simulation software and lab-test data to create and validate parameterized models. Prer., ECE 2205, MATH 2350, MATH 3400. College of Engineering students only. Meets with ECE 5710.

ECE 4890 - Senior Seminar

1 Credit
Design principles and a variety of realistic constraints such as economic factors, safety, reliability, aesthetics, ethics, and social impact; design project organization and design goals; techniques for making oral presentations and organizing written reports; interviewing and resume writing skills along with the art of making a favorable first impression. Approved for Compass Curriculum requirement: Summit. Prer., This course must be taken the before ECE 4899. College of Engineering students only.

ECE 4899 - Senior Design Project

3 Credits
A project lab taken during the last semester of the senior year for the design of system components and systems in the areas of communications, computer engineering, controls, digital signal processing, electromagnetics, microelectronic fabrication processes, or CMOS integrated circuits. Students will identify, select, and complete a design project. Design specification, analysis, design, simulation and/or construction of a successful project is required for completion of the course. Approved for Compass Curriculum requirement: Summit. Prer., ECE 4890 and last semester of degree. College of Engineering students only.

ECE 4910 - Power Systems II

3 Credits
An expansion of topics covered in the first course in Power Systems. Covers transmission lines, power flow analysis, generation dispatch and the dynamic behavior of machines and power systems during abnormal conditions. Prer., ECE 3910. College of Engineering students only.

ECE 4955 - Power Electronics

3 Credits
The first part of this course covers basic converter circuit operation, including steady-state DC-DC converter modeling and analysis, switch realization, discontinuous conduction mode, and transformer-isolated converters. The second part of the course will concentrate on the modeling and simulation of DC-DC converters using MATLAB, Simulink, and LTspice. Prer., ECE 2205, ECE 3210. Meets with ECE 5955.

ECE 4990 - Selected Topics

1-3 Credits
Credit and subject matter to be arranged. Consult current course schedule of classes for offering of topics. Prer., Consent of instructor.

ECE 5010 - Electronic Ceramics

3 Credits
Course covers physical theory of each type of electronic ceramic used in applications such as insulators, resistors, capacitors, fast ion conductors, magnetic ceramic, optical and electro-optical materials, waveguides, lasers, high Tc ceramic superconductors, high dielectric constant materials, and sensors. Course is biased toward thin-films in integrated circuit applications. However, many examples in the

current literature of basic materials synthesis techniques, deposition processes and properties will also be an integral part of the course. Prer., ECE 4070/5070.

ECE 5020 - Semiconductor Devices II

3 Credits
Advanced study of the electrical and transport properties of semiconducting and solid state devices and integrated device structures. Topics include: pn junction device structures, non-ideal effects in small geometry Mosfets, compound semiconducting devices, CCDs, negative conductance microwave devices. Prer., ECE 3020 or equivalent. Meets with ECE 4020.

ECE 5030 - Advanced Semiconductor Device Modeling

3 Credits
Introduce advanced students and graduate engineers to the methodology of numerical device modeling. The course is designed to take the student from the classical analytical models to finite difference and finite element schemes common in existing device modeling programs. Technologically worthy models (as opposed to simple phenomenological models) have a high degree of sensitivity to the fabrication technology and regions of operating voltages, currents and frequencies. This course sets the foundations for state-of-the-art modeling analysis and simulation employed by most semiconductor companies. Prer., ECE 4020/5020.

ECE 5050 - Microelectronics IC Fabrication Laboratory

3 Credits
independent experimental project in which students are expected to acquire the theoretical understanding of modern IC fabrication process, perform the IC processing and supporting measurements, and write detailed laboratory reports. Students should take ECE 4050/5050 before ECE 4896. Prer., ECE 4080/5080 and ECE 4020/5020 or consent of instructor. Meets with ECE 4050.

ECE 5060 - Processing and Device Physics of Advanced MOSFET Microelectronic Structures

3 Credits
Development of basic and up-to-date understanding of the fabrication, processing, and device physics of advanced Mosfet structures used in contemporary microelectronic circuits. Topics covered include MOS theory and characterization, MOSFET process/ device physics, advanced MOSFET process/device topics, review and study of current literature. Prer., ECE 4020/5020 or consent of instructor.

ECE 5070 - Electronic Property of Materials

3 Credits
Principles and applications of the electrical, optical, magnetic, and thermal properties of engineering electronic materials. The treatment is designed for students specializing in the areas of microelectronics, solid state, and electromagnetics. Prer., ECE 3050. Meets with ECE 4070.

ECE 5080 - VLSI Processing

3 Credits
Introductory study of the various processes such as oxidation, diffusion, epitaxy, ion-implantation, photolithography, CVD, plasma processing, etc., used in contemporary fabrication of modern microelectronic technologies; use and understanding of process modeling programs used in fabrication simulation of MOSFET and bipolar microelectronic technologies. Prer., ECE 3020 or consent of instructor. Meets with ECE 4080.

ECE 5090 - Semiconductor Device Characterization

3 Credits
Characterization of semiconductor devices for application in signal amplification. Topics include models for integrated-circuit active devices, bipolar and MOS integrated-circuit technology, single- transistor and two-transistor amplifiers, transistor current sources and active loads, output stages, operational amplifiers, frequency response, and integrated circuits. Prer., ECE 4020/5020 or equivalent.

ECE 5095 - Nanotechnology I

3 Credits
Application to advanced semiconductors and oxide electronics in which electron-electron interactions dictate device operations is the final goal of the series. Advanced device technology in the nanometer scale era and advances in strongly correlated electron devices need specialized knowledge in many areas of quantum physics which involve Non-Equilibrium Green's Function (NEGF) formalism and advanced techniques of quantum field theory in condensed matter. Students pursuing MSEE and PhD programs are encouraged to have knowledge in these formalisms in order to conduct research in advanced areas of device physics. The treatment is essentially an engineering application of fundamental formalisms in practical applications. Only advanced undergraduates with an interest in MSEE and PhD in Physics or Electrical Engineering may take this course with instructor permission. Meets with ECE 4095.

ECE 5100 - Technology of Gallium Arsenide Devices

3 Credits
Topics pertinent to GaAs processing technology and devices. Topics include materials characterization, GaAs physics, MOCVD, MOSFETS and HEMTS, digital GaAs circuits, and analog applications. Prer., ECE 4020/5020.

ECE 5110 - Electromagnetic Theory and Applications

3 Credits
An intermediate-level fields course beginning with the classical development of Maxwell's equations and the wave equation. Included are electrostatics, the steady magnetic fields, plane-wave propagation, Poynting's vector, guided waves, transmission lines, wave guides, the interaction of fields and matter, and concluding with an introduction to the subject of radiation. Dirac-delta and Dyadic Green's-function methods of problem solution are treated. Prer., ECE 3120 or equivalent. Meets with ECE 4110.

ECE 5120 - Antenna Engineering

3 Credits
Antenna engineering theory based on electromagnetic radiation is introduced. Various antennas including linear wire, aperture/horn, printed-circuit, and arrays are introduced. The design, fabrication, and measurement of antennas are covered. Prer. or Coreq., ECE 3120 or equivalent. Meets with ECE 4120.

ECE 5130 - Waveguiding Structures

3 Credits
Application of electromagnetic theory starting from basic wave and ray optics principles. Topics include transmission lines, transmission line modes, microwave networks, multi-terminal structures, waveguides, resonant cavities and various aspects of dielectric waveguides used in optical fibers. Prer., ECE 4110/5110 or equivalent.

ECE 5150 - Microwave Measurements Lab

1 Credit
Experiments with transmission lines and waveguide systems. Infrared imaging of electromagnetic fields. Measurement of antenna fields. Exposure to equipment and techniques used in microwave measurements. Design of microwave circuits. Coreq., ECE 3120. Meets with ECE 4150.

ECE 5160 - Electromagnetic Effects in IC Design

3 Credits
System electromagnetic considerations in IC system design. Includes RF component behavior, EM material properties, impedance and resonance, transmission lines, differential circuits, ground bounce, crosstalk-radiated emissions, and EM measurements. Prer., ECE 3110 and ECE 3210.

ECE 5170 - Electromagnetic Compatibility Engineering

3 Credits
Fundamentals of EMC design, analysis and measurement. Sinusoidal, non-sinusoidal and transient responses will be treated. Topics include filters, shielding, FCC rules and regulations, cables and connectors, coupling and interference effects. Approaches for EMC testing will also be covered. Prer., ECE 4110/5110 or equivalent.

ECE 5180 - Advanced Microwave Measurement Laboratory

3 Credits
Advanced study of microwave circuits, experiments, procedures, measurement techniques. Friis equation, cascade gain, cascade noise, antenna directivity/gain, gain lift and distribution, saturation, receiver design, antennas, ERP, S-parameters, near-far fields, thermal noise, electronic-warfare, electromagnetic material properties, radiation safety. Prer., ECE 5150.

ECE 5190 - Remote Sensing

3 Credits
Covers fundamental technology for various remote sensing techniques. These techniques cover optical, infrared, microwave, and nuclear sensors and imaging systems as appropriate. Background effects and effects of propagation through the atmosphere are included as well as tradeoffs of systems and platform capabilities. Prer., ECE 3120 and PES 2130 or equivalent. Meets with MAE 5092.

ECE 5211 - Rapid Prototyping with FPGAs

3 Credits
Field programmable gate arrays (FPGAs) are an important part of the overall design flow for application-specific integrated circuits (ASICs) because they offer the potential of allowing cheap hardware prototypes to be built to meet a narrow window of opportunity. They also offer novel, programmable architectures. This course will focus on the combined use of FPGAs and modern synthesis tools to develop rapid prototypes of ASICs. Includes a team project. Prer., ECE 4242. Meets with ECE 4211.

ECE 5220 - Analog IC Design

3 Credits
A fundamental analog circuit design course that establishes relationships between semiconductor device theory, semiconductor processing technologies, and the electrical and functional performance requirements of modern analog integrated circuits. Includes design project. Prer., ECE 3020, ECE 3220 and ECE 3240. Meets with ECE 4220.

ECE 5230 - Analog Filter Design

3 Credits
Theory, specification, design and simulation of active and passive analog filters based on modern integrated circuit technology and VLSI Design I design philosophy. Prer., ECE 3220. Meets with ECE 4230.

ECE 5242 - Adv Digital Design Methodology

3 Credits
Focuses on modern digital design practice using computer-based design tools and then considers key steps in a modern design flow, with particular attention to the use of behavioral models in hardware description languages as a stepping stone to combinational and sequential logic synthesis. The Verilog language will be presented, along with ancillary topics of functional verification, testbench generation, timing analysis, fault simulation, and design for testability. Design examples will include microcontrollers, finite state machines for datapath control, serial and parallel communication protocol controllers, and typical architectures of synchronous computational units. Prer., ECE 2411. Meets with ECE 4242.

ECE 5250 - Microwave Circuit Design

3 Credits
An introduction to the design and analysis of microwave circuits both passive and active. Topics include microwave circuit analysis, measurement methods, transmission line structures, material properties, lumped elements, discontinuities, terminations, attenuators, directional couplers, hybrids, power dividers, impedance transformers, filters, mixers, switches, phase shifters and amplifiers. Coreq., ECE 3120 or equivalent. Meets with ECE 4250.

ECE 5260 - Mixed Signal IC Design

3 Credits
Design of data converters, switch capacitor filters, high performance opamps, phase-locked loops, oscillators. Prer., ECE 4220/5220 or consent of instructor. Meets with ECE 4260.

ECE 5270 - CMOS Radio Frequency Integrated Circuit Design

3 Credits
CMOS-based high Frequency amplifier design, s-parameters, voltage references, noise, low noise amplifier (LNA), mixers, RF power amplifiers, phase- locked loops, oscillators and synthesizers, transmitter and receiver architectures, and RFID systems. Prer., ECE 3110, ECE 3210, ECE 3220. Meets with ECE 4270.

ECE 5280 - Adv Verification Methodology

3 Credits
Verification of electronic systems consumes 70% of the development cycle. This course teaches students how to develop high-quality verification environments with System Verilog and how to use advanced verification techniques such as assertions and coverage for digital systems. Prer., ECE 5242. Meets with ECE 4280.

ECE 5320 - Fault Detection & Design for Testability

3 Credits
Stuck-at fault modeling. Test generation for combinational circuits-Boolean difference, D-algorithm, Podem, Fan, critical path. Fault dominance and equivalence. Test generation for synchronous sequential circuits. Cost functions used in test generation. Fault simulation. Basics for design for testability. Prer., ECE 3430 or equivalent. Meets with ECE 4320.

ECE 5330 - Embedded Systems Design

3 Credits
Introduction to embedded systems including

real time fault-tolerant significance. Study the hardware and software techniques to designing embedded system, including study of various embedded operating systems, embedded controllers and digital signal processing hardware. Study existing embedded systems. Prer., ECE 3430 and CS 1450. Meets with ECE 4330.

ECE 5340 - VLSI Circuit Design I

3 Credits
Design considerations for MOS integrated circuits with an emphasis on CMOS technology and the relationships between semiconductor device theory, semiconductor processing technologies and the electrical and functional performance requirements of modern digital IC circuits. Physical behavior of CMOS transistors and integrated circuits, CMOS processing technology, CMOS circuit and logic design, design rules and structured design methodology. Prer., ECE 3020 and ECE 3210. Meets with ECE 4340.

ECE 5370 - Artificial Neural Networks

3 Credits
A research seminar treating fundamental models and contemporary results in the theory, implementation, and application of artificial neural networks. Prer., Graduate standing. Meets with ECE 6370.

ECE 5410 - Advanced Topics in Testing

3 Credits
Bridging faults and quiescent-current testing. BIST PLAs, RAMs, ROMs. Delay-faults and gate-delay/path-delay models. Logic-level and system-level fault diagnosis. Prer., ECE 4320/5320. Meets with ECE 6410.

ECE 5450 - Advanced Computer Architecture

3 Credits
This is a second course in computer architecture. Topics covered will include proposed novel architectures, arithmetic system design, multi-processor and multi-computer interconnection schemes and their performance evaluation, and application-directed architecture. Prer., ECE 4210/5210 and ECE 4480/5480.

ECE 5452 - System on Chip Architecture Design

3 Credits
The system on chip design methodology is a new paradigm for electrical and computer engineering education in digital logic and microelectronics. Investigates the soft core, memory, interface, interconnect, digital block and analog block used in SOC. Design tradeoff and performance issues will be discussed. Prer., ECE graduate standing.

ECE 5480 - Computer Architecture and Design

3 Credits
The design of large digital systems with emphasis on the computer. Architectural alternatives, instruction set design, implementations including microprogramming, and actual examples are discussed. Performance tradeoffs. Prer., ECE 3430 or consent of instructor. Meets with ECE 4480.

ECE 5510 - Feedback Control Systems

3 Credits
Analysis and design of linear control systems. Linear analysis and simulation of electrical and mechanical systems using block diagrams. Comparison of open and closed loop configurations. Feedback control system design using Nyquist, Bode and root locus methods. Effects of simple networks on system response. Implementation of control systems in a laboratory settings. Prer., ECE 2205 or ECE 2220. Meets with ECE 4510.

ECE 5520 - Multivariable Control Systems I

3 Credits
Fundamental aspects of modern control theory are covered, including solutions to systems modeled in state variable format, controllability, observability, pole placement, and linear transformations. Computer-based tools for control system design are used. Prer., ECE 4510, and MATH 3130, or equivalent. Meets with ECE 4520.

ECE 5530 - Multivariable Control Systems II

3 Credits
Design of systems in state variable format are covered including linear quadratic regulators, state estimators, model reference compensators, and H infinity control. Computer tools are used. Prer., ECE 4520/5520.

ECE 5540 - Digital Control Systems

3 Credits
Theory and application of classical and modern discrete-time control systems. Analysis and design of discrete-time and hybrid control using Z-transforms, root locus, frequency domain, and state variable compensation techniques. On-line implementation by digital computers will be studied. Prer., ECE 4510. Meets with ECE 4540.

ECE 5550 - Applied Kalman Filtering

3 Credits
Theory and application of Kalman filters for state estimation, information fusion, multi-target tracking, and data association. Special focus on the discretelinear Kalman filter, the extended Kalman filter, and the unscented Kalman filter. Practical issues related to robust performance are studied. Prer., MATH 381 or ECE 3610, MATH 313 or equivalent.

ECE 5560 - System Identification

3 Credits
Modern methods for identifying mathematical models of systems from observatons of their behavior; input-output and state-space models; parameterization and identifiability; non-parametric methods; prediction and output error methods; recursive estimation; Kalman filters; order estimations; subspace identification. Prer., ECE 2205, ECE 3610, MATH 3130, MATH 3400, or equivalent.

ECE 5570 - Optimization Methods in Systems and Control

3 Credits
Optimization methods: parameter optimization, interior point methods, quadratic programming, constrained optimization, optimization for dynamic systems, optimal control and numerical methods. Engineering applications, especially control. Prer., MATH 3130, MATH 3400, or equivalent.

ECE 5580 - Multivariable Control Systems: Analysis and Design in the Frequency Domain

3 Credits
Practical feedback control for linear multivariable systems from a frequency domain perspective. Development of useful techniques for analysis and design of control systems for multiple-input- multiple-output (MIMO) plants treating system uncertainty as an important aspect of design. Addresses robust stability and performance. Prer., ECE 4520 or ECE 5520 or equivalent.

ECE 5590 - Model Predictive Control

3 Credits
Introduces fundamental model predictive control concepts and demonstrates how they are applied in the design and control of systems and processes. Covers modeling, constraint handling, and stability; addresses options in regard to algorithms, models, and complexity versus performance issues. Prer., ECE 4520 or ECE 5520 or equivalent.

ECE 5610 - Analysis of Random Signals

3 Credits
Probability and random variables. Practical aspects and methods for analyzing and interpreting random signals. Statistical and parametric descriptions, estimators and errors for measurement data. Prer., ECE 3510 and ECE 3610 or equivalent. Meets with ECE 4610.

ECE 5611 - Physical-Layer Security

3 Credits
The fundamentals of physical-layer security from first principles in information theory. Topics covered include equivocation, the wiretap channel, secrecy capacity, and signaling techniques for physical-layer security (e.g., beam forming, channel precoding, etc.). Graduate students will be required to implement and present a recent finding from the literature for a term project. Meets with ECE 4611. Prer., ECE 3610, and ECE 4645 or ECE 5645.

ECE 5615 - Statistical Signal Processing

3 Credits
Concepts of signal processing using random signals, random vectors, random processes, signal modeling, Levinson recursion, Wiener filtering, spectrum estimation, and detection theory. Prer., ECE 3610, ECE 4650 or 5650. Meets with ECE 4615.

ECE 5620 - Detection and Extraction of Signals from Noise

3 Credits
Detection and extraction methods used in signal processing and includes such subjects as decision theory, detection of known random signals, optimum receiver design and evaluation, estimation theory, estimation of parameters, Wiener filtering, Kalman-Bucy filtering, applications to problems in communication theory. Prer., ECE 4625/5625 and ECE 4610/5610 or equivalent. Meets with ECE 6620.

ECE 5625 - Communication Systems I

3 Credits
Introduction to principles of modern communication theory and signal processing: AM, FM, PAM, PCM, and delta modulation. Noise analysis, filtering, threshold effects, phase-locked loops, and introduction to digital modulation. Prer., ECE 3205. Meets with ECE 4625.

ECE 5630 - Communication Systems II

3 Credits
Continuation of ECE 4625/5625. Digital modulation and demodulation; equalization and diversity; error correcting code performance in noise; introduction to spread spectrum and space communications; simulation of communication systems. Prer., ECE 3610 and ECE 4625/5625 or equivalent. Meets with ECE 4630.

ECE 5635 - Wireless Communication Systems

3 Credits
Types of wireless communication systems; channel models; cellular characteristics; handoff; modulation techniques; first, second, and third generation systems; wireless networks. Prer., ECE 4625/5625.

ECE 5640 - Spread Spectrum Communications Systems

3 Credits
An in-depth study of spread spectrum systems including implementation and performance. This will include effects of hostile interference on spread spectrum system performance, acquisition and tracking of the spread spectrum signal and an introduction to coding techniques used to mitigate the effect of jamming. Prospective students should have previous course background in signal analysis, probability and digital communications. Prer., ECE 4630/5630 or equivalent. Meets with ECE 6640.

ECE 5645 - Information Theory and Coding

3 Credits
Information theory including entropy, mutual information, Markov chains, and channel capacity. Coding theory including block codes, convolutional codes, and an emphasis on modern coding techniques such as low-density parity-check codes. Prer., ECE 3610 or equivalent. Meets with ECE 4645.

ECE 5650 - Modern Digital Signal Processing

3 Credits
Study of linear discrete-time systems, linear difference equations, Z-transforms, discrete Fourier transform, fast Fourier transform, sensitivity, discrete random processes, quantization effects, and design-related concepts. Prer., ECE 3205 and ECE 3610 or equivalent. Meets with ECE 4650.

ECE 5655 - Real-Time Digital Signal Processing

3 Credits
An introduction into the design, development, and implementation of signal processing algorithms on real-time hardware targets. The emphasis will be on high-level language, but assembly language will also be discussed. Prer., ECE 2610, ECE 3205, or ECE 4650/5650. Consent of instructor required. Meets with ECE 4655.

ECE 5660 - Introduction to Digital Image Processing

3 Credits
Methods for coding, storing and processing images by digital computers, image models, sampling theorem, Fourier representation, methods for image enhancement, restoration, registration and image understanding. Introduction to pattern recognition, computer vision and robotics with industrial applications. Prer., ECE 3510 and ECE 3610. Meets with ECE 4660.

ECE 5675 - Phase-Locked Loops and Frequency Synthesis

3 Credits
A study of phase-locked loops and frequency synthesizers. Both analysis and design aspects are addressed. Linear and nonlinear models are considered. Prer., ECE 3610 and ECE 4625/5625. Meets with ECE 4675.

ECE 5680 - Computer Communications Networks

3 Credits
Modern communications networks provide a means for messages and data to be exchanged between high speed digital computers. Central to this technology are many design problems dealing with network layout, capacity assignment, user delay, routing, cost and queue management. This course will address the problems in the context of different contemporary communications network designs. Prer., ECE 3610 or equivalent.

ECE 5685 - Wireless Networking

3 Credits
An in-depth study of communication networks focused on the challenges particular to wireless communications. Covers both general principles of wireless networking as well as the application of these principles to modern wireless technologies. Topics include wireless channel modeling, queuing theory, multiple access techniques, congestion control, routing protocols, and wireless resource allocation. Prer., ECE 3610 and ECE 4625, or permission of instructor.

ECE 5690 - Satellite Communications

3 Credits
Course covers the basics of satellite/radio location systems from first principles. Topics include orbital mechanics, noise and propagation, atmospheric effects, satellite modulation, channel impairments, and global positioning systems. Prer., ECE 3610. Meets with ECE 4690.

ECE 5710 - Modeling, Simulation, and Identification of Battery Dynamics

3 Credits
Derives mathematical models of the electrochemical dynamics of battery cells, including thermodynamic and kinematic properties, at multiple scales. Modern, lithium-ion chemistries are emphasized. Students will use simulation software and lab-test data to create and validate parameterized models. Prer., ECE 2205, MATH 2350, and MATH 3400 or equivalent. Meets with ECE 4710.

ECE 5720 - Battery Management and Control

3 Credits
Considers design of battery management systems: basic thermal and high-voltage electrical control, architectures for modular design, and different methods for cell equalization. Algorithms for estimating state-of-charge and state-of-health will be studied in depth. Students will implement their own software designs. Req., ECE 4710/ECE 5710.

ECE 5900 - Graduate Seminar

3 Credits
Meetings of faculty, students and guests from industry to participate in discussions of recent advances in research or other topics of interest. Seminar schedule will be announced at the beginning of the Fall and Spring semesters. Topics will be presented by faculty, graduate students and invited lecturers from other universities, government agencies and industry. Prer., Consent of instructor.

ECE 5955 - Power Electronics

3 Credits
The first part of this course covers basic converter circuit operation, including steady-state DC-DC converter modeling and analysis, switch realization, discontinuous conduction mode, and transformer-isolated converters. The second part of the course will concentrate on the modeling and simulation of DC-DC converters using MATLAB, Simulink, and LTspice. For graduate students a design project including simulation and a report are expected. Prer., ECE 2205, ECE 3210. Meets with ECE 4955.

ECE 5970 - Selected Topics

1-3 Credits
Current topics in ECE. See current course schedule for title of specific topic. Prer., Consent of instructor.

ECE 5990 - Advanced Topics Seminar

3 Credits
Current topics in microelectronics, materials, devices, and processes. Prer., Consent of instructor. Meets with ECE 6990.

ECE 6020 - Solid State Electronics II

3 Credits
This course is designed for advanced students looking for a formal treatment of solid state phenomena with special emphasis on semiconductors. Topics include energy band theory, impurities and imperfections in semiconductors, carrier concentration in thermal equilibrium, Boltzmann's transport equation, thermal effects in semiconductors, diffusion of electrons and holes, scattering of electrons and holes, recombination phenomena, strong field effects, high frequency and amorphous semiconductors. Prer., ECE 4020/5020, ECE 4070/5070 and PHYS 6900 or equivalent.

ECE 6040 - Quantum Electronics

3 Credits
Introduction to the theory of lasers, optical resonators and nonlinear optics, with the emphasis on applications to devices. Prer., ECE 3120 and PES 3130 or equivalent.

ECE 6111 - Math Methods for EM Field Theory: Part I

3 Credits
Develop a mathematical model of EM fields, based on Maxwell's Equations. Derive the Helmoltz (Wave) Equations for the auxiliary potentials and the fields. Develop the integral equation solutions for radiation and scattering based on Green's Functions. Applications include electric and magnetic properties of materials, wave propagation and polarization, reflection and transmission. Prer., ECE 4110/5110.

ECE 6112 - Math Methods for Em Field Theory: Part II

3 Credits
Apply the mathematical methods developed in ECE 6111 to advanced EM problems. Applications include wave propagation and scattering, waveguides, cavities and resonators, striplines and microstrip lines, fiber optics, introductory numerical techniques (Moment Methods & GTD), and Green's Functions. Prer., ECE 6111.

ECE 6120 - Numerical Methods of Field Theory

3 Credits
Continuation of ECE 6112. Prer., ECE 5110 or equivalent.

ECE 6370 - Artificial Neural Networks

3 Credits
A research seminar treating fundamental models and contemporary results in the theory, implementation and application of artificial neural networks. Prer., Graduate status. Meets with ECE 5370.

ECE 6410 - Advanced Topics in Testing

3 Credits
Bridging faults and quiescent-current testing. BIST PLAs, RAMs, ROMs. Delay-faults including gate-delay/path-delay models. Logic level and system-level fault diagnosis. Prer., ECE 4320/5320. Meets with ECE 5410.

ECE 6550 - Nonlinear and Adaptive Systems

3 Credits
Analyses of nonlinear control systems including phase plane, singular points, describing functions, and stability via Lyapunov are covered. System identification and design of adaptive systems are included. Prer., ECE 4520/5520.

ECE 6620 - Detection and Extraction of Signals from Noise

3 Credits
Detection and extraction methods used in signal processing and includes such subjects as decision theory, detection of known random signals, optimum receiver design and evaluation, estimation theory, estimation of parameters, Wiener filtering, Kalman-Bucy filtering, applications to problems in communication theory. Prer., ECE 4625/5625 and ECE 4610/5610 or equivalent. Meets with ECE 5620.

ECE 6640 - Spread Spectrum Communications Systems

3 Credits
An in-depth study of spread spectrum systems including implementation and performance. This includes effects of hostile interference on spread spectrum system performance, acquisition and tracking of the spread spectrum signal, and an introduction to coding techniques used to mitigate the effect of jamming. Prospective students should have previous course background in signal analysis, probability and communications. Prer., ECE 4630/5630 or equivalent. Meets with ECE 5640.

ECE 6650 - Estimation Theory and Adaptive Filtering

3 Credits
Presents the application of digital filtering theory to problems in communications and signal processing. Topics include discrete spectral analysis of random signals, discrete time signal detection, estimation and filtering algorithms including the Kalman filter and effects of discrete noise sources in digital signal processing. Prer., ECE 4610/5610 and ECE 4650/5650 or equivalent.

ECE 6980 - Ferroelectric Materials and Applications

3 Credits
Phenomenon of ferroelectricity in bulk and thin-film materials with emphasis on applications to integrated circuit devices. Devonshire's treatment and its variation to include surface phenomena are studied in some detail. Switching analysis and device modeling are discussed with emphasis to memory applications. Prer., ECE 6020.

ECE 6990 - Advanced Topics Seminar

3 Credits
Current topics in microelectronics, materials, devices, and processes. Prer., Consent of instructor. Meets with ECE 5990.

ECE 7000 - Masters Thesis

1-6 Credits
Masters Thesis

ECE 8000 - Ph D Dissertation

1-10 Credits
Ph D Dissertation

ECE 9200 - Independent Study in ECE - Undergraduate

1-3 Credits
An opportunity for sophomore students to do independent, creative work in electrical and computer engineering, possibly including industrial co-op (see co-op policy for details). Prer., Prior agreement on study program with faculty advisor.

ECE 9300 - Independent Study in ECE - Undergraduate

1-3 Credits
An opportunity for juniors to do independent, creative work in electrical and computer engineering, possibly including industrial co-op (see co-op policy for details). Prer., Prior agreement on study program with faculty advisor.

ECE 9400 - Independent Study in ECE – Undergraduate

1-3 Credits
An opportunity for seniors to do independent, creative work in electrical and computer engineering, possibly including co-op (see co-op policy for details). Prer., Prior agreement on study program with faculty advisor.

ECE 9500 - Independent Study in ECE – Graduate

1-3 Credits
An opportunity for graduate students to do independent, creative work in electrical and computer engineering. Prer., Prior agreement on study program with faculty advisor.

ECE 9990 - Candidate for Degree

0 Credits
For students who have completed all course work and thesis hours, but have yet to defend thesis.

ECON - Economics

ECON 1000 - The Economics of Social Issues

3 Credits
The Economics of Social Issues introduces the student to economics in a less rigorous manner than ECON 1010. Economic issues are introduced in examining wealth, poverty, energy, crime, education, health, discrimination, unemployment and inflation. May not be taken for credit by students who have already completed ECON 3010. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS1.

ECON 1010 - Introduction to Microeconomics

3 Credits
An analysis of the market system and its role in allocating goods and services; problems of market failure (e.g., monopoly, environmental pollution, and public goods), and alternative government responses to such problems. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

ECON 1050 - Economics in Practice

3 Credits
Designed as a practical introduction to the process of teaching and learning economics through activity-based economic instruction. Covers a variety of economic topics by use of materials developed by National Council on Economic Education. While particularly relevant to prospective teachers of K-12 economics, the class is open to anyone wishing a hands-on approach to economic content. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS1. Prer., Not open to students who have completed ECON 3010 or ECON 3020.

ECON 1310 - Survey of Economics

1-3 Credits
An introduction to basic economic principles and problems of contemporary society. Surveys the fundamentals of private enterprise

and the economic role of government in society. Not eligible for credit if ECON 3010 already completed.

ECON 2020 - Introduction to Macroeconomics

3 Credits
This course provides an examination of the forces that determine national income, unemployment, and inflation; the efforts of the government and the central bank to manage the state of the macroeconomy; and, the influence of the global economy on domestic macroeconomic functioning. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Preq., ECON 1010.

ECON 2210 - Personal Economics

3 Credits
Students will learn to apply the economic way of thinking to manage their scarce resources. Employs economic concepts to understand: financial planning and income management; saving and investing; stocks, bonds, and mutual funds; risk-return tradeoff and diversification; interest rates and credit.

ECON 2810 - Introduction to Statistics and Computing in Economics

3 Credits
Uses of descriptive and inferential statistics in economics. Introduction to probability, random sampling, confidence intervals, hypothesis testing and simple linear regression.

ECON 3010 - Interm Microeconomic Theory

3 Credits
Production, price, and distribution theory under conditions of perfect and imperfect competition. Prer., ECON 1010 or ECON 1050.

ECON 3020 - Intermediate Macroeconomic Theory

3 Credits
Keynesian, classical, and monetarist theories of national income determination. Problems of unemployment, inflation, international exchange, and growth. Prer., Econ 2020.

ECON 3150 - History of Economic Thought

3 Credits
Surveys the main schools of economic thought from the pre-cursors to the Classical economists through the modern neo-Classical reconciliation. The challenges posed by the Marxian critique and the Keynesian transformation will be considered. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., ECON 2020.

ECON 3160 - Austrian Economics

3 Credits
This course surveys the conceptual analysis of the Austrian School in economics. Topics include the Austrian School perspective on: market process, profit and loss, entrepreneurship, spontaneous order, money, inflation, recession, knowledge, competition, and economic progress. Prer., ECON 1010 or consent of instructor.

ECON 3210 - Economics of the Public Sector I

3 Credits
Analysis of the role of government in a capitalist economy, and of the effects of alternative expenditure and tax policies. Special policy topics include: social security, poverty programs, and local economic development. Prer., ECON 1010 or ECON 1050.

ECON 3280 - International Political Economy

3 Credits
Overview of the world political economy, especially in the post-WWII period. The central goal of the course is to provide information and develop analytical tools necessary for students to grasp the political issues inherent in international economic relations. Prer., ECON 1000, ECON 1010 or ECON 2020. Meets with P SC 4280.

ECON 3300 - Environmental Economics I

3 Credits
Application of economic analysis to environmental and natural resources issues and policies. Topics include: benefit-cost analysis, property rights, depletable resources, energy resources, toxic substances, air and water pollution. Prer., ECON 1010 or permission of instructor.

ECON 3310 - Ecological Economics

3 Credits
Applies new knowledge in natural and physical sciences and behavior to all economic resources: labor, capital, and natural resources. Uses new analytical tools such as systems thinking and path dependency along with neoclassical analysis. Emphasizes sustainable development, not economic growth. Approved for Compass Curriculum requirement: Sustainability. Prer., ECON 1010 or ECON 1050.

ECON 3410 - International Economics

3 Credits
Analysis of the basis for and consequences of opening an economy to the international arena. Specific issues considered are the benefits and costs of international trade, the reason for barriers to trade, the determination of exchange rates and the effect of government policies of international good and factor flows. Prer., ECON 2020.

ECON 3500 - Economic History of the U.S.

3 Credits
American economic organization and institutions and their development from colonial times to the present. Prer., ECON 2020. Meets with HIST 3650.

ECON 3590 - Globalization

3 Credits
Globalization is studied as part of an exchange of technology, goods, and financial markets. The exchanges of goods, services, and ideas across national borders are pervasive. Communication systems help this process, but also help those who resist globalization to better articulate and organize their viewpoints. Approved for LAS Global Awareness requirement. Prer., Sophomore standing. Meets with PSC 4590.

ECON 3610 - Work and Pay

3 Credits
The determination of wages and working conditions in the U.S. Economy. a study of the supply and demand for labor under competitive and noncompetitive conditions. Includes the economic effects of trade unions, internal labor markets, migration and labor mobility, as well as analysis of occupational choice, women in the labor force, and the causes and consequences of discrimination. Approved for Compass Curriculum requirement: Sustainability. Prer., ECON 1010 or ECON 1050.

ECON 3660 - Economics and Community Problems

3 Credits
Students build on an introductory level

knowledge of economics to see the economic aspects of social problems and their solutions through service-learning assignments in the community. Individual journals and oral presentations also required. Prer., ECON 1000 or ECON 1010 or ECON 2020.

ECON 3690 - Economics of Business

3 Credits
Examines the application of economic theory to business behavior, strategy, and market structure. Prer., ECON 1010 or ECON 1050.

ECON 3710 - Comparative Economic Systems

3 Credits
An examination of the underlying economic logic and relative advantages/disadvantages of differing economic systems. Special attention is paid to market-based economies, planned economies, Islamic economies, and shareholder economic systems. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., ECON 2020.

ECON 3770 - Economic Development

3 Credits
Explores the nature and sources of improvement in the standard of living in a nation or region. Among the issues addressed are the measurement of development, the role of government, gender implications of development, and environmental and economic sustainability. Local, regional, and international issues are addressed. Prer., ECON 2020.

ECON 3850 - Law and Economics

3 Credits
Examines how economic theory has been applied in legal theory and been used to shape legal outcomes. Numerous cases are examined. Prer., ECON 1010 or ECON 1050.

ECON 3870 - Behavioral Economics

3 Credits
Behavioral Economics explores the challenge to traditional models of economics offered by the work of economists and social scientists such as Daniel Kahneman. By exploring the role that social framing, personal psychology, and emotional responses play in economics decisions, the limits of traditional economic theory is explored and extensions to traditional theory considered. Prer., ECON 1010.

ECON 3980 - Special Topics in Economics

3 Credits
A study of special topics in economics. Topics vary from semester to semester and generally emphasize the application of economic analysis to current issues. Prer., ECON 1010 or ECON 1050.

ECON 4010 - Adv Microeconomic Theory

3 Credits
Study of the core of microeconomic theory using calculus. Topics include: consumer theory of the firm, profit maximization, efficiency and market failure. Several advanced topics from recent developments in microeconomics are also examined. Prer., ECON 3010, and MATH 1120 or MATH 1350, or consent of instructor.

ECON 4020 - Adv Macroeconomic Theory

3 Credits
Study of the core of macroeconomic theory using calculus. Topics include Keynesian vs. Classical economic models, macroeconomic growth models, open economy macroeconomics, and macroeconomic policy analysis. Prer., ECON 3020, and MATH 1120 or MATH 1350.

ECON 4210 - Economics of the Public Sector II

3 Credits
Analysis of the role of government in a capitalist economy. Topics include: benefit-cost analysis, economics of politics, and the economic approach to policy analysis. Prer., ECON 3210 or permission of instructor.

ECON 4250 - Urban Economics

3 Credits
Economic analysis of why cities exist, where they develop, how they grow, and how different activities are arranged within cities. Explores the economics of urban problems such as: poverty, congestion, pollution, and crime. Prer., ECON 1010 or ECON 1050.

ECON 4300 - Environmental Economics II

3 Credits
Application of economic analysis to environmental and natural resources issues and policies. Topics include: ecological economics, sustainable development, forests, fisheries, global warming, and endangered species. Prer., ECON 3300 or permission of instructor.

ECON 4310 - Understanding Our Economy

0.5-3 Credits
Explores a variety of topics applicable to the study and teaching of economics. The emphasis will be on themes, topics and structures as ways to motivate students interested in economics. This course will be taught through the Division of Continuing Education. Pass/Fail only.

ECON 4410 - Adv International Economics

3 Credits
Through development of advanced models, this course examines the likely effects of globalization on the U.S. and other countries. Prer., ECON 3010, ECON 3020, ECON 3410.

ECON 4500 - Money and Banking

3 Credits
The study of the interaction between financial markets and the Federal Reserve Banking system. Emphasizes the conduct of monetary policy to encourage economic growth and stability. Topics include interest rates, inflation, the money supply and the influence of these variables on the business cycle. Not available for credit to students who have completed FNCE 4500. Prer., ECON 3020.

ECON 4510 - Constitution and the Economy

3 Credits
Considers the economic role of government expressed in the Constitution and in Supreme Court opinions. Emphasis is on liberty, efficiency, and prosperity. Special topics include: police power, takings, commerce clause, and substantive due process. Prer., ECON 1010 or ECON 1050.

ECON 4520 - Economic Freedom

3 Credits
Examines the philosophy of individual liberty as a basis for the study of normative (or welfare) economics. The course considers theory, application, and critiques. Topics include: constitutional foundations, efficiency, spontaneous order, index of economic freedom, and contemporary policy issues. Prer., ECON 1010 or ECON 1050.

ECON 4530 - Power and Prosperity

3 Credits
Uses three books by Mancur Olson to study the economic prosperity of nations. Considers

whether Olson's work presents a dynamic theory of political economy. Topics include: free rider behavior, economics of interest groups, rent seeking, and socially-contrived markets. Prer., ECON 1010 or ECON 1050.

ECON 4810 - Introduction to Econometrics

3 Credits
Development and application of multiple regression techniques in testing economic theories. Prer., ECON 3010 or 3020; ECON 2810 or consent of instructor.

ECON 4990 - Senior Seminar

3 Credits
Required of all economics majors. This course provides an opportunity for economics majors to demonstrate the ability to access existing economic theory and evidence, apply existing theories and evidence to issues of current economic interest, and develop written assessments of issues of current economic interest in a seminar setting. Approved for Compass Curriculum requirement: Summit. Prer., ECON 1010 or ECON 1050, and ECON 2810, ECON 3010, ECON 3020.

ECON 9400 - Independent Study in Economics

1-3 Credits
Independent Study in Economics

ECON 9410 - Independent Study in Macroeconomics

1-3 Credits
Independent Study in Macroeconomics

ECON 9500 - Independent Study in Economics

1-3 Credits
Independent Study in Economics

EMGT - Engineering Management

EMGT 5010 - Intro to the Systems Perspective

3 Credits
Develops the systems engineering viewpoint and makes the central objective the system as a whole along with the satisfaction of a stated need. Offers the language and principles of each constituency in order to understand their requirements and negotiate balanced solutions. Prer., Graduate students only. Meets with SYSE 5010.

EMGT 5020 - Finance and Accounting for Engineering Managers

3 Credits
Introduces the concepts and skills necessary to financially analyze projects and assess financial performance and status of an engineering organization. Prer., Graduate students only.

EMGT 5050 - Engineering Project Management

3 Credits
Presents the fundamentals of project selection, analysis, evaluation, scheduling, and control. Includes engineering economic analysis, project screening and selection, methods of evaluation, project structure, configuration management control, and project scheduling, budgeting, and control. Prer., Graduate students only. Meets with SYSE 5050.

EMGT 5110 - Systems Engineering Processes

3 Credits
An in-depth examination of the Systems Engineering process through exposure to the structured approach necessary for the design of complex systems. The formulation of systems problems and the solution approach will be emphasized. Includes a model-based approach to key systems engineering design activities, process modeling, requirements analysis and functional allocation, trade-off analysis, and management of cost, schedule, and risk. Open only to graduate students. Prer., EMGT 5010; Graduate students only. Meets with SYSE 5110.

EMGT 5310 - Project Estimation and Risk Analysis

3 Credits
Successful project management includes estimation and proactive risk identification and development of mitigation techniques. System uncertainty is reduced when project risks are identified, quantified, and mitigation strategies implemented. Tools, techniques, and methodologies used by successful project managers will be examined. Meets with SYSE 5310. Prer., EMGT 5010, EMGT 5110. Graduate students only.

EMGT 5510 - Leadership for Engineers

3 Credits
Provides engineers with a background in leadership concepts and principles; enables students to develop practical skills in leading and managing through multiple personal leadership assessments leading to a personal leadership portfolio. Topics include leadership skills and styles, situational leadership, leadership theories, transformational leadership, authentic leadership, team leadership, and servant leadership as applied in technology-oriented enterprises. Prer., EMGT 5010; Graduate students only.

EMGT 5610 - Case Studies in Engineering Management

3 Credits
Team engineering management capstone experience. Theories, concepts, and techniques learned in previous coursework must be used to analyze a series of complex engineering management problems in the technical enterprise. Prer., EMGT 5020, EMGT 5050, EMGT 5110; Graduate students only.

ENE - Energy Engineering

ENE 4000 - Fundamentals of Energy Engineering

3 Credits
Reviews key energy management preparation topics. Fluid Mechanics: hydrostatics, dynamics, pipe flow and viscous effects, pumps, fans. Thermodynamics: First and Second laws, property relationships, psychometrics, basic cycles. Engineering Economics: decision-making, business records, net worth and profit and loss calculation. Prer., MATH 1360 and PES 1110, Engineering students only.

ENE 5020 - Intro to Energy Management

3 Credits
Overview of the role of energy and energy management in business. Includes energy statistics, reporting and goal setting, balancing business with sustainability, measurement and verification, fuel switching, financing and performance contracting, energy codes and legislation. Prer., Graduate students only.

ENE 5030 - Introduction to Alternative Energy Systems

3 Credits
Introduces renewable alternatives to conventional fossil fuel energy supply sources. Includes combined heat and power, photovoltaic, wind, solar pool heating, passive solar, cool roof, energy storage, carbon footprint, embedded energy, externalities, government roles and society cost tests. Prer., Graduate students only.

ENE 5040 - Intro to Commercial HVAC Design

4 Credits
Introduction to heating, ventilating, and air conditioning systems. Includes, comfort, health, HVAC sizing and design for commercial buildings, system categories, types and characteristics, heating, cooling, and ventilation calculations, hydronic systems, air systems, distribution, zoning and control, psychrometrics and refrigeration cycle. Prer., Graduate students only.

ENE 5045 - Automatic Controls

2 Credits
Introduces automatic control theory and application. Includes capacity regulation, energy management and optimization, control modes, open and closed-loop process feedback, cascade control, instrumentation, end-device characteristics, and basic energy management strategies. Prer., ENE 5040, Graduate students only.

ENE 5060 - Energy Systems I

4 Credits
Studies commercial building components responsible for energy use. Includes lighting technologies, complex HVAC systems, primary heating and cooling, combustion and thermal efficiency, 2/4-pipe hydronic systems, energy transport burden, district heating and cooling, air and water economizers. Prer., ENE 5040, ENE 5045; Graduate students only.

ENE 5065 - Energy Systems II

4 Credits
Covers advanced systems and controls for commercial building systems. Psychrometric applications, overlapping heating and cooling, waste heat recovery, demand controlled ventilation, daylight harvesting, measure interaction, indoor air quality impacts from energy conservation. Introduction to industrial energy process evaluation. Prer., ENE 5040, ENE 5045, ENE 5060; Graduate students only.

ENE 5070 - Quantifying Energy Use I

4 Credits
Introduces basic calculation methods for quantifying energy use and savings. Includes load profiles, parasitic and standby losses, compounding efficiencies, integrated design, design energy budgets, transport energy, benchmarks and end use division for rough estimating. Prer., ENE 5030, ENE 5040, ENE 5045, ENE 5060, ENE 5065. Graduate students only.

ENE 5075 - Quantifying Energy Use II

4 Credits
Applies advanced energy accounting methods and energy modeling techniques. Includes incremental and overall energy use approaches, computer simulation, overlaying equipment efficiencies and with load profile data, use of spreadsheet formulae, overlapping and dependent measures, and utility rate structures. Prer., ENE 5030, ENE 5040, ENE 5045, ENE 5060, ENE 5065, ENE 5070. Graduate students only.

ENE 5080 - Energy Engineering Capstone Project

2 Credits
Students will apply knowledge gained in the program to a real-world capstone project. Activities will demonstrate marketable skills in energy system knowledge, identifying opportunities, analysis for quantifiable savings, engineering economics, report writing, and presentation. Prer., ENE 5020, ENE 5030, ENE 5040, ENE 5045, ENE 5060, ENE 5065, ENE 5070, ENE 5075. Graduate students only.

ENGL - English

ENGL 1300 - Rhetoric and Writing I Stretch A

3 Credits
First half of core (C01) written communication stretch sequence for any student admitted to the university with ENGL ACT score of 18 or under or verbal SAT score under 450. Emphasizes reading, writing theory, and the writing of academic essays. Students stretch the work of ENGL 1310 across two semesters. ENGL 1300 + ENGL 1305 = ENGL 1310. Prer., Any student admitted to the university with ENGL ACT score of 18 or under, or verbal SAT score under 450.

ENGL 1305 - Rhetoric and Writing I Stretch B

3 Credits
Second half of core (C01) written communication stretch sequence for students with English ACT score of 18 or under or verbal SAT score under 450. Emphasizes reading, analysis, rhetorical theory, and the writing of academic essays. Students use the same course texts as ENGL 1310, but stretch the work across two semesters. ENGL 1300 + ENGL 1305 = ENGL 1310. GT-C01. Prer., ENGL 1300 with a grade of C- or better.

ENGL 1310 - Rhetoric and Writing I: Academic Reading and Analytical Writing

3 Credits
First course in a two-semester series, required of all students. Introduces students to academic reading and writing processes. Students develop critical reading, writing, and thinking skills through class discussion, the rhetorical analysis of academic texts, and the writing of analytical essays. Students write for a variety of purposes and audiences. Emphasis is given to reading and writing processes as multiple, and rhetorically diverse. Students may variously explore multicultural approaches to reading and writing, interdisciplinary approaches to reading and writing, community-specific definitions of literacy and language practices and/or the impact of technology upon academic reading and writing processes. Requirements include four analytical essays. ENGL 1310 is taught in a computer-mediated environment. ENGL 1310 is the first core writing course across the university. GT-C01. Prer., Score of 19+ on the English ACT; or score of 450+ on the Verbal SAT. See general information section of the Registration Handbook or the Academic Catalog for additional information.

ENGL 1410 - Rhetoric and Writing II: Argument and Research

3 Credits
Emphasizes argument and research supported through extended inquiry. Students use classical stasis theory to invent arguments as appropriate to audience and situation. Students map complex issues, summarize and negotiate counterclaims, and strategically cast their arguments in stasis deemed effective for their situation. ENGL 1410 is an option for the second core writing course across the university. GT-C02. Prer., ENGL 1310 or equivalent.

ENGL 1450 - Independent Writing Workshop

1 Credit
A self-study lab course in grammar, sentence structure, and basic writing principles. Student programs are individually designed to meet the student's particular area of need. English 1450 students will complete grammatical and syntactical exercises, writing revisions, and/or assigned readings, while working collaboratively with a peer tutor on the student's academic writing assignments. Requires a weekly, two-hour commitment. Allows for concentrated study and ongoing individualized support. Supplements First Year Rhetoric and Writing courses. Can be taken twice for credit.

ENGL 1500 – Intro to Literature for Non-Majors

3 Credits
Fundamental literary analysis of poetry, drama and fiction. This course is a prerequisite to all other literature courses. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-AH2. Prer., ENGL 1310 or equivalent, or score of 29+ on English ACT or score of 690+ on English SAT.

ENGL 1800 - Fundamentals of Creative Writing: Multiple Genres

3 Credits
Students will learn the skills needed to write effective poetry, fiction, and creative nonfiction. Students will also analyze written texts, participate in workshops, build vocabulary, and explore the emerging field of creative writing as an academic discipline. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 1310.

ENGL 2010 - Introduction to Literary Studies (For English Majors Only)

3 Credits
Introduction to study of poetry, drama, and fiction designed specifically to prepare majors for advanced work in literature. This course is a prerequisite for English majors to every other literature course in the department of English except ENGL 1500. Prer., ENGL 1310 or equivalent, or score of 29+ on the English ACT or score of 690+ on English SAT.

ENGL 2030 - Intro to Creative Writing - Poetry

3 Credits
For students interested in studying and practicing the craft of poetry. Students read and write extensively to immerse themselves in the genre and develop literary technique in their own writing, practicing with such craft elements as image, voice, sound, rhythm, and structure. The course emphasizes student work and the workshop in an environment that encourages conscientious attention to craft and a healthy sense of experimentation. Prer., ENGL 1310 or instructor consent. Approved for Compass Curriculum requirement: Writing Intensive.

ENGL 2040 - Intro to Creative Nonfiction

3 Credits
Focusing on reading and discussing contemporary creative nonfiction (lyric essays, memoir, personal narrative, and literary journalism). Students write extensively to develop elements of their own work (voice, scene, language, character, narrative, and theme). The course emphasizes the workshop in an environment that encourages creativity, self-expression, and risk. Prer., ENGL 1310 or instructor consent. Approved for Compass Curriculum requirement: Writing Intensive.

ENGL 2050 - Intro to Creative Writing - Fiction

3 Credits
For students interested in studying and practicing the craft of literary short fiction. Students read and write extensively to immerse themselves in the genre and develop literary technique in their own writing, practicing with such craft elements as characterization, plot, setting, dialogue, point of view, language, and scene. The class emphasizes student work and the workshop in an environment that encourages creativity and conscientious attention to craft. Prer., ENGL 1310 or instructor consent. Approved for Compass Curriculum requirement: Writing Intensive.

ENGL 2080 - Business & Administrative Writing

3 Credits
For all students and especially business and science majors. Focus is on developing writing, reading, and thinking skills through class discussion, analysis of business and administrative texts, and creating documents such as proposals, reports, letters and memos, and presentations. ENGL 2080 is an option for the second core writing course across the university. Prer., ENGL 1310 or ENGL 1410.

ENGL 2090 - Technical Writing & Presentation

3 Credits
Familiarizes students with the field of technical writing and teaches them to compose technical information effectively. Taught in a networked classroom with access to software tools for the design of written and visual texts. ENGL 2090 is an option for the second core writing course across the university. Prer., ENGL 1310 or ENGL 1410.

ENGL 2110 - Visual Rhetoric

3 Credits
Building on outcomes learned in prerequisite courses, this course explores issues surrounding visual rhetoric and examines the theory and practice of visual rhetoric in diverse contexts. Students discuss, analyze, and write about the role of images in society and using images persuasively. Prer., ENGL 1310 (or validated equivalent) and ENGL 1410; or ENGL 2080 (or validated equivalent) and ENGL 2090.

ENGL 2360 - Intro to American Literature I

3 Credits
This course may include early American, Antebellum, and/or 19th-century American literature. Topics and instructors may vary. May be repeated for credit with departmental permission. Fulfills the English department's historical breadth requirement in American literature before 1900. Prer., ENGL 1310 and ENGL 2010 for majors; or ENGL 1310 and ENGL 1500 for non-majors.

ENGL 2370 - Intro to American Literature II

3 Credits
This course may include the study of Realism, Modernism, the Harlem Renaissance, Postmodernism, and/or Contemporary Literature. Topics and instructors may vary. May be repeated for credit with departmental permission. Fulfills the English department's historical breadth requirement in American literature after 1900. Prer., ENGL 1310, ENGL 2000, and ENGL 2010 for majors; or ENGL 1310 and ENGL 1500 for non-majors.

ENGL 2510 - British Literature Before 1600

3 Credits
Chronological study of major British writers from the beginnings (Beowulf) through the works of Shakespeare. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 2520 - 17th and 18th Century British Literature

3 Credits
This course examines British literature from 1603 to 1796 in the genres of poetry, drama, the essay, and early forms of the novel. Writers studied include Donne, Milton, Sheridan, Defoe, Fielding, and Radcliffe. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 2530 - 19-Century British Literature

3 Credits
Study of 19th century British writers with emphasis on the Romantic and Victorian periods. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 2540 - British Literature After 1900

3 Credits
Chronological survey of major British writers from Joyce to Beckett, or from the start of the twentieth century to the contemporary era. Prer., ENGL 1310 or validated equivalent, ENGL 2000, ENGL 2010.

ENGL 2600 - Literature: The Global Perspective I

3 Credits
Designed to introduce students to literature from the ancient and early modern world; particular attention to emerging notions of Western culture and an indebtedness to exchanges with the East. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Inclusiveness (Global/Diversity); Writing Intensive. GT-AH2. Prer., ENGL 1310 or equivalent, and ENGL 1500 or ENGL 2010.

ENGL 2610 - Literature: The Global Perspective II

3 Credits
Examines modern works with particular attention to literature outside North America and Great Britain and to how a quickly and often violently changing world affects regional cultures. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. GT-AH2. Prer., ENGL 1310 or equivalent, and ENGL 1500 or ENGL 2010.

ENGL 2800 - Film and Fiction

3 Credits
This is a course that examines the "Transformational" process by which a novel (or short story) is adapted to film. What is gained, lost, altered in that process is then used as a means of coming to understand that novel or short story. Most typically what will not really "Transform" itself to film is used as the basis of critical analysis. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 2810 - Introduction to Professional and Technical Communication

3 Credits
Designed to give students experience with a variety of writing situations that professional writers frequently encounter, as well as an understanding of the present conversations and concerns within the field of professional and technical communication. Prer., ENGL 1310.

ENGL 2820 - Introduction to Rhetoric and Writing Studies

3 Credits
Course introduces students to the history, major issues, and theoretical lens of the field of Rhetoric and Writing. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive. Prer., ENGL 1310.

ENGL 2900 - Topics in Literature

3 Credits
While the topic varies by semester and instructor, this course will always focus on national diversity and/or global awareness through the study of how literature and socio-political conditions are reciprocally influenced. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 2910 - Topics in Literature

1-3 Credits
Topics will vary from year to year and may or may not be offered in any given semester. See individual course schedules for Fall or Spring. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 2920 - Exploring English Studies: Sustainability

3 Credits
Topics vary by semester. With a focus on sustainability, course introduces students to ways of thinking, reading, and writing through the lens of English Studies. Prer., ENGL 1310. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Culture; Sustainability; Writing Intensive.

ENGL 2930 - Exploring English Studies: Inclusiveness

3 Credits
Topics vary by semester. With a focus on inclusiveness, course introduces students to ways of thinking, reading, and writing through the lens of English Studies. Prer., ENGL 1310. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Inclusiveness; Writing Intensive.

ENGL 2970 - Shakespearean Beginnings

3 Credits
Through close examination of five plays from throughout William Shakespeare's career and from the various genres of his writing, students will be introduced to Shakespeare the Innovator, who reinvents the forms before him and takes drama into a new age. Prer., ENGL 1500.

ENGL 3000 - Critical Theory: Foundations and Practice

3 Credits
Introduces students to foundational concepts in critical theory and practice. Readings and written assignments encompass a variety of genres and approaches. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 3010 - Advanced Rhetoric and Writing

3 Credits
Writing workshop that offers students the opportunity to work on advanced writing projects and enhance their repertoire of rhetorical strategies. Specific writing projects may vary. The sections of ENGL 3010 also emphasize instructional strategies for managing the writing process in public school settings. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 1310 and ENGL 1410 or ENGL 2080 or ENGL 2090 or INOV 2100 or their equivalents.

ENGL 3020 - Topics in Adv Rhetoric & Writing

3 Credits
Extends writing and rhetorical strategies mastered in the core composition sequence. Students further develop research and argument skills. Topics and research sites may vary. Prer., ENGL 1310 and ENGL 1410 or equivalents.

ENGL 3030 - Intermediate Creative Writing - Poetry

3 Credits
For students with previous formal experience studying and practicing the craft of poetry. Students read and write extensively to develop their own poetic voices while opening themselves to the varieties of influence that others can have on their writing. A focus on student work and workshop promotes further exploration and experimentation with poetic craft and technique, including such elements

as image, voice, sound, rhythm, and structure. Prer., ENGL 2030 or consent of instructor.

ENGL 3040 - Intermediate Creative Nonfiction

3 Credits
In this course students will read and write creative nonfiction: memoir, lyric and segmented essays, literary journalism, and cultural criticism. Writers in this genre are reworking familiar forms, bringing them to life with voice and scenes, while respecting that creative nonfiction emerges from real experiences. Students will locate their own material and develop their voices to shape a variety of creative work to be examined in workshops. Prer., ENGL 2040 or consent of instructor.

ENGL 3050 - Intermediate Creative Writing: Fiction

3 Credits
For students with previous formal experience studying and practicing the craft of literary short fiction. Students read and write extensively to expand their working knowledge of the genre and refine their execution of such craft elements as characterization, plot, setting, dialogue, point of view, language, and scene. The class focuses on student work and workshop and emphasizes originality and dedication to craft. Prer., ENGL 2050.

ENGL 3060 - Special Topics in Creative Writing

3 Credits
This course offers scope and variety not captured by other creative writing courses (introductory multi-genre course, intermediate poetry, fiction, and creative nonfiction courses, as well as advanced course). Students taking this course will be challenged to move beyond the developmental sequence in creative writing, broadening their sophistication and expertise in the discipline of creative writing. May be repeated for credit. Prer., ENGL 1310 or equivalent, intermediate creative writing (any genre) or permission of the instructor.

ENGL 3080 - Adv Business & Technical Writing

3 Credits
Writing workshop where students work on advanced business and administrative writing projects. Focus is on rhetorical strategies, document design principles, developing an understanding of ethics, and evaluating and synthesizing a variety of texts into students' own research and writing. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 2080 or ENGL 2090.

ENGL 3110 - Advanced Grammar

3 Credits
Provides a theoretical, historical, and practical study of grammar and the rules governing language use, particularly as they apply to professional writing. The emphasis is on the standard conventions of grammar, usage, mechanics, and syntax. Students will practice a variety of techniques for applying these skills to their own writing. Prer., ENGL 1310.

ENGL 3120 - Technical Editing and Style

3 Credits
Focuses on editing strategies for improving the stylistic features of professional writing. In particular, it is concerned with a document's organization, clarity, conciseness, consistency, completeness, and accuracy. Students will practice a variety of techniques for applying these skills to their own writing. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 1310 and ENGL 3110.

ENGL 3130 - Web and Print Document Design

3 Credits
Examines print and web-based design strategies in specific types of documents for a variety of professional audiences. Each project requires a proposal, a progress report, and a preliminary draft for peer review before submission of the final copy. Prer., ENGL 2080 or ENGL 2090.

ENGL 3140 - Managing Writing Projects in Business and Industry

3 Credits
Provides a theoretical framework for managing writing projects and practice in working collaboratively in self-managed teams. Each team completes major writing projects collaboratively produced. Prer., ENGL 2080 or ENGL 2090.

ENGL 3150 - Professional Writing Internship

1-3 Credits
Gives students an opportunity to apply writing theory to a work environment and to gain practical experience in writing on the job. Working for an organization participating in the Internship Program, students perform 40 hours of writing-related duties over the course of the semester for 1 credit, 80 hours for 2 credits, and 120 hours for 3 credits. Interns are evaluated by a supervisor at the host organization, keep a weekly log of their experiences, and write a final report to the instructor, summarizing and evaluating their internship experience. Prer., ENGL 3120.

ENGL 3160 - Tools for Technical Writers

3 Credits
Students will learn to use the standard software tools critical to technical writers in print and online documentation, for example, Framemaker, Adobe Acrobat, MS Word, MS Powerpoint, Frontpage, and Paintshop Pro among others. Prer., ENGL 2080 or ENGL 2090.

ENGL 3170 - riverrun Literary and Arts Journal

3 Credits
Students will produce a print and/or online issue of the riverrun Literary and Arts Journal. The journal was founded in 1971 and publishes creative work by UCCS students. Students will complete analytical, theoretical, creative, and editing assignments in support of the production. Approved for Compass Curriculum requirements: Navigate; Writing Intensive. Prer., ENGL 1310 and ENGL 1410 or equivalents; ENGL 1500 or ENGL 2010 for English majors; ENGL 1500 or instructor permission for non-English majors.

ENGL 3200 - Women Writers and Women's Experience

3 Credits
Study of women writers with attention to issues of authorship, gender and diversity. Fulfills the English department's diversity requirement. May be repeated for credit with permission of department chair. Prer., ENGL 1500 or ENGL 2010.

ENGL 3320 - Born in the USA: Masterpieces of American Literature

3 Credits
A study of the works by American masters of fiction, poetry, drama, and prose non-fiction, emphasizing the relationship of the literature to its cultural and historical contexts. Examining works of cultural diversity and giving various perspectives of America, the course includes readings by Native-American, African American, Asian American, and Latino/a writers. Approved for LAS Humanities area and Cultural Diversity requirements. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Non-English

majors only. Prer., ENGL 1310 or equivalent and ENGL 1500 or ENGL 2010.

ENGL 3330 - Early American Literature Through Romanticism

3 Credits
May include literatures of encounter, of transatlantic colonialism, the captivity narrative, Romanticism, Whitman, and/or literatures of abolition. Topics and instructors may vary. May be repeated for credit with permission of department. Fulfills the English department's historical breadth requirement in American literature before 1900. Prer., ENGL 1310 and ENGL 2010 for majors; or ENGL 1310 and ENGL 1500 for non-majors.

ENGL 3340 - American Literature from 1790 to 1860

3 Credits
May include the literatures of revolution, the sentimental novel and/or poetics, early American women's writings, Transcendentalism, early American gothic, literatures of Native American removal and resistance, the slave narrative, and the literatures of abolition. May be repeated for credit with departmental permission. This course fulfills the English department's historical breadth requirement in American literature before 1900. Prer., ENGL 1310 and ENGL 2010 for English majors; ENGL 1310 and ENGL 1500 for non-majors.

ENGL 3350 - American Literature from 1820 to 1900

3 Credits
May include the early American novel, American gothic, Transcendentalism, the literatures of slavery and abolition, the poetics of Whitman and/or Dickinson, realism, naturalism, literatures of western expansion, and/or the New Woman. Topics and instructors may vary. May be repeated for credit with departmental permission. This course fulfills the English department's historical breadth requirement in American literature before 1900. Prer., ENGL 1310 and ENGL 2010 for English majors; ENGL 1310 and ENGL 1500 for non-majors.

ENGL 3360 - American Literature from 1880 to 1960

3 Credits
This course may include the study of the Realist novel, the Naturalist novel, "Jazz Age" literature, the Harlem Renaissance, the modernist novel, avant-garde poetics, and/or social realism. Topics and instructors may vary. May be repeated for credit with departmental permission. Fulfills the English department's historical breadth requirement in American literature after 1900. Prer., ENGL 1310 and ENGL 2010 for majors; or ENGL 1310 and ENGL 1500 for non-majors.

ENGL 3370 - American Literature from 1945 to the Present

3 Credits
May include the postwar novel, the modern short story, the Beat movement, literary minimalism, postmodernism, multi-ethnic literature, non-fiction, and/or contemporary literature. Topics and instructors may vary. May be repeated for credit with departmental permission. Fulfills the English department's historical breadth requirement in American literature after 1900. Prer., ENGL 1310 and ENGL 2010 for majors; or ENGL 1310 and ENGL 1500 for non-majors.

ENGL 3410 - Poetry for the People

3 Credits
This course is modeled after June Jordan's project of the same name at the University of California at Berkeley. It focuses on the writing and scholarship of poetry and seeks ways for poetry to have meaning in students' lives, particularly through required community outreach. The course emphasizes diversity. Prer., ENGL 1310 and ENGL 2010.

ENGL 3421 - Nature's Nation: Sustainability and American Literature

3 Credits
Representations of nature in American literature; questions of sustainability and the environment in American literature. Course materials may range from early American literature to the contemporary. Approved for Compass Curriculum requirements: Navigate; Sustainability. Prer., ENGL 1310 or equivalent; ENGL 1500 or ENGL 2010 for English majors; ENGL 1500 or instructor permission for non-English majors.

ENGL 3423 - American Eco-Gothic: Literature, Film, and Theory

3 Credits
Gothic and dystopian approaches to questions of sustainability and the environment in Anglo-American literature, film, and theory. Course materials may range from early Anglo-America to the contemporary. Approved for Compass Curriculum requirements: Navigate; Sustainability. Prer., ENGL 1310 or equivalent; ENGL 1500 or ENGL 2010 for English majors; ENGL 1500 or instructor permission for non-English majors.

ENGL 3530 - Early Modern British Literature

3 Credits
Explores the cultural currents during the 16th and 17th centuries through four important literary genres: lyric, drama, epic/romance, and various forms of prose. Prer., ENGL 1310, ENGL 1500, or ENGL 2010.

ENGL 3550 - Native American Literature

3 Credits
Provides students with the necessary cultural and literary background required to understand and appreciate some of the major works of Native American literature. Fulfills the English department's diversity requirement. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 3600 - African American Literature

3 Credits
Provides students with the necessary cultural and literary background required to understand and appreciate some of the major works of African-American Literature. Fulfills the English department's diversity requirement. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000.

ENGL 3650 - Studies in Gender and Sexuality

3 Credits
A study of representations and theories of gender and sexuality. The course combines theoretical approaches to gender and sexuality, such as psychoanalysis, feminism, performance theory, and queer theory, with an intensive study of representations of gender and sexuality in literature and film. May be repeated once with permission of department chair. Prer., ENGL 1310 and ENGL 1410 or equivalent, ENGL 2010.

ENGL 3750 - Grant and Proposal Writing

3 Credits
Introduces students to the rhetorical process of grant and proposal writing: identifying a problem, generating ideas to solve the problem, finding potential sponsors, analyzing requests for proposals, and planning, developing, and submitting the grant proposal. Prer., ENGL 2080 or ENGL 2090.

ENGL 3800 - Writing Center Theory & Practice

3 Credits
Study of Writing Center theory and practice. Students will participate in weekly observations and consultations in the Writing Center. Students in all majors are encouraged to enroll. Required for employment as a Writing Consultant at the Writing Center. Prer., ENGL 1310 and ENGL 1410; or ENGL 2080, ENGL 2090, or INOV 2100.

ENGL 3810 - Writing Across the Curriculum: Tutoring Critical Thinking Across the Disciplines

3 Credits
Course examines the inquiry processes in the Sciences, Social Sciences and Humanities, and how that knowledge is expressed through specific writing styles, forms and conventions. Students will complete a practicum component either in the Writing Center or classroom. Prer., ENGL 1310 and ENGL 1410.

ENGL 3820 - Rhetoric History and Theory: Contemporary Rhetorics and the Canonical Tradition

3 Credits
Learn the ways Rhetoric has shifted from a system of tropes, figures, and imitation to discovering multiple sites of epistemology and inquiry, drawing on art, literature, culture, and theory. Read and write about canonical and contemporary rhetorical texts and ideas. Prer., ENGL 1310 and ENGL 1410.

ENGL 3850 - Advanced Topics in Professional Writing

1-3 Credits
In this course, students intensively study selected topics in professional writing. Topics and instructors vary from semester to semester. Prer., ENGL 2080 or ENGL 2090.

ENGL 3860 - User-Experience I: Methods and Research Writing

3 Credits
This course will prepare students to test the usability of a software, a website, or a document. We will explore the user experience in researching, designing, and testing a product. A secondary purpose of the course is to focus on teamwork, since working in teams is a normal part of the technical writing profession. Prer., ENGL 2080 or ENGL 2090 or equivalent.

ENGL 3865 - User-Experience II: Theory and Management

3 Credits
This course will encourage students to explore the theory behind what makes a product usable. We also examine ideas behind human-computer interaction and how we might use these concepts to create better products. Lastly, we focus on best practices in managing testing procedures. Prer., ENGL 2080 or ENGL 2090 or equivalent.

ENGL 3900 - Topics in Literature

3 Credits
While the topic varies by semester and instructor, this course will focus on national awareness and/or global awareness through the study of how literature and socio-political conditions are reciprocally influenced. Approved for LAS Humanities area requirement. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 3910 - Topics in Literature

1-3 Credits
Topics will vary from semester to semester. Check Fall and Spring schedules. May be taken up to two times for credit with permission of department chair. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive. Prer., ENGL 1500 or ENGL 2010.

ENGL 3950 - Chaucer

3 Credits
Study of major works with emphasis on "Canterbury Tales." Readings will be in middle English; short introduction to the language will precede study of the poetry. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 3970 - Shakespeare I

3 Credits
Comedies and Histories. Prer., ENGL 1310 or validated equivalent, ENGL 2010.

ENGL 3980 - Shakespeare II

3 Credits
Tragedies and Romances. Prer., ENGL 1310 or validated equivalent, and either ENGL 1500 or ENGL 2010.

ENGL 4060 - Diversity Topics in Professional and Technical Writing

3 Credits
Advanced, in-depth study of the theoretical, historical, and practical aspects of technical and professional writing across diverse contexts, such as gender, race, sexuality, and socio-economic factors. Theoretical and historical contests shift with topics. Topics vary, may be taken up to twice with different topic. Requisites: ENGL 2080 or 2090 and ENGL 3080 or equivalent courses, or instructor approval. Meets with ENGL 5060. Approved for LAS Cultural Diversity requirement.

ENGL 4065 - Intercultural Professional and Technical Writing

3 Credits
A study of the theoretical, historical, and practical aspects of technical and professional writing across cultures -- including issues of translation, localization, international design, and/or communicating globally through various technologies. Requisites: ENGL 2080 or 2090 and ENGL 3080 or equivalent courses, or instructor approval. Approved for LAS Global Awareness requirement. Meets with ENGL 5065.

ENGL 4080 - Special Topics in Professional and Technical Writing

3 Credits
Advanced, in-depth study of the theoretical and practical aspects shaping the discipline of professional and technical writing, including the diverse historical and cultural contributions and accomplishments of theorists and practitioners. Theorists, practitioners, and historical contexts shift with topics. Can be repeated for credit with permission of instructor as long as topics are different. Prer., ENGL 3080, Junior or Senior standing.

ENGL 4090 - Senior PTW Portfolio Seminar

3 Credits
The Senior Portfolio is a compilation of the written, visual, digital, and design work that represents the student as a professional/technical communicator. The purpose is to demonstrate who the student is as a professional/technical communicator. Senior Portfolios are due at the time of portfolio presentations. Prer., Senior standing. Approved for Compass Curriculum requirement: Summit.

ENGL 4100 - Advanced Creative Writing

3 Credits
Advanced seminar focusing on the study and practice of a single literary genre: poetry, creative nonfiction, or fiction. Students participate in a mature workshop community. Through a variety of reading, writing, and discussion projects students exhibit a sophisticated understanding of craft theory and its bearing on practice. Students bring a high level of dedication and a demonstrated proficiency to their craft, and take initiative in shaping their further development and vision as writers. Genres vary. Prer., ENGL 3030, ENGL 3040, or ENGL 3050, depending on the genre of focus, or instructor permission.

ENGL 4200 - The Eighteenth-Century British Novel: Defoe to Austen

3 Credits
Traces the emergence of the novel from its subliterary roots in early 18th century to its stunning transformation by early 19th century. Examines historical context, narrative techniques, theory of character, and major themes. Authors include Defoe, Richardson, Fielding, Sterne, and Austen. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5200.

ENGL 4210 - The 19th-Century British Novel

3 Credits
Continuation of ENGL 4200, but may be taken without previous novel course. Examines major British novels of the 19th century and early 20th century. Authors include the Brontes, Dickens, Eliot, and Hardy. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5210.

ENGL 4230 - Development of the American Novel I

3 Credits
Study of the American novel from its beginnings, with the work of Charles Brockden Brown, through the 19th century, concluding with the work of Henry James. Will examine both artistic development of American writers and the novels' functions as vehicles of cultural history. Prer., ENGL 1310 or validated equivalent, ENGL 2000, ENGL 2010, and ENGL 3000. Meets with ENGL 5230.

ENGL 4240 - Development of the American Novel II

3 Credits
Continuation of ENGL 4230. Covers development of the "Modern" realistic novel, from beginning of the 20th century through 1945, and examines work of Wharton, Hemingway, Fitzgerald, Dreiser, Wright and others. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5240.

ENGL 4250 - Contemporary Novel

3 Credits
Study of major novelists and developments in the genre, with emphasis on British and American novels written since 1965. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5250.

ENGL 4300 - Studies in American Literature and Culture

3 Credits
Advanced study of such topics as American Gothic, antebellum American literature, and the literature of the American Cold War era. May be repeated for credit with permission of department chair. Approved for Compass Curriculum requirement: Summit. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5300.

ENGL 4310 - Harlem Renaissance

3 Credits
Seminar in literature of the movement commonly known as the "Harlem Renaissance," spanning the 1910s through the 1930s. May include jazz and 1920s cultural studies. Approved for Compass Curriculum requirement: Summit. Prer., ENGL 1310, ENGL 3000.

ENGL 4400 - Genre Studies

3 Credits
Topics may include medieval epic and romance, lyric poetry, dramatic comedy, medieval comedy, satire. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5400.

ENGL 4410 - Topics in Contemporary Poetry Studies

3 Credits
Analysis of poetry relevant to discussions in contemporary poetry studies. Topics and poets covered will vary from semester to semester. Can repeat up to 6 credit hours with different topics. Approved for Compass Curriculum requirement: Summit. Prer., ENGL 1310, ENGL 3000.

ENGL 4500 - Studies in Anglo-Saxon and Medieval Literature

3 Credits
Study of major works in prose, poetry, and drama of medieval Europe. May be repeated for credit with permission of the department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5500.

ENGL 4700 - Seminar in Literary Theory

3 Credits
An advanced seminar in literary theory. Course is organized around a theoretical topic and emphasizes theory's role in the interpretation of literary texts. Course topics vary by semester. May be repeated once with permission of department chair. Approved for Compass Curriculum requirement: Summit. Prer., ENGL 1310, ENGL 1410, ENGL 2010, ENGL 3000. Meets with ENGL 5700.

ENGL 4800 - Writing Center Theory and Practice

3 Credits
Study of Writing Center theory and practice. Students will participate in weekly observations and consultations in the Writing Center. Students in all majors are encouraged to enroll. Required for employment as a Writing Consultant at the Writing Center. Prer., ENGL 1310; and ENGL 1410 or ENGL 2080 or ENGL 2090 or INOV 2100 or their equivalents. Meets with ENGL 5800.

ENGL 4810 - Special Topics in the Teaching of Writing:

3 Credits
In-depth inquiry into theoretical topics in the teaching of writing in the public schools, with practical applications via the production of a theory-into-practice portfolio suitable to the topic. Topics vary. Prer., ENGL 3010. Meets with ENGL 5810.

ENGL 4820 - Classical Rhetoric

3 Credits
Introduces the theories, practices, and cultural power of rhetoric in ancient Greece and Rome. Also includes the debates surrounding the relevance of classical rhetoric to the teaching of writing today. Prer., ENGL 3010, ENGL 3110, and senior standing, or instructor permission. Meets with ENGL 5820.

ENGL 4830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing

3 Credits
Theoretical and practical study of writing processes across diverse contexts. Explores the rhetorical nature of writing, and applies rhetorical theory and research to the teaching and practice of writing. Consult Course Search on the UCCS website or the MyUCCS Portal for the topic in any given semester. Prer., Upper-division standing or permission of instructor, and ENGL 1310 and ENGL 1410 or course equivalents. Meets with ENGL 5830.

ENGL 4840 - Practicum for Writing Instructors

3 Credits
Training practicum for writing instructors at the college level. Theoretical inquiry and practical development of syllabi, course plans, and instructional materials. May be taken for a grade or Pass/Fail. Meets with ENGL 5840.

ENGL 4850 - History of the English Language

3 Credits
Outline of the history of the English language including a brief survey of sound changes, of grammatical forms and of the vocabulary. Meets with ENGL 5850.

ENGL 4860 - Special Topics in Rhetoric and Writing

3 Credits
Advanced, in-depth study of the theoretical and practical accomplishments of writers and rhetors across diverse historical contexts. Rhetors, theorists, and historical contexts shift with topics. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 1310 and ENGL 1410 or equivalent courses. Meets with ENGL 5860.

ENGL 4880 - Topics in Public Rhetorics

3 Credits
Advanced, in-depth study of the rhetoric of a particular public issue. Issues, theoretical materials, historical moment, and readings shift with topic. May be taken two times as long as topics are different. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., ENGL 1310, ENGL 1410. Meets with ENGL 5880.

ENGL 4950 - Seminar in Literary Topics

3 Credits
Course topic will vary by semester. Consult Course Search on the UCCS website or the MyUCCS Portal each term for specific course content. May be repeated for credit with permission of department chair. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5950.

ENGL 4970 - Seminar in Shakespeare Studies

3 Credits
This literature seminar examines one aspect of William Shakespeare's oeuvre deeply. It looks at the many facets of one work, one theme, or one character type, through the lenses of not only the playwright's own plays, but also the contributions of his contemporaries and the larger cultural history. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., ENGL 2010, and ENGL 3000. Meets with ENGL 5970.

ENGL 4973 - Shakespeare and Sustainability

3 Credits
This course considers Shakespeare through the lenses of ecocriticism and ecofeminist theory. In doing so, not only does it enliven the natural world vocabulary more familiar to an audience more intimate with that world, it also considers the roles of economic inequality, gender norms, and racial categories in determining one's relationship to that world. Approved for Compass Curriculum requirements: Summit; Sustainability; Writing Intensive. Prer., ENGL 2010, ENGL 3000. Meets with ENGL 5973.

ENGL 4980 - Seminar in Major Authors

3 Credits
Author varies from semester to semester and may not be offered in any given year. Consult Course Search on the UCCS website or the MyUCCS Portal for specific information. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 5980.

ENGL 5060 - Diversity Topics in Professional and Technical Writing

3 Credits
Advanced, in-depth study of the theoretical, historical, and practical aspects of technical and professional writing across diverse contexts, such as gender, race, sexuality, and socio-economic factors. Theoretical and historical contests shift with topics. Topics vary, may be taken up to twice with different topic. Requisites: ENGL 2080 or 2090 and ENGL 3080 or equivalent courses, or instructor approval. Meets with ENGL 4060.

ENGL 5065 - Intercultural Professional and Technical Writing

3 Credits
A study of the theoretical, historical, and practical aspects of technical and professional writing across cultures -- including issues of translation, localization, international design, and/or communicating globally through various technologies. Requisites: ENGL 2080 or 2090 and ENGL 3080 or equivalent courses, or instructor approval. Meets with ENGL 4065.

ENGL 5080 - Special Topics in Professional and Technical Writing

3 Credits
Advanced, in-depth study of the theoretical and practical aspects shaping the discipline of professional and technical writing, including the diverse historical and cultural contributions and accomplishments of theorists and practitioners. Theorists, practitioners, and historical contexts shift with topics. Can be repeated for credit with permission of instructor as long as topics are different. Prer., ENGL 3080, Junior or Senior standing.

ENGL 5200 - The Eighteenth-Century British Novel: Defoe to Austen

3 Credits
Traces the emergence of the novel from its subliterary roots in early 18th century to its stunning transformation by the early 19th century. Examines historical context, narrative techniques, theory of character, and major themes. Authors include Defoe, Richardson, Fielding, and Austen. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4200.

ENGL 5210 - The Nineteenth-Century British Novel

3 Credits
Continuation of ENGL 5200, but may be taken without previous novel course. Examines major British novels of the 19th century and early 20th century. Authors include Bronte, Dickens, Eliot, and Hardy. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4210.

ENGL 5230 - Development of the American Novel I

3 Credits
Study of the American novel from its beginnings with the work of Charles Brockden Brown, through the 19th century, concluding with the work of Henry James. Will examine both artistic development of American writers and the novel's functions as vehicles of cultural history. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4230.

ENGL 5240 - Development of the American Novel II

3 Credits
Continuation of ENGL 5230. Covers development of the "Modern" realistic novel from beginning of the 20th century through 1945 and examines work of Wharton, Hemingway, Fitzgerald, Dreiser, Wright and others. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4240.

ENGL 5250 - Contemporary Novel

3 Credits
Study of major novelists and developments in the genre, with emphasis on British and American novels written since 1965. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4250.

ENGL 5300 - Studies in American Literature and Culture

3 Credits
Advanced study of such topics as early American and modern American poetry and literature of the early American frontier. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4300.

ENGL 5400 - Genre Studies

3 Credits
Topics may include medieval epic and romance, dramatic comedy, medieval comedy, satire. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4400.

ENGL 5500 - Studies in Anglo-Saxon and Medieval Literature

3 Credits
Study of major works in prose, poetry, and drama of medieval Europe. May be repeated for credit with the permission of the department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4500.

ENGL 5700 - Seminar in Literary Theory

3 Credits
An advanced seminar in literary theory. Course is organized around a theoretical topic and emphasizes theory's role in the interpretation of literary texts. Course topics vary by semester. May be repeated once with permission of department chair. Prer., Graduate students only. Meets with ENGL 4700.

ENGL 5800 - Writing Center Theory & Practice

3 Credits
Study of Writing Center theory and practice. Students will participate in weekly observations and consultations in the Writing Center. Students in all majors are encouraged to enroll. Required for employment as a Writing Consultant at the Writing Center. Prer., ENGL 1310 and ENGL 1410. Meets with ENGL 4800.

ENGL 5810 - Special Topics in the Teaching of Writing:

3 Credits
In-depth inquiry into theoretical topics in the teaching of writing in the public schools, with practical applications via the production of a theory-into-practice portfolio suitable to the topic. Topics vary. Prer., ENGL 3010. Meets with ENGL 4810.

ENGL 5820 - Classical Rhetoric

3 Credits
Introduces the theories, practices, and cultural power of rhetoric in ancient Greece and Rome. Also includes the debates surrounding the relevance of classical rhetoric to the teaching of writing today. Prer., ENGL 3010, ENGL 3110, and graduate standing, or instructor permission. Meets with ENGL 4820.

ENGL 5830 - Rhetoric and Writing: Survey in Contemporary Approaches to Teaching Writing

3 Credits
Theoretical and practical study of writing processes across diverse contexts. Explores the rhetorical nature of writing and applies rhetorical theory and research to the teaching and practice of writing. Recommended for students and professionals interested in teaching writing in the public schools or at the college level, also intended for students interested in pursuing graduate studies in Rhetoric and Composition. Designed as a graduate seminar. Meets with ENGL 4830.

ENGL 5840 - Graduate Practicum for Writing Instructors

3 Credits
Graduate training practicum for writing instructors at the college level. Theoretical inquiry and practical development of syllabi, course plans, and instructional materials. May be taken for a grade or Pass/Fail. Meets with ENGL 4840.

ENGL 5850 - History of the English Language

3 Credits
Outline of the history of the English language including a brief survey of sound changes, of grammatical forms and of the vocabulary. Meets with ENGL 4850.

ENGL 5860 - Special Topics in Rhetoric and Writing

3 Credits
Advanced, in-depth study of the theoretical and practical accomplishments of writers and rhetors across diverse historical contexts. Rhetors, theorists and historical contexts shift with topics. Prer., ENGL 1310 and ENGL 1410 or courses. Meets with ENGL 4860.

ENGL 5880 - Topics in Public Rhetorics

3 Credits
Advanced, in-depth study of the rhetoric of a particular public issue. Issues, theoretical materials, historical moment, and readings shift with topic. May be taken two times as long as topics are different. Prer., ENGL 1310, ENGL 1410. Meets with ENGL 4880.

ENGL 5950 - Seminar in Literary Topics

3 Credits
Course topic will vary by semester. Consult Course Search on the UCCS website or the MyUCCS Portal each term for specific course content. May be repeated for credit with permission of department chair. Prer., ENGL 1310 or validated equivalent, ENGL 2000, ENGL 2010, and ENGL 3000. Meets with ENGL 4950.

ENGL 5970 - Seminar in Shakespeare Studies

3 Credits
This literature seminar examines one aspect of William Shakespeare's oeuvre deeply. It looks at the many facets of one work, one theme, or one character type, through the lenses of not only the playwright's own plays, but also the contributions of his contemporaries and the larger cultural history. Graduate students will work with the professor in establishing graduate-level work. Meets with ENGL 4970.

ENGL 5973 - Shakespeare and Sustainability

3 Credits
This course considers Shakespeare through the lenses of ecocriticism and ecofeminist theory. In doing so, not only does it enliven the natural world vocabulary more familiar to an audience more intimate with that world, it also considers the roles of economic inequality, gender norms, and racial categories in determining one's relationship to that world. Meets with ENGL 4973.

ENGL 5980 - Seminar in Major Authors

3 Credits
Authors to vary from semester to semester and may not be offered in any given year. Consult Course Search on the UCCS website or the MyUCCS Portal for specific information. May be repeated for credit with permission of department chairperson. Prer., ENGL 1310 or validated equivalent, ENGL 2010, and ENGL 3000. Meets with ENGL 4980.

ENGL 6960 - Renaissance Drama Exclusive of Shakespeare

3 Credits
Graduate study in the major plays of Elizabethan and Stuart drama from the 1580s to the closing of the theaters in 1642. Consideration of representative sub-genres of comedy, history, tragedy, and romance in the context of their culture. Prer., ENGL 1310 or validated equivalent and ENGL 1500.

ENGL 9400 - Independent Study in English

1-3 Credits
Students may not enroll for independent study in this course without prior consent of the English faculty. a student desiring independent study credit must present to the faculty, in writing, a well-defined topic for research which is not included in the regular English course offerings. Approval for such study must be secured from the department chair before registration. May be repeated for credit with permission of department chairperson.

ENGL 9500 - Independent Study in English

1-3 Credits
Independent Study in English

ENGR - Engineering

ENGR 1001 - Introduction to Robotics

3 Credits
An introductory course presenting foundational material in the design of robots. Topics include basic properties of sensors, motors, gears, drive mechanisms, control schemes, and processors to guide and control robots. Lego kits will be used to implement student designs. Meets with ECE 1001.

ENGR 1411 - Digital Electronics

2 Credits
Fundamentals of Digital Electronics, Number Systems, Logic Gates, Boolean Algebra, Combinational Circuit Design, Binary Math, basic operation of Flip-flops and Latches, Logic Families, and Specifications. Meets with ECE 1411.

ENGR 3040 - Engineering Ethics

3 Credits
Development of techniques for moral analysis and their application to ethical problems encountered by engineers, such as professional employee rights and whistle blowing, environmental issues, ethical aspects of safety, risk, and liability, and conflicts of interest. Business applications also included. Approved for Compass Curriculum requirements: Navigate; Writing Intensive. Prer., Junior standing or higher.

ENGR 5090 - Project Lead the Way Gateway to Technology Aerospace

1 Credit
A broad range of aerospace engineering concepts are presented, including: aerodynamics, space environment, orbital mechanics, aircraft design, navigation, situational awareness, and aerospace history. Affords the student a high level of understanding of this rich field of study and prepares the student sufficiently to explain these concepts to others. Focus is on middle school curriculum. Prer., Graduate level.

ENGR 5110 - Systems Engineering Processes

3 Credits
An in-depth examination of the System Engineering process through exposure to the structured approach necessary for the design of complex systems. The formulation of systems problems and the solution approach will be emphasized. Includes a model-based approach to key systems engineering design activities, process modeling, requirements analysis and functional allocation, trade-off analysis, and management of cost, schedule, and risk. Open only to graduate students. Prer., ENGR 5010. Meets with MAE 5093.

ENGR 5400 - Special Topics

3 Credits
Current topics in Systems Engineering, Engineering Management, and Space Operations. Prer., prior agreement with faculty advisor.

ENGR 9400 - Independent Study in Engineering - Undergraduate

1-6 Credits
A project course for seniors to do independent work in engineering. Students will identify, select, and complete a project under the direction of a faculty advisor.

ENGR 9500 - Independent Study in Engineering, Graduate

1-3 Credits
An opportunity for graduate students to do independent, creative work in systems engineering and/or engineering management. Prer., prior agreement with faculty advisor.

ENHL - Engineering Health

ENHL 5010 - Introduction to Engineering Health Systems

3 Credits
A broad examination of the components of the healthcare system from a technical systems management perspective including financial aspects, policy and law, ethics, and system performance measures. Prer., EMGT 5010, EMGT 5020.

ENHL 5020 - Healthcare Analytics

3 Credits
Analytics for the healthcare professional including applied statistics quality metrics, and the application of Lean concepts and Six Sigma to healthcare applications. Prer., EMGT 5110.

ENHL 5030 - Information Technology in Healthcare

3 Credits
An examination of the components of the healthcare IT system including medical records, clinical monitoring and data collection, and information assurance. Prer., EMGT 5110.

ENSC - Energy Science

ENSC 1500 - Introduction to Energy Science I

3 Credits
Brief history of human energy use; rudimentary energy concepts and fundamental dimensions; fossil fuels; magnetism and electricity; power plants; and environmental effects of energy production and use. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2. Meets with PES 1500.

ENSC 1510 - Introduction to Energy Science II

3 Credits
Brief history of human energy use; rudimentary energy concepts and fundamental dimensions; automobiles; solar energy; wind energy; other alternative energy approaches; environmental effects of energy production and use; and solid waste management. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2. Meets with PES 1510.

ENSC 1600 - Introduction to Solar Energy

3 Credits
Brief history of human solar energy use; rudimentary energy concepts and fundamental dimensions; basic physics of the sun; fundamentals of thermal energy transfer and storage; economics and application of solar principles to construction; frequent computer simulation and web activities. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2. Meets with PES 1600.

ENSC 1620 - Solar Energy Laboratory

1 Credit
Hands-on lab emphasizing experimental techniques and the scientific method applied to the sun's position and energy output. Both passive and active solar energy systems are modeled. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Sustainability. Prer. or Coreq., ENSC 1600. Meets with PES 1620.

ENSC 2500 - Sustainable Energy Fundamentals

3 Credits
Past, present, and future of human energy use; rudimentary energy concepts and fundamental dimensions; efficiency of energy conversions; heat transfer; commercial electricity; alternative energy sources; environmental ramifications; energy conservation; computer simulation and web activities. This survey course is designed for science majors and assumes some knowledge of calculus and the physical sciences. Meets with PES 2500.

ENSC 3200 - Practical Meteorology

4 Credits
An introduction to weather and meteorological phenomena. Topics include radiation balance, atmosphere structure, air masses and fronts, clouds, precipitation, storm structure, mesoscale systems, weather map analysis, forecasting, mountain weather, snow and snowpack processes, severe weather, weather hazards, lightning and landscape interactions, and remote sensing technologies in meteorology. Field trips may be required. Approved for the LAS Natural Science area requirement. Meets with GES 3200.

ENSC 3610 - Solar Energy Design

3 Credits
A study of selected design tools for component sizing and performance prediction of active and passive solar thermal systems. Graphic and computer average monthly performance tools and numerical simulation methods will be covered. Meets with PES 3610.

ENSC 3650 - Nuclear Energy

3 Credits
Nuclear structure, radioisotopes, nuclear reactions, fission, and fusion. Emphasis on nuclear power production and its environmental impact.

ENSC 3670 - Exotic Energy Sources

3 Credits
A survey of the technology of wind, geothermal, and ocean energy conversion, including climatic aspects, site selection, mechanics of the energy system, legal aspects, and environmental relationships.

ENSC 4060 - Introduction to Remote Sensing

4 Credits
This course introduces the basic principles of image interpretation and analysis. Through lab and project work, students will explore a variety of data sources and examine the methodological and logistical considerations central to the acquisition and interpretation of aerial photography and digital imagery. Meets with GES 3060 and GES 5060.

ENSC 4090 - Image Processing

4 Credits
This is a writing intensive course which provides an introduction to the advanced methods of environmental and natural resource data analysis using remotely sensed imagery. Emphasis will be placed on digital image analysis of freely available data sources. This is a project-oriented course in which students will work through the remote sensing process in entirety -- from the design of a research question to presentation of results. No previous programming experience required. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENSC 4060 or GES 4060. Meets with GES 4090 and GES 5090.

ENSC 4800 - Photovoltaics

3 Credits
Fundamental physics of photovoltaic cells including band structure, diode junction, and interactions with light. Fundamental and practical considerations include fabrication of panels and arrays, integration with electric grid-battery storage, and future technologies. Prer., PES 2130, PES 2500, MATH 2350. Meets with PES 4800.

ENTP - Entrepreneurship

ENTP 1000 - Introduction to Entrepreneurship

3 Credits
Designed to provide an introduction to the process of turning an idea into a successful startup business. Covers basic aspects of a successful business and introduces the student to the processes for creating a potentially successful business plan. Students will also learn to assess opportunities for venture/value creation, to address/identify risk in the startup process and develop presentation skills to convince others of the potential success to imple-

ment the business entity. Approved for Compass Curriculum requirement: Sustainability; Explore-Society, Health and Behavior.

ENTP 2950 - Topics in Entrepreneurship

1-3 Credits
Experimental course offered for the purpose of presenting new subject matter in entrepreneurship. Course prerequisites will vary depending upon topics covered. Prer., Sophomore standing.

ENTP 3000 - Principles of Entrepreneurship

3 Credits
Introduces students to entrepreneurship and the processes that are involved in launching and operating a successful venture. Understanding the new venture as a collection of logical decisions and systems will be the focus of this course. Each course participant will be exposed to the process of creating a new venture idea, examining market feasibility, testing financial models, and preparing a go-to-market strategy. Prer., Junior Standing. Coreq., ECON 1010 and ACCT 2010.

ENTP 3100 - Advanced Principles of Entrepreneurship

3 Credits
This course focuses on entrepreneurial principles associated with analyzing the feasibility of a new venture. Each student will apply the principles from both ENTP 3000 and ENTP 3100 to analyze the feasibility of a self-chosen venture concept. Prer., ENTP 3000.

ENTP 3950 - Topics in Entrepreneurship

1-3 Credits
Experimental course offered for the purpose of presenting new subject matter in entrepreneurship. Course prerequisites will vary depending on topics covered. Prer., Junior or Senior standing.

ENTP 4000 - The Business Plan

3 Credits
Those interested in a new or growing business must possess a comprehensive business plan, if they hope to compete in the marketplace. A comprehensive business plan is necessary to attract sources of financing and to evaluate the viability of a venture; it is also a requirement for companies that want to be considered for joint ventures with larger corporations or those that are transitioning from entrepreneurial to professional management. This course focuses on all facets of business plan development including assessing the competitive environment, developing venture concepts and growth strategies, creating market approaches, building a cohesive management team, launching operations, and developing financial projections. Students create a business plan that addresses their individual organizational needs. Prer., ENTP 3100.

ENTP 4500 - Entrepreneurship and Strategy

3 Credits
Capstone course for the Bachelor of Innovation. Basic knowledge of finance and accounting, marketing, operations, and management is assumed. Topics include understanding the entrepreneurial process, assessing opportunities, selecting a start-up team, financing entrepreneurial ventures, writing and presenting business plans, and new venture and competitive strategy. Utilizes lectures and case studies as well as coaching teams in the creation of a business plan and public presentation for an innovative new business or nonprofit organization. Approved for Compass Curriculum requirement: Summit. Prer., BLAW 2010, INOV 3010.

EPSY - Educational Psychology

EPSY 5070 - Educational Applications of Learning Theory

3 Credits
A seminar designed to introduce a spectrum of current theories of learning including elements of cognitive psychology, social learning theory and behaviorism. Students will be expected to read extensively and lead discussion of their areas of investigation.

EPSY 5100 - Human Growth and Development

3 Credits
Provides a broad understanding of life span theories of human development; understanding the nature and needs of individuals at all developmental levels; normal and abnormal human behavior indicators; personality theory and development; and learning theory within cultural contexts. Meets with COUN 5040.

EPSY 5250 - Teaching the Creative and Gifted Student

3 Credits
This introductory course explores the nature and nurture of gifted children and adolescents. Characteristics, identification, program alternatives, and teaching strategies are addressed as is the gifted child movement.

EUST - European Studies

EUST 3000 – Intro to European/EU Culture

2 Credits
This team-taught course will focus on different conceptions and dimensions of "European cultural identity" with the aim of critically evaluating debates surrounding this contested notion. Approved for LAS Global Awareness requirement.

EUST 3390 - Internship in European Studies

1-3 Credits
Internship for advanced students in European agencies, companies, and diplomatic settings, as well as through study abroad arrangement.

EUST 3500 - Spec Topcs in European Studies

3 Credits
Varying topics of historical and current importance regarding European cultures, transculturalism, and the European Union. May be repeated once for credit if topic is different.

EUST 9300 - Indep Study in European Studies

1-3 Credits
Independent work for undergraduates. By special arrangement with the faculty. May be repeated up to three times for credit. Consent of instructor required.

FCS - Foreign & Cultural Studies

FCS 1010 - Selected Topics in Strategic Languages I

3-5 Credits
Elementary Language Study-written, oral, and aural in a less commonly taught language: Arabic, Cambodian, Chinese, Farsi (Persian), Korean, Thai, and Vietnamese. Permission of Department Chair.

FCS 1020 - Selected Topics in Strategic Languages II

3-5 Credits
Elementary Language Study continued-written, oral and aural in a less commonly taught language: Arabic, Cambodian, Chinese, Farsi

(Persian), Korean, Thai, and Vietnamese. Permission of Department Chair. Prer., FCS 1010.

FCS 2110 - Selected Topics in Strategic Languages III

4 Credits
Intermediate language study - written, oral, and aural study in less commonly taught languages: Arabic, Chinese, Portuguese, Farsi, etc. Prer., FCS 1020.

FCS 2120 - Selected Topics in Strategic Languages IV

4 Credits
Continuing intermediate language study - written, oral and aural study in less commonly taught languages: Arabic, Chinese, Portuguese, Farsi, etc. Prer., FCS 2110 or equivalent.

FCS 3180 - German and Austrian Civilization and Culture

3 Credits
Lectures, film, readings, discussions in English; knowledge of German not required. Study of development of German and Austrian culture and institutions from 1700 to 1918, emphasizing literature, art, philosophy, and music. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Meets with GER 3180.

FCS 3190 - 20th and 21st Century German and Austrian Civilization and Culture

3 Credits
Lectures, films, readings, discussions in English; knowledge of German not required. Study of development of German and Austrian cultures and institutions from 1919 to the present emphasizing literature, design, art, and film. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Meets with GER 3190.

FCS 3210 - Special Topics in Japanese

3 Credits
Varying topics dealing with Japanese art, literature, and socio-cultural studies. Taught in English. May be repeated for credit as long as topics are different. Meets with JPNS 3210.

FCS 3220 - Japanese Culture and Civilization

3 Credits
Main currents of Japanese civilization from its beginning to the contemporary period. History, art, plus case studies of cultural differences (taught in English). Prer., JPNS 3200.

FCS 3230 - Southwestern Culture Studies

3 Credits
Taught in English. A cultural socio-history of the southwestern United States and its Mexican presence.

FCS 3240 - French Culture from 1700-1917

3 Credits
Studies the creation of modern France from its roots in the culture of the Ancient Regime through the upheaval of Enlightenment and Revolution to the Industrial Revolution and World War I. Emphasis will be on intersections of historical schools of thought, cultural movements and institutional structures in the development of France. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. Meets with FR 3240.

FCS 3250 - Contemporary France: Civilization and Culture

3 Credits
Study of French culture and institutions as they have developed from 1870 to the present, emphasizing the relationship between changing social structures and value systems and their representation in literature, design, art and film. Taught in English. Approved for LAS Global Awareness requirement. Prer., FR 3000, 3010 or 3020, if taken for French credit. Meets with FR 3250.

FCS 3270 - Francophone Cultures

3 Credits
An intensive examination of linguistically defined cultures, treating particular cultural difference and issues of choice in relation to the imperial (culturally, politically or economically) culture and language. Readings will be drawn from a variety of sources ranging from historical documents and travel literature to contemporary writings (literary and others) from Francophone areas. Taught in English. Meets with FR 3270.

FCS 3360 - U.S. Latina/o Literature

3 Credits
Introduces students to a range of U.S. Latina/o writing, and engages them in the ongoing debate regarding how Latina/o identity is constructed in both a domestic and global/transnational context, with special focus on the intersectional role of race/ethnicity, class, gender, and sexuality. Approved for LAS Cultural Diversity requirement. Meets with WEST 3360.

FCS 3370 - Origins and Development of Russian Cultural Traditions

3 Credits
Traces the development of Russian cultural traditions from the earliest recorded history of the Slavic people to contemporary society. The impact of religion, foreign domination and invasion, and geography on the Russian mind and behavior are examined. Special emphasis is given to the flowering of Russian literature, music and art in the 19th and early 20th centuries as well as to the role of the arts in the Soviet period.

FCS 3380 - Caribbean Literature, History, and Theory

3 Credits
Introduces students to a wide range of literary and artistic works from various nations in the Caribbean. Approached from a historical and a cultural studies perspective, it will highlight the literary and artistic expressions of writers and artists residing both on and off the islands, and explore the manner in which they have been inscribed by western culture and, in turn, transcribed or transformed their national and cultural identities. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with WEST 3380.

FCS 3390 - Internships in Foreign Cultures

1-3 Credits
The Language and Culture department will offer to advanced language students the opportunity to apply their knowledge in settings such as schools, social support agencies, etc. May be repeated up to three times. Prer., 3000 Level courses and permission of department.

FCS 3400 - Hollywood's Germany: The German and Austrian Image in American Film

3 Credits
The course will examine products of American

cinema from post-WWI through the "Golden Age" studio era into the present that deal with Germany and Austria or with characters that represent these two nationalities. Study will focus on ways in which stereotypes and the formal structure of film create their own parallel history and cultural imprints. Meets with GER 3400 and FILM 3400.

FCS 3450 - German Film

3 Credits
Screenings, lecture, discussion; knowledge of German not required. German film in a cultural context from beginnings to the present featuring such directors as Lang, Von Sternberg, Riefenstahl, Sagan, Thiele, Fassbinder, Schlondorff, Wenders, Adlon, and Tykwer. Meets with GER 3450 and FILM 3450.

FCS 3490 - Internship in Foreign Cultures

1-3 Credits
The Language and Culture department will offer to advanced language students the opportunity to apply their knowledge in settings such as schools, social support agencies, etc. May be repeated for credit up to three times. Prer., 3000 Level courses and permission of department.

FCS 3560 - German Literature in Translation

3 Credits
Masterworks of German literature representing the major literary genres. Reading knowledge of German not required (in English). Meets with GER 3500.

FCS 3590 - Deaf Culture

3 Credits
Examines the culture of deaf people. The course will explore their customs, values, norms and heritage of the deaf community in America. Prer., ASL 1010 and ASL 1020. Meets with ASL 3590.

FCS 3650 - Classical Literature in Translation - Latin

3 Credits
Analyzes a number of important literary texts produced in Greek and/or Roman antiquity in order to gain a better understanding of ancient aesthetics, psychology, ethics, religion and politics, as well as how this literature has influenced the later western culture tradition. Meets with LAT 3110.

FCS 3690 - Topics in Hispanic Film

3 Credits
The cinematic manifestations of the richness and the variety of Hispanic culture as expressed through an artistic and humanistic vision. May be repeated twice for credit if the topic is different. Approved for LAS Humanities area requirement. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. Meets with FILM 3690 and SPAN 3690.

FCS 3850 - Austrian & Central European Film

3 Credits
Screening, lecture and discussion are included in this course. Knowledge of German is not required for non-German minors. This is a survey of Austrian cinema in a cultural context from the beginning to the present and its relationship with Hungarian and Czechoslovakian film. Directors such as Kolm-Fleck, Korda, Forst, Hartl, Marischka, Corti, Ruzowitzky, Albert and Haneke are featured. Meets with FILM 3850 and GER 3850.

FCS 3890 - Field Studies in Language and Culture

1-3 Credits
Designed to study both on campus and in the field any aspects of departmental offerings in language, culture, and/or civilization. May be repeated once for credit, provided that the field trip destination is not duplicated. Approved for LAS Humanities area and Global Awareness requirements. Prer., Consent of instructor.

FCS 3990 - Topics in Foreign Culture

3 Credits
Offered to allow intensive study in a specific area of interest. Prer., Permission of instructor.

FCS 4000 - Italian Film

3 Credits
An examination of Italian film from its beginnings to the contemporary era, with special emphasis on neorealism and post-neorealist styles. The course approaches ideological, discursive, gender, and social issues articulated in works by Blasetti, DeSica, Visconti, Fellini, Pasolini, Antonioni, Wertmuller, Scola, and other directors. Prer., FILM 1000, FILM 2000, or instructor consent. Meets with FILM 4000 and ITAL 3500.

FCS 4210 - Hispanic Heritage of Colorado

3 Credits
The study of the history and traditions of Hispanics in the state from the 16th century to the present. Approved for LAS Humanities area requirement. Approved for LAS Cultural Diversity requirement. Meets with SPAN 4210.

FCS 4253 - Almodovar

3 Credits
Course focuses on the evolution of the films of Spanish filmaker Pedro Almodovar. The manner in which this innovative auteur has treated a variety of conceptual and formal issues will be examined, as will his vision of the cultural and social transformation of Spanish society from the early 1980s to the present. Meets with FILM 4253 and SPAN 4253.

FCS 4340 - Indigenous Arts of the Americas

3 Credits
An in-depth investigation of the art forms and related social customs of cultures native to the Americas. Meets with AH 4340, WEST 4340.

FCS 4460 - Studies in U.S.-Mexico Border Literature

3 Credits
The literary manifestation of U.S.-Mexico border writers, including prose, poetry, essays and performance art. Some of the texts will be in Spanish, some will be in English. Taught in Spanish. Prer., SPAN 3100 or consent of instructor. Meets with SPAN 4460 and SPAN 5460.

FCS 4650 - Teaching Methods in Second Language Acquisition

3 Credits
Explores current theory and methodology of second language training and acquisition through discussion of scholarly literature, class discussion, class visits, and presentations. Prer., SPAN 3010 or FR 3010 or JPNS 3010 or GER 3010 or equivalent.

FCS 5890 - Field Studies in Language and Culture

3 Credits
An on-campus and off-campus travel study

class that explores a specified topic in language, culture, and civilization. May be repeated once for credit if the topic and field trip are different. Prer., Consent of instructor.

FCS 9300 - Independent Study - Undergraduate

1-4 Credits
Independent study at the undergraduate level in FCS. Prer., Consent of instructor.

FCS 9500 - Independent Study - Graduate

1-4 Credits
Independent study at the graduate level in FCS. Prer., Consent of instructor.

FILM - Film Studies

FILM 1000 - Introduction to Film Studies

3 Credits
Basic film theory, stylistics, and genre analysis in Western dominant and avant-garde cinema. Themes include social, political and gender critique, surrealism, semiotics, metafilm, neorealism, and postmodernism. Approved for LAS Humanities area requirement. GT-AH1.

FILM 2000 - Narrative Film

3 Credits
A continuation of basic film study and analysis from FILM 1000. This course explores international cinema history and trends in cinema's aesthetic forms as well as the significant personalities and cultural impact of narrative genres. Approved for LAS Humanities area and Global Awareness requirements. Prer., FILM 1000, or consent of instructor.

FILM 2800 - Film and Fiction

3 Credits
Examines the "Transformational" process by which a novel (or short story) is adapted to film. What is gained, lost, and/or altered in that process is then used as a means of coming to understand that novel or short story. Most typically what will not really "Transform" itself to film is used as the basis of critical analysis.

FILM 3330 - Film, Video and the Avant-Garde

3 Credits
An examination of the relationship between avant-garde film and video, and the history of modern and contemporary art. Meets with AH 3330.

FILM 3400 - Hollywood's Germany: The German and Austrian Image in American Film

3 Credits
The course will examine products of American cinema from post-WWI through the "Golden Age" studio era into the present that deal with Germany and Austria or with characters that represent these two nationalities. Study will focus on ways in which stereotypes and the formal structure of film create their own parallel history and cultural imprints. Meets with GER 3400 and FCS 3400.

FILM 3450 - German Film

3 Credits
Screenings, lecture, discussion; knowledge of German not required. German film in a cultural context from beginnings to the present featuring such directors as Lang, Von Sternberg, Riefenstahl, Sagan, Thiele, Fassbinder, Schlondorff, Wenders, Adlon, and Tykwer. Meets with FCS 3450 and GER 3450.

FILM 3550 - Hollywood History

3 Credits
A chronological examination of Hollywood film from early beginning to the present. Specific focus is given to important film artists, genres and styles, and their influence on world cinema and American reception.

FILM 3690 - Topics in Hispanic Film

3 Credits
The cinematic manifestations of the richness and the variety of Hispanic culture as expressed through an artistic and humanistic vision. May be repeated once for credit if the topic is different. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. Meets with FCS 3690 and SPAN 3690.

FILM 3700 - Film Scoring and Music Composition

3 Credits
This course will provide students with an understanding of the tools, crafts, methods and history of the art of film music scoring and composition. Prer., FILM 1000 and FILM 2000. Meets with MUS 3700.

FILM 3750 - Theory and Practice of Art and Alternative Film

3 Credits
A practicum of film creation in the live-action art and experimental short form, based in the theoretical and historical aspects of the Film Studies program. Course will include a survey of short film styles and modes, a theoretical introduction to the creation of experimental and alternative film and film making, and an introduction to alternative and experimental modes of creation. Prer., FILM 1000 and FILM 2000 or equivalent.

FILM 3850 - Austrian and Central European Film

3 Credits
Screening, lecture and discussion are included in this course. Knowledge of German is not required for non-German minors. This is a survey of Austrian cinema in a cultural context from the beginning to the present and its relationship with Hungarian and Czechoslovakian film. Directors such as Kolm-Fleck, Korda, Forst, Hartl, Marischka, Corti, Ruzowitzky, Albert and Haneke are featured. Meets with FCS 3850 and GER 3850.

FILM 3900 - Special Topics in Film Studies

3 Credits
Selected topics in the theory, history and aesthetics of film. Prer., FILM 1000 or FILM 2000, or consent of instructor.

FILM 3950 - Women in Film

3 Credits
Selected topics dealing with the various roles of women in international cinema history. Meets with WEST 3950.

FILM 3990 - European Film - European History

3 Credits
The study of European film in conjunction with major developments in 20th century European society, including war, genocide, and dictatorship. Focus on both historical commentary and film form. Meets with HIST 3990.

FILM 4000 - Italian Film

3 Credits
An examination of Italian film from its beginnings to the contemporary era, with special emphasis on neorealism and post-neorealist

styles. The course approaches ideological, discursive, gender, and social issues articulated in works by Blasetti, DeSica, Visconti, Fellini, Pasolini, Antonioni, Wertmuller, Scola, and other directors. Prer., FILM 1000, FILM 2000, or instructor consent. Meets with FCS 4000 and ITAL 3500.

FILM 4030 - Internship in Film Studies

1-3 Credits
Supervised opportunities for advanced film studies students to apply their knowledge and obtain experience in the film industry and at film festivals. Prer., FILM 1000 and FILM 2000 and advanced standing. For VAPA majors and Film minors, or by consent of instructor.

FILM 4110 - French Film

3 Credits
The evolution of French cinema from its origins to the present, viewed and analyzed as cultural product, but also in terms of its history as art, commerce, technique and the intersections thereof. Considers the work of directors such as Melies, Renoir, Godard, Varda, Jeunet and Colin. Taught in English. Meets with FR 4110.

FILM 4250 - Directors in Focus

3 Credits
A survey of the work of a single director or a group of related directors. Course content varies with topic and semester. Prer., FILM 1000 and FILM 2000, or instructor consent. Maybe be taken up to 3 times with different topics.

FILM 4251 - Hitchcock

3 Credits
An in-depth study of the cinema of Alfred Hitchcock from early sound onward. Emphasis will be on the critical ideology of the director and the specific psychological, sociopolitical, and gender messages that propel Hitchcock's art beyond the influential and often emulated style.

FILM 4252 - Kubrick

3 Credits
An in-depth study of the cinema of Stanley Kubrick from his early experiments and brief Hollywood period to his classics. Examination of the director's specific philosophical and literary influences will underpin reception of his critical messages regarding history, culture, gender, and society that shape his revolutionary visual imprint and inform postmodernism.

FILM 4253 - Almodovar

3 Credits
Course focuses on the evolution of the films of Spanish filmaker Pedro Almodovar. The manner in which this innovative auteur has treated a variety of conceptual and formal issues will be examined, as will his vision of the cultural and social transformation of Spanish society from the early 1980s to the present. Meets with SPAN 4253 and FCS 4253.

FILM 4254 - Polanski

3 Credits
An in-depth study of the cinema of Roman Polanski, from his Polish film origins through French New Wave, Hollywood, independent, and transitional modes. Emphasis will be on the director's psychological, philosophical, sociopolitical critical, and metafilmic framing of mainstream genres. Prer., FILM 1000 and FILM 2000, or equivalent with instructor permission.

FILM 4500 - Film Theory

3 Credits
Explores various theoretical approaches to film including the Bakhtin and Frankfurt schools, auteur theory, structuralism, feminism, semiotics, textual analysis, postcolonial and digital theories. Prer., FILM 1000, FILM 2000 and permission the instructor.

FILM 4980 - Film Capstone: Film Studies Practice

3 Credits
This course engages students in the scholarship and practice of film studies, from academic scholarship to public critique and the application of theoretical concepts to creative efforts. At this state of study, self-reflectivity is paramount. In this culminating experience, students will be asked to integrate their previous study and experience into reflection upon and critique of practice in both scholarship and production.Approved for Compass Curriculum requirement: Summit. Prer., Junior or Senior standing.

FILM 9400 - Independent Study

1-3 Credits
Independent work for undergraduates only. By special arrangement with the faculty. Prer., FILM 1000 and FILM 2000 and advanced standing. For VAPA majors and Film minors, or by consent of instructor.

FNCE - Finance

FNCE 1200 - Personal Financial Planning

3 Credits
The study of the development and implementation of a personal financial and investment program. Includes analysis of budgeting and tax planning, managing liquidity, financing large purchases, protecting assets and income, analyzing investment information; and designing and executing an investment risk return, examining alternative investment types, interpreting investment information, investing money for retirement and estate planning. Cannot be used for FNCE/BUAD major electives. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

FNCE 3050 - Basic Finance

3 Credits
Introduction to financial management of the firm and the basic functions of finance. Topics covered in this course include an introduction to financial markets, financial statement analysis, time value of money, free cash flows, interest rates, stock and bond valuation models, modern portfolio theory, cost of capital, capital budgeting techniques and analysis, capital structure, sources of financing, working capital management, financial analysis and basic financial planning. Emphasizes the calculation, analysis, interpretation, and use of financial information to make financial decisions. Prer., ACCT 2010, ECON 2020, QUAN 2010. Business students only.

FNCE 4000 - Advanced Corporate Finance

3 Credits
The comprehensive study of how corporations make investment decisions, raise capital to finance their investments, and manage their financial affairs to create shareholder value. Topics covered include capital budgeting and the cost of capital, dividend policy, capital structure and financial distress. Emphasis on developing analytical tools and problem solving. Prer., FNCE 3050, QUAN 2020. Second semester junior. Completion of all skills courses or COB Director permission.

FNCE 4100 - Cases and Concepts in Finance

3 Credits
The development of analytical and decision-making skills of students to problems that confront financial managers. Areas include planning, budgeting and forecasting; accounts receivable, cash, accounts payable and inventory management. Other topics include mergers and acquisitions, shareholder equity management and value creation, debt policy and other topical areas in finance. Case method of instruction. Prer., FNCE 4000. Business students only.

FNCE 4200 - Investment and Portfolio Management

3 Credits
The study of the investments industry and instruments. Topics include the investment setting, portfolio theory, risk and return, and valuation of common and preferred stocks, bonds, options and futures. The course discusses investment problems and policies and the methodology for implementing them. Prer., FNCE 3050. Completion of all skills courses. Junior or senior standing or COB Undergraduate Director permission.

FNCE 4250 - Financial Risk Management

3 Credits
This course discusses the underlying theory and practical applications of derivative securities, with an emphasis on using these tools to solve risk management problems. Introduces futures, forwards, swaps, and options and extends this to topics in volatility estimation, financial structuring, credit derivatives, and risk management systems. The primary aim is to develop a framework to manage risk in a corporate or financial intermediary environment. Prer., FNCE 4200. Business students only, Junior standing.

FNCE 4400 - International Financial Management

3 Credits
Examines the opportunities and risks of firms doing business in a global economy. International capital movements, balance of payment problems, foreign and international institutions, foreign exchange markets, managing foreign exchange risk and exposure, and global investment and financing strategies are explored. Prer., FNCE 3050. Completion of all skills courses. Junior or senior standing or COB Undergraduate Director permission.

FNCE 4500 - Money and Banking

3 Credits
The study of the interaction between financial markets and the Federal Reserve system. The course emphasizes how the Federal Reserve Bank conducts monetary policy to promote a stable banking system and strong economic growth while minimizing inflation and unemployment. Topics covered include interest rates, inflation and the money supply and the effect of these variables on the business cycle. Prer., FNCE 3050. Completion of all skills courses. Junior or senior standing or COB Undergraduate Director permission.

FNCE 4590 - Ethics in Finance

3 Credits
Ethics in Finance prepares students with a conceptual framework necessary to analyze and understand the requirements of ethical conduct within the organization, and the ethical problems facing business and financial managers in a global environment. Case studies and practical tools will be used to develop an ethical framework, as well as, establish and review ethical practices in the workplace. Prer., FNCE 3050. Business Students Only. Meets with BUAD 4950.

FNCE 4700 - Practicum and Research in Security Markets

1-3 Credits
This is a hands-on learning lab for students interested in making investment decisions. Students make real-time investment decisions to buy or sell positions in a portfolio. The course is offered only if adequate portfolio funding is available. Course may require a commitment over both fall and spring semesters. Prer./Coreq., FNCE 4200. Junior standing; Business students only.

FNCE 4800 - Entrepreneurial Finance

3 Credits
This is a hands-on class on entrepreneurship. Students learn how to apply the techniques of finance to starting and growing a business. Students will gain practical financial knowledge that will be useful in starting a business and also practical entrepreneurial skills that could be used within a larger organization. Coursework will focus on the application of financial theory to real settings. Prer., FNCE 3050 or instructor permission. Junior or senior standing or COB Undergraduate Director permission.

FNCE 4950 - Topics in Finance - Undergraduate

1-3 Credits
Experimental courses offered irregularly at the undergraduate level for the purpose of presenting new subject matter in finance. Second semester Junior or Senior standing required. Course prerequisites will vary depending upon topics covered. Prer., Junior/senior standing.

FNCE 4960 - Internship in Finance

1-3 Credits
Undergraduate internship in finance. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/senior business students only.

FNCE 6000 - Corporate Financial Management

3 Credits
Concerned with the optimal allocation of a company's financial resources and a working knowledge of financial terminology and concepts. Topics include: capital market history, time value of money, valuation of securities, risk and return, capital budgeting principles and techniques, financial statement analysis, financial planning, raising capital, and cost of capital. Emphasizes techniques necessary to create and maximize the value of the firm. Prer., ACCT 5500, BUAD 5500 and QUAN 5500. Graduate business students only.

FNCE 6090 - Corporate Financial Management

3 Credits
Concerned with the optimal allocation of a company's financial resources and a working knowledge of financial terminology and concepts. Topics include: capital market history, time value of money, valuation of securities, risk and return, capital budgeting principles and techniques, financial statement analysis, financial planning, raising capital, and cost of capital. Emphasizes techniques necessary to create and maximize the value of the firm. Online graduate course. Tuition schedule differs from on-campus courses. Prer., BUAD 5590, QUAN 5590, and ACCT 5590.

FNCE 6100 - Problems and Policies in Financial Management

3 Credits
Further develops students' analytical and financial problem-solving skills through the use of case studies. Topics may include planning, budgeting, and forecasting; new product or project evaluation; raising funds through debt

and equity; mergers and acquisitions; bankruptcy and working capital management. Prer., FNCE 6000.

FNCE 6200 - Investment Management and Analysis

3 Credits
The theory of investment management and security values are presented. Topics include portfolio management; the analysis of investment risks and constraints on investment policies and objectives;the analysis and use of investment information; the development and application of the tools for determining value; the analysis of common stock, bonds, options and futures. Prer., FNCE 6000. Graduate business students only.

FNCE 6290 - Investment Management and Analysis

3 Credits
The theory of investment management and security values are presented. Topics include portfolio management; the analysis of investment risks and objectives; the analysis and use of investment information; the development and application of the tools for determining value; and analysis of common stock, bonds, options, and futures. Online graduate course. Tuition schedule differs from on-campus courses. Prer., FNCE 6090. Graduate business students only.

FNCE 6400 - International Financial Management

3 Credits
Uses the fundamental tools of financial analysis to assess the risks and opportunities for firms operating in an increasingly global economy. Special emphasis will be placed on the opportunities that arise from both market imperfections and the increasing integration of financial markets worldwide. Focuses on the international financial environment, the measurement and management of foreign exchangerate risk, and global funding and investment opportunities using both quantitative and qualitative decision tools to exploit opportunities and control risk. Prer., FNCE 6000. Graduate business students only.

FNCE 6490 - International Financial Management

3 Credits
Uses the fundamental tools of financial analysis to assess the risks and opportunities for firms operating in an increasingly global economy. Special emphasis will be placed on the opportunities that arise from both market imperfections and the increasing integration of financial markets worldwide. Focuses on the international financial environment, the measurement and management of foreign exchange rate risk, and global funding and investment opportunities using both quantitative and qualitative decision tools to exploit opportunities and control risk. Online graduate course. Tuition schedule differs from on-campus courses. Prer., FNCE 6090. Graduate business students only.

FNCE 6500 - Managerial Economics and the Business Cycle

3 Credits
Study of the forces affecting the U.S. and global business cycle. Interpretation of business cycle indicators and their implications for financial planning and decision making. Topics include interest rates and inflation, the conduct of monetary policy, aggregate supply and demand, and employment levels. Presents concepts, tools, and methods of economic analysis relevant to decision making within the firm. Prer., FNCE 6000.

FNCE 6590 - Managerial Economics and the Business Cycle

3 Credits
Study of the forces affecting the U.S. and global business cycle. Interpretation of business cycle indicators and their implications for financial planning and decision making. Topics include interest rates and inflation, the conduct of monetary policy, aggregate supply and demand, and employment levels. Presents concepts, tools, and methods of economic analysis relevant to decision making within the firm. Online graduate course. Tuition schedule differs from on-campus courses. Prer., FNCE 6090.

FNCE 6950 - Topics in Finance - Graduate

1-3 Credits
Experimental course in finance offered at the graduate level for the purpose of presenting new subject matter.

FNCE 6960 - Internship in Finance

1-3 Credits
Graduate internship in finance. Prer., Instructor and Dean approval.

FNCE 9400 - Independent Study in Finance - Undergraduate

1-3 Credits
Independent study in finance at the undergraduate level given with the consent of the instructor who directs the study and the dean. Prer., Junior/senior standing only and consent of instructor and dean.

FNCE 9500 - Independent Study in Finance - Graduate

1-3 Credits
Independent study in Finance at the graduate level given with the consent of the instructor who directs the study and the dean.

FR - French

FR 1010 - Beginning French I

4 Credits
Essentials of French, oral-aural skills stressed with additional reading, writing and grammar.

FR 1020 - Beginning French II

4 Credits
Essentials of French continued. Additional oral-aural skills practice with increased grammar, reading, and writing. Prer., FR 1010 or equivalent.

FR 2110 - Intermediate French I

4 Credits
French at the intermediate level with concentration on conversation, culture and civilization, or literature at that level. Prer., FR 1020 or its equivalency.

FR 2120 - Intermediate French II

3 Credits
An intermediate French course continuing conversational usage and cultural integration utilizing contemporary materials, newspapers, etc. Prer., FR 2110 or equivalent.

FR 2930 - Professional French

3 Credits
The vocabulary and usage of professional French in a variety of contexts. May include applied business correspondence, marketing and accounting terminologies, other forms of professional correspondence, bureaucratic forms and contacts. Prer., FR 2120.

FR 3000 - Advanced French Grammar

3 Credits
Designed to review extensively the functional application of modern French. Presents a skill-development approach featuring graded compositions and oral practice based on material encountered in media and informal situations. Prer., FR 2120.

FR 3010 - Advanced Conversation and Composition

3 Credits
Ongoing grammar review with practice in conversation and development of skills in composition with emphasis in oral presentations and formal compositions, including academic essays. Prer. or Coreq., FR 3000.

FR 3020 - French Conversation and Composition II

3 Credits
Practice in conversation with emphasis on pronunciation and diction; exercises in grammar review and oral communication (using literary texts as basis). Prer., FR 2120 or equivalent.

FR 3040 - Advanced Pronunciation and Phonetics

2 Credits
A supplemental course for the advanced student emphasizing the "Why's and wherefore's" of native pronunciations. Working from a solid knowledge structure of French, pronunciation work will stress the whole phrase as well as the relationship between grammar and speech. Prer., FR 3000 or 3010 or 3020 or concurrent enrollment.

FR 3050 - Professional French

3 Credits
The vocabulary and usage of professional French in a variety of professional and cultural contexts. May include applied business correspondence, marketing and accounting terminologies, other forms of professional correspondence, bureaucratic forms and contacts as well as study and application of cultural practices in professional settings. Prer., FR 2120.

FR 3110 - Main Currents of French Literature I

3 Credits
An introductory survey. Selected literary texts representing major trends in the development of French literature. Prer., FR 2120 or equivalent.

FR 3120 - Main Currents in French Literature II

3 Credits
An introductory survey of French literature from Neoclassicism to the present. Prer., FR 2120 or equivalent.

FR 3170 - Advanced French Readings, Conversation and Composition

3 Credits
This course in advanced French bases classroom discussion and written assignment on contemporary journals, newspaper and nonliterary writings. Prer., FR 3010 or FR 3020 or equivalent.

FR 3230 - Applied Conversation

1 Credit
Conversation at the advanced level on contemporary topics in French culture. Prer., FR 2120 or equivalent.

FR 3240 - French Culture from 1700-1917

3 Credits
Study of the creation of modern France from its roots in the culture of the Ancient Regime through the upheaval of Enlightenment and Revolution to the Industrial Revolution and World War I. Emphasis will be on intersections of historical schools of thought, cultural movements and institutional structures in the development of France. Taught in English. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Inclusiveness (Global/Diversity). Meets with FCS 3240.

FR 3250 - Contemporary France: Civilization & Culture

3 Credits
Study of French culture and institutions as they have developed from 1870 to the present, emphasizing the relationship between changing social structures and value systems and their representation in literature, design, art and film. Taught in English. Approved for LAS Global Awareness requirement. Prer., FR 3010 or FR 3020 or equivalent if taken for French credit. Meets with FCS 3250.

FR 3270 - Francophone Cultures

3 Credits
An intensive examination of linguistically defined cultures, treating particular cultural difference and issues of choice in relation to the imperial (culturally, politically or economically) culture and language. Readings will be drawn from a variety of sources ranging from historical documents and travel literature to contemporary writings (literary and others) from Francophone areas. Taught in English. Prer., FR 3010 or FR 3020 or equivalent, if taken for French credit. Taught in English. Meets with FCS 3270.

FR 3390 - Internship in Applied French

1-3 Credits
The Language and Culture department will offer to advanced French language students the opportunity to apply their knowledge of French in settings such as schools, social support agencies, etc. May be repeated up to three times for credit. Prer., 3000 Level French courses and departmental permission.

FR 3490 - Internship in Applied French

1-3 Credits
The Language and Culture department will offer to advanced French language students the opportunity to apply their knowledge of French in settings such as schools, social support agencies, etc. May be repeated up to three times for credit. Prer,. 3000 Level French courses and departmental permission.

FR 3500 - Special Topics in French

3 Credits
Varying topics of current importance in literary and socio-cultural study. May be repeated once for credit if the topic is different. Prer., FR 2120 or equivalent.

FR 4110 - French Film

3 Credits
The evolution of French cinema from its origins to the present viewed and analyzed as cultural product, but also in terms of its history as art, commerce, technique and the intersections thereof. Considers the work of directors such as Melies, Renoir, Godard, Varda, Jeunet and Colin. Taught in English. Prer., FR 3010 or FR 3020 or concurrent enrollment if taken for French credit. Meets with FILM 4110. Taught in English.

FR 9300 - Independent Study in French: Undergraduate

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong French preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

FR 9400 - Independent Study in French: Undergraduate

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong French preparation. May be repeated up to three times for credit. Prer., Consent of instructor and department chair.

FR 9500 - Independent Study in French: Graduate

1-4 Credits
Independent work for graduate students only, by special arrangement with the faculty. Only for Students presenting strong French preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

GDD - Game Design & Development

GDD 1100 - Intro to Game Development

3 Credits
Introduces students to basic game development topics through game design and implementation activities. Students design, implement, and test computer games using drag-and-drop game creation tools. A small amount of programming is required. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Req., GDD and PREN majors only. Meets with CS 1100.

GDD 1200 - Introductory Programming for Game Developers

3 Credits
Introduction to programming in the context of game development. Develops methods for problem solving, including the effective use of abstraction. Develops programming proficiency in a modern, object-oriented programming language. Students design, implement,and test various games and game components.

GDD 2100 - Game Design for Diverse Populations

3 Credits
Explores the various game design decisions required when targeting games for various diverse populations. Students will learn how to consider gender, ethnicity, and other diversity dimensions through numerous game design projects. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., GDD 1100. Restricted to Game Design and Development majors, undecided engineering majors, and pre-engineering majors.

GDD 2150 - Fundamental Game Design Concepts

3 Credits
Teaches fundamental game design concepts, including character development, storytelling, game balancing, and general level design principles. Also shows how these concepts apply to the most common game genres, as well as addressing the specific issues associated with each genre. Approved for Compass Curriculum requirement: Writing Intensive.

GDD 2200 - Object-Oriented Analysis, Design, and Implementation

3 Credits
Students learn object-oriented analysis and design techniques including domain modeling, use case development, and sequence and class diagram creation in the game domain. Students implement their design in a small game. A variety of data structures are also covered. Prer., GDD 1200.

GDD 2250 - Advanced Data Structures in C++

3 Credits
An advanced study of data structures and object-oriented concepts designed to transition the student to C++. Students explore memory management concepts within C++ including pointers, arrays, constructors, destructors, templates, threads, and GUI development. Prer., GDD 2200

GDD 3000 - Special Topics in Game Design

3 Credits
An opportunity for students to study special topics in Game Design. Course is focused on the development and application of game design skills. Topics offered will cover special interest subjects or rapidly changing areas in the field. Students may take the course several times for credit. Prer., GDD 1200, GDD 2150.

GDD 3100 - User Interface Design for Games

3 Credits
This course introduces students to the design, implementation, and evaluation of human-computer interfaces, with an emphasis on games and immersive environments. Topics include traditional and non-traditional interfaces, design and evaluation of interactive systems, psychological considerations of interaction, interactive hardware design and special input/output techniques. Prer., GDD 1200 and GDD 2150.

GDD 3200 - Team-Based Game Development

3 Credits
This course applies standard approaches from the video game industry for game design and development in a team environment. Students will learn about and use project management, team management, pre-production and post-production, and testing techniques on their projects. Preq., GDD 2150, GDD 2200, or CS 1450.

GDD 3300 - Modeling & Simulation for Games

3 Credits
Teaches students about the issues associated with simulating worlds and experiences in conjunction with the modeling of specific events in those worlds. The course takes a practical approach to how game developers in particular can perform effective modeling and simulation. The foundations laid in this course are particularly important in serious games, where accurate modeling tends to be critical, though the concepts apply for games designed for entertainment as well. Prer., GDD 2200.

GDD 3400 - Artificial Intelligence for Games

3 Credits
The purpose of this course is to teach the Artificial Intelligence techniques that are most important in game development. Topics include Finite State Machines, pathfinding, emergent behavior, and other pertinent topics. The course also shows how these concepts apply to the most common game genres, as well as addressing the specific issues associated with each genre. Prer., CS 2250.

GDD 3600 - Developing Serious Games

3 Credits
Teaches students about the issues associated with developing serious games -- games that "have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement." Serious Games include military games, government

games, educational games, healthcare games, and other classes of games. Prer., GDD 1200 and GDD 2150.

GDD 3800 - 3D Game Environments and Engines

3 Credits
This course examines the use and development of 3-dimensional environments and engines for games. Student development activities will incorporate a variety of topics, including model representation, rasterization, clipping, projection, textures, lighting, animation, collision detection, physics, and procedural graphics development. Req., GDD 2200 or CS 1450, CS 1300 or Math 3130.

GDD 4000 - Special Topics in Game Programming

3 Credits
An opportunity for students to study special topics in Game Programming. Course is focused on the development and application of game programming skills. Topics offered cover special interest subjects or rapidly changing areas in the field. Students may take the course several times for credit. Prer., CS 2250.

GDD 4200 - Flash Game Development

3 Credits
Flash is the technology of choice for developing web-based games. This course teaches students how to use Flash and ActionScript to develop web-based games through a variety of game development projects. Prer., GDD 2200.

GDD 4500 - Online Game Development

3 Credits
Teaches students about the important issues associated with developing and launching online games. Topics include both the technical challenges associated with online games and gameplay issues such as forming an online community and developing effective player interaction models. Also includes a significant review of both successful and unsuccessful online games. Prer., CS 2250.

GDD 4800 - Real-Time Procedural Graphics

3 Credits
This course will cover state of the art techniques for generating realistic real-time graphics and procedural techniques for real-time graphics, visualization, and modeling. The class will cover topics ranging from realistic rendering techniques for games, next-generation PC graphics hardware, and game consoles to non-photorealistic procedural techniques for enhancing visualization and simulating natural phenomena. Prer., GDD 3300.

GDD 4900 - Commercial Game Development Practicum

3 Credits
Students in this course individually design and develop a game available to the public for purchase or free play. Developed games will be unique student Intellectual Property and will be commercial-quality implementations of student game concepts. Req., Seniors only.

GDD 4990 - Independent Study in Game Design and Development

1-3 Credits
Independent study of a student-selected topic in the game design and development domain. Req., Instructor permission required.

GEOL - Geology

GEOL 1010 - Physical Geology

4 Credits
Study of surface features of the earth and how they were formed: rocks that make up the crust of the earth. GEOL 1010 (Lab) must be taken concurrently. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

GEOL 1020 - Historical Geology

4 Credits
Development of the science of geology, study of earth history and development of life forms throughout geologic time. Three lectures and one field trip or laboratory per week. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., GEOL 1010, GES 1010, or concurrent enrollment.

GEOL 1530 - Geological Development of Colorado and the West

4 Credits
Three lectures and one field trip or laboratory per week. An outline of the development, through time, of the geology of Colorado. Includes a summary of the evolution of life. Last part of course is devoted to history of development of economic resources, including placer and hard rock mining, coal, oil and gas production, and oil shale. This is a course for non majors designed as a follow-up for those who have had GEOL 1010. Approved for LAS Natural Science area requirement.

GEOL 3050 - Introduction to Petrology

4 Credits
Texture, mineralogy, and chemical composition of igneous, sedimentary and metamorphic rocks. Rock classification, interpretation of origin and history of rocks. Emphasis on hand specimens and field determination. Field work and two weekend field trips. Req. GEOL 1010, GEOL 1020, GEOL 3410, and GEOL 4310.

GEOL 3120 - Structural Geology

4 Credits
Geometric techniques for describing and illustrating geological structures. Major topics include graphic methods and geometry of fractures, folds, and igneous bodies. Field work and two weekend field trips. Prer., GEOL 1020, GEOL 3410, and GEOL 4310.

GEOL 3170 - Geology and Our National Parks

3 Credits
Promotes an interest in and an appreciation of the geologic aspects of our national parks. The student will be given fundamental background in the geological processes which have worked to evolve the spectacular or unique scenery found in the national parks. Because the approach to this class is of a qualitative nature, the prospective student need not have a prior background in the earth sciences. Approved for LAS Natural Science area requirement.

GEOL 3410 - Introduction to Paleontology

4 Credits
Collection, identification, classification, and uses of fossils in paleoecology, evolution, and biostratigraphy. Prer., GEOL 1020 or one year of biology or consent of instructor.

GEOL 3520 - Oceanography

3 Credits
Oceans and their basins, water masses, circulation patterns, climate regulation, life zones, bottom sediments, and resources. Geologic aspects of the sea, both modern and ancient.

GEOL 3700 - Environmental Geology

4 Credits
Interaction of industrial society with earth resources and geologic processes. Investigation of geologic hazards to engineering systems and problems related to resource development. Evaluation of criteria for urban planning, land utilization, waste disposal, and resource conservation. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirements: Sustainability; Explore-Physical and Natural World.

GEOL 4030 - Introduction to Hydrology and Ground Water

4 Credits
Occurrence, movement and properties of subsurface water; introduction to groundwater geology and hydrology. Prer., GEOL 1010, GES 1010 or concurrent enrollment in MATH 1040.

GEOL 4110 - Geologic Field Methods

3 Credits
Methods of geologic mapping including Brunton compass and plane table surveying utilization. Coreq., GEOL 3120. Additional field work required. Meets with GEOL 5110.

GEOL 4310 - Sedimentology and Stratigraphy

4 Credits
Study of the principles of sedimentation and stratigraphy. Principles are used to interpret the tectonic history of sedimentary basins. Field trips and projects are required. Prer., GEOL 1010, GEOL 1020.

GEOL 4360 - Glacial and Periglacial Geology

4 Credits
Introduction to glaciology and periglacial geology and their influence on topography, crustal rebound, and sea level; and glacial chronology for northern North America. A study of cold-climate geomorphic and climatic processes. Prer., GEOL 1001 or GES 1010. Meets with GEOL 5360.

GEOL 4630 - Principles of Geomorphology

4 Credits
Systematic study of rock weathering, mass-wasting, fluvial, glacial, and aeolian processes and the landforms resulting from these processes. Climatic geomorphology, geomorphometry, and data collection technologies, e.g., lidar) are emphasized. Field trips required. Prer., GEOL 1010 or GES 1010 or consent of instructor. Meets with GEOL 5630, GES 4310 and GES 5310.

GEOL 4660 - Field Study in Geology

0.5-4 Credits
A field trip to an area of special geologic interest which can occur during the winter, spring, or summer. Approved for LAS Natural Science area requirement. Meets with GEOL 5660.

GEOL 4910 - Engineering Geology

4 Credits
Intensive literature review and field investigations leading to a recognition of the engineering and construction problems associated with natural hazards and earth materials such as mass movement, dam location, highway development, and building construction. Basic courses in physics, mathematics, and geology recommended. Meets with GEOL 5910.

GEOL 5030 - Introduction to Ground Water

4 Credits
Same as GEOL 4030 with additional work required.

GEOL 5360 - Glacial and Periglacial Geology

4 Credits
Same as GEOL 4360 with additional work required. Prer., GEOL 1010, GES 1010, GEOL 4630 preferred. Meets with GEOL 4360.

GEOL 5630 - Principles of Geomorphology

4 Credits
Systematic study of rock weathering, mass-wasting, fluvial, glacial, and aeolian processes and the landforms resulting from these processes. Climatic geomorphology, geomorphometry, and data collection technologies (e.g., lidar) are emphasized. Field trips required. Prer., GES 1010 or GEOL 1010 or consent instructor. Meets with GEOL 4630, GES 4310, GES 5310.

GEOL 5660 - Field Study in Geology

0.5-4 Credits
A field trip to an area of special geologic interest which can occur during the winter, spring, or summer. Meets with GEOL 4660.

GEOL 5910 - Engineering Geology

4 Credits
Intensive literature review and field investigations leading to a recognition of the engineering and construction problems associated with natural hazards and earth materials such as mass movement, dam location, highway development, and building construction. Basic courses in physics, mathematics, and geology recommended. Will require additional field work. Meets with GEOL 4910.

GEOL 7000 - Masters Thesis

1-6 Credits
Masters Thesis. Instructor Consent Required.

GEOL 9400 - Independent Study in Geology: Undergraduate

1-4 Credits
Independent work for undergraduates. By special arrangement with faculty. Only for students presenting strong geology preparation. Prer., Instructor Consent Required.

GEOL 9600 - Independent Study in Geology: Graduate

1-4 Credits
Independent work for graduate students. By special arrangement with faculty only. Prer., Instructor Consent Required.

GEOL 9990 - Candidate for Degree

0 Credits
Candidate for Degree

GER - German

GER 1010 - Beginning German I

4 Credits
Essentials of German, oral-aural skills stressed with additional reading, writing, and grammar.

GER 1020 - Beginning German II

4 Credits
Essentials of German continued. Additional oral-aural skills practice with increased grammar, reading, and writing. Prer., GER 1010 or equivalent.

GER 2110 - Intermediate German I

4 Credits
German at the intermediate level with concentration on conversation, culture, and civilization or literature at that level. Prer., GER 1020 or equivalent.

GER 2120 - Intermediate German II

3 Credits
An intermediate German course continuing conversational usage and cultural integration utilizing contemporary materials, newspapers, etc. Prer., GER 2110 or equivalent.

GER 2930 - Professional German

3 Credits
German for professional studies: exercises in German business and other professional correspondence, terminology, readings and translations in professional and bureaucratic areas. Prer., GER 2120.

GER 3000 - German Grammar & Composition

3 Credits
Designed to review extensively the functional application of modern German. Presents a skill-development approach featuring graded compositions and oral practice based on material encountered in media and informal situations. Prer., GER 2120.

GER 3010 - Adv Conversation & Composition

3 Credits
Ongoing grammar review with practice in conversation and development of skills in composition with emphasis in oral presentations and formal compositions, including academic essays. Prer. or Coreq., GER 300.

GER 3020 - Advanced Conversation and Composition II

3 Credits
Practice in oral and written communication at an advanced level based on literary, historical and cultural readings. Prer., GER 3000.

GER 3050 - Professional German

3 Credits
The vocabulary and usage of German in a variety of professional and cultural contexts. May include applied business correspondence, marketing and accounting terminologies, other forms of professional correspondence, bureaucratic forms and contacts as well as study and application of cultural practices in professional settings.Prer., GER 2120.

GER 3100 - Intro to Germanophone Literature

3 Credits
An introduction to early German literature from the beginnings to the enlightenment within appropriate historical, cultural, and linguistic content. Taught in German for advanced intermediate speakers. Req., GER 2120 or equivalent.

GER 3130 - 18th Century German Literature

3 Credits
A survey of German language literature from 1700 to 1800. Readings and analysis of literature of the phases of the Enlightenment and of Classicism including such authors as Leibnitz, Lessing, Goethe, and Schiller. Prer., GER 3000 or GER 3010 or equivalent.

GER 3140 - 16th and 17th Century German Literature

3 Credits
A survey of German language literature from 1500 to 1700. Readings and analysis of literature of the Renaissance, Reformation and Baroque including such authors as Martin Luther, Hans Sachs, Gryphius, and Von Grimmelshausen. Prer., GER 3000 or GER 3010 or equivalent.

GER 3160 - 20th Century German/Austrian Literature

3 Credits
A survey of German language literature from 1900 to the present. Lecture course. Readings and analysis of different periods and styles from impressionism through feminism and post-modernism including authors such as Holz, Schnizler, Thomas Mann, Kaiser, Brecht, Boll, Bachmann, Durrenmatt, Muller, and Wolf. Prer., GER 3000 or GER 3010 or equivalent.

GER 3170 - 19th Century German/Austrian Literature

3 Credits
a survey of German language literature from 1800 to 1890s. Lecture course. Readings and analysis of literature of late Romanticism, Realism, Naturalism, including such authors as Goethe, Kleist, Eichendorff, Stifter, Buchner, Keller, Hauptmann. Prer., GER 3000 or GER 3010 or equivalent.

GER 3180 - German/Austrian Civilization and Culture from 1700-1918

3 Credits
Lectures, films, readings, discussions in English; knowledge of German not required. Study of development of German and Austrian culture and institutions from 1700 to 1918, emphasizing literature, art, philosophy and music. Approved for LAS Humanities area requirement and Global Awareness requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Meets with FCS 3180.

GER 3190 - 20th and 21st Century German and Austrian Civilization and Culture

3 Credits
Lectures, films, readings, discussions in English; knowledge of German not required. Study of development of German and Austrian cultures and institutions from 1919 to the present emphasizing literature, design, art, and film. Approved for LAS Humanities area requirement and Global Awareness requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Meets with FCS 3190.

GER 3230 - Applied Conversation

1 Credit
Conversation at the advanced level on contemporary topics in German culture. Prer., GER 2120 or equivalent.

GER 3390 - Internship in Applied German

1-3 Credits
The foreign language department will offer to advanced German language students the opportunity to apply their knowledge of German in settings such as schools, social support agencies, etc. Prer., 3000 level German courses and departmental permission.

GER 3400 - Hollywood's Germany: The German and Austrian Image in American Film

3 Credits
The course will examine products of American cinema from post-WWI through the "Golden Age" studio era into the present that deal with Germany and Austria or with characters that represent these two nationalities. Study will focus on ways in which stereotypes and the formal structure of film create their own parallel history and cultural imprints. Meets with FILM 3400 and FCS 3400.

GER 3450 - German Film

3 Credits
Screenings, lecture, discussion; knowledge of German not required. German film in a cultural context from beginnings to the present featuring such directors as Lang, Von Sternberg, Riefenstahl, Sagan, Thiele, Fassbinder, Schlondorff, Wenders, Adlon, and Tykwer. Prer. GER 2120 or equivalent if taken for German credit. Meets with FCS 3450 and FILM 3450.

GER 3500 - Special Topics in German/Austrian Studies

3 Credits
Varying topics of current importance in literary and socio cultural study. May be repeated once for credit if topic is different. Prer., GER 3000, GER 3010, or equivalent. Meets with F CS 3560.

GER 3850 - Austrian and Central European Film

3 Credits
Screening, lecture and discussion are included in this course. Knowledge of German is not required for non-German minors. This is a survey of Austrian cinema in a cultural context from the beginning to the present and its relationship with Hungarian and Czechoslovakian film. Directors such as Kolm-Fleck, Korda, Forst, Hartl, Marischka, Corti, Ruzowitzky, Albert and Haneke are featured. Meets with FILM 3850 and FCS 3850.

GER 9200 - Independent Study

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong German preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

GER 9300 - Independent Study

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong German preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

GER 9400 - Independent Study

1-4 Credits
Independent work for undergraduates only, by special arrangement with the faculty. Only for students presenting strong German preparation. May be repeated up to three times for credit. Prer., Consent of instructor and department chair.

GER 9500 - Independent Study

1-4 Credits
Independent work for graduate students only, by special arrangement with the faculty. Only for students presenting strong German preparation. Maybe repeated up to three times for credit. Prer., Consent of instructor and department chair.

GES - Geography & Envir Studies

GES 1000 - Environmental Systems: Climate and Vegetation

4 Credits
A general introduction to energy, atmospheric motion, solar radiation, the hydrologic cycle and climate change. Includes consideration of climatic elements as they interact with vegetation, animals, and humans in ecosystems. This class is taught in a variety of learning situations, including lecture, laboratory, web-based and tutorials. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Sustainability; Explore-Physical and Natural World.

GES 1010 - Environmental Systems: Landforms and Soils

4 Credits
An introductory survey primarily concerned with the agents and processes of landform shaping and soil genesis. Major emphasis is on the genesis, distribution, and utility of surface features in a variety of learning situations, including lecture, web-based, laboratory, tutorials, and field trips. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

GES 1050 - Introduction to Map & Compass

4 Credits
A basic introduction to topographic maps will be given. This will include the process involved with making and field-checking maps; discussion of symbolization, scale, and landform representation. The development of the compass will be outlined and basic skills will be taught. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

GES 1500 - Introduction to Environmental Studies and Sustainability

4 Credits
This course takes an interdisciplinary approach to examine how humans interact with the environment, to understand the impacts of these interactions, and to consider what can be done to make these interactions more sustainable.

GES 1980 - World Regional Geography

4 Credits
A survey of world regions that explores the diversity of human cultures and environments within the wider global context. This issues-oriented class examines the cultural, political, economic and environmental forces that shape each region and the impacts of globalization on our increasingly interconnected world. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior.

GES 1990 - Introduction to Human Geography

4 Credits
A systematic introduction to the broad field of human-land interactions and spatial order. Emphasis is placed on the major themes of geographic inquiry including use of thematic maps, population numbers and distribution, development, changing resource and land use, culture regions, location decisions, settlements and cities, transportation, political units, and human-environment interactions. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. GT-SS2.

GES 2000 - Geographic Regions of the World

3 Credits
An introduction to the world's geographic realm and their human and physical characteristics. A variety of geographic themes (such as population growth, urbanization, economic development and environmental deterioration) are set in their regional contexts.

GES 2010 - Economic Geography: Resources, Development, and the Future

3 Credits
Introductory consideration of the location of resources, the role of natural resources in economic and technological development and resource utilization and the future. Use of the theory of spatial organization and behavior in economic activity including agriculture, manufacturing, transportation, service activities, urban location, systems of cities, and growth patterns. Case studies.

GES 2050 - Digital Earth

4 Credits
Introduces several technologies used to collect, store, manage, analyze, and disseminate information about the earth. These technologies include geographic information systems (GIS), web maps services (WMS), global positioning systems (GPS), cartography, geovisualization, and remote sensing.

GES 2100 - Humans and Environments

3 Credits
An overview of global environmental issues including climate change, sustainable agriculture, waste management, deforestation, population and energy. Individual, local, state, regional, national and international decision making tools and implications will be explored through case studies in industrialized and non-industrialized countries.

GES 2980 - Professional Experience I

1-6 Credits
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Instructor Consent Required.

GES 3030 - Introduction to GIS

4 Credits
An introduction to Geographic Information Systems (GIS) as a research tool. Students will use ESRI software to complete a series of geographic projects. A basic understanding of cartography and computer use is expected. Meets with GES 5030.

GES 3050 - Introduction to Cartography

4 Credits
An introduction to the principles and theory of map-making. The emphasis will be on the design of maps for research and publication using advanced computer hardware and software. The course entails the creation of reproducible, thematic maps using the various computer techniques available to the cartographer.

GES 3060 - Introduction to Remote Sensing

4 Credits
This course addresses the basic principles of image interpretation and analysis and introduces considerations central to the acquisition and interpretation of aerial photography and satellite imagery. Additionally, students are introduced to the range of remotely sensed data products available and explore the benefits and limitations of using remotely sensed data. Lectures are complimented by lab components which are designed to introduce students to basic image analysis techniques. Meets with ENSC 4060 and GES 5060.

GES 3070 - Geography of Sub-Saharan Africa

3 Credits
Introduces the diverse physical and social geographies of Sub-Saharan Africa. It will examine internal dynamics of the region as related to physical and social geography, and will explore the role of Sub-Saharan Africa within the global context. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity), Sustainability.

GES 3080 - Maps as Historical Documents

3 Credits
Students are introduced to methods of selecting, interpreting, and using historical maps as source documents, complementing written texts. Explores themes in history of cartography and spatial history, how patterns of historical-geographic change are revealed in traditional and digital maps. Meets with HIST 3080.

GES 3100 - Digital Field Mapping with GPS

3 Credits
Explores the theory of GPS, provides practical experience using GPS units, and explores the interaction between GIS (Geographic Information System) and GPS through use of ESN, and Trimble Pathfinder software. Prer., GES 3030.

GES 3160 - Geographic Education

3 Credits
Explores approaches to teaching geography in K-12. Includes discussion of important geographic concepts and their integration into the classroom. Students will develop teaching activities and materials for incorporation into their curriculum.

GES 3170 - Saving Place

4 Credits
Examines basic theories, concepts, and people within the sustainability movement and bioregionalism. Through critical readings, group projects, field trips, and applied research, students will apply ideas and techniques they have learned to real-world case studies. Approved for Compass Curriculum requirement: Sustainability.

GES 3180 - Changing Place

3 Credits
This course allows students to translate what they have learned about sustainability into campus action. Students identify a campus sustainability issue to address and work to effect associated campus change. Approved for Compass Curriculum requirement: Sustainability. Prereq., GES 1000, or GES 3170, or GES 4800, or PHIL 1400, or WEST 4120, or consent of instructor.

GES 3200 - Practical Meteorology

4 Credits
An introduction to weather and meteorological phenomena. Topics include radiation balance, atmosphere structure, air masses and fronts, clouds, precipitation, storm structure, mesoscale systems, weather map analysis, forecasting, mountain weather, snow and snowpack processes, severe weather, weather hazards, lightning and landscape interactions, and remote sensing technologies in meteorology. Field trips may be required. Approved for LAS Natural Science area requirement. Meets with ENSC 3200.

GES 3210 - Basic Weather Analysis and Forecasting

4 Credits
An expanded application of meteorological principles with emphasis on modern techniques for interpreting and forecasting weather. The course includes a review of basic principles, interpretation of various types of weather charts, and forecast techniques. Lecture sessions will be followed by student preparations of weather analysis and forecast charts. Prer., GES 1000 or 3200.

GES 3250 - The Geography of Climate Change

3 Credits
Students investigate the theory and evidence of climate change from a geographical perspective. The course incorporates the interactions and interrelationships of humans and the environmental system while in the study of global environmental changes in different locations. Students use readings, lectures, discussion, research, computer simulation, and their own critical and analytical thinking skills in the process of forming their own conclusions about the status of climate change in different locations. Written and oral presentation skills will be enhanced as the students present and defend their theory and findings to their peers. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Sustainability.

GES 3300 - Spaces of Political Geography

3 Credits
Explores the intersection of power and geographical space at four scales: the global scale, the national scale, the urban scale, and the scale of the body.

GES 3400 - Geopolitics

3 Credits
Addresses the causes and consequences of global conflict and power distribution from a geographic perspective. Geopolitics looks at how geographic factors such as culture, language, religion, climate, topography, and size influence a state's population and power capabilities. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

GES 3410 - Sonic Landscapes

3 Credits
This is a cross-disciplinary course bridging creative sound art and music practices with geography, naturalism, and environmentalism through the exploration of local geographies, landscapes, and the natural world. Approved for Compass Curriculum requirement: Navigate. Meets with MUS 3410.

GES 3500 - Nature and Society

3 Credits
The relationship between nature and society is one of the pillars of geographic inquiry. This course surveys the relationship between nature and society by examining topics including population, energy, conservation, agriculture, and pollution in the context of geographical studies. Prer., GES 1000 or GES 1010 or instructor consent.

GES 3600 - Geography of American Folk and Ethnic Music

3 Credits
Music is ubiquitous in America today. This course will analyze the geographic context of American folk and ethnic music. A variety of geographic concepts and their relationship to the development of American folk and ethnic music will be discussed.

GES 3610 - Urban Geography

3 Credits
Course addresses topics in urban location, urban morphology and design, urban function, and urban social issues. We analyze why cities look as they do and the role cities play in society. Emphasis is on cities in the United States. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5610.

GES 3660 - Applied Community Studies

3 Credits
A service-learning, community-based research course in which students, professors, and community members work together to reach community-identified goals. Working in teams, students will learn to apply anthropology and human geography research methods in developing effective community outreach programs. Prer., two courses in anthropology, sociology, geography, or education, or permission of instructor. Meets with ANTH 3660.

GES 3700 - Cultural Geography

3 Credits
This course explores the themes, methodology and techniques associated with the spatial aspects of culture, cultural traits and contemporary cultural theory.

GES 3730 - Population Geography

3 Credits
This course examines international population processes and patterns. First, past, present, and future dynamics of population growth are investigated. Second, varying perspectives on "overpopulation" (neo-Malthusian, cornucopian, distributionist) are discussed. Third, we show how in-depth case studies of the population geography of particular places and spaces shape the world around us. Meets with GES 5730.

GES 3750 - Conservation Biology

4 Credits
The major focus is the application of biological and ecological principles to preserve biodiversity. Ultimate sources and current worldwide losses of biological diversity are emphasized. Because conservation biology demands multidisciplinary approaches, historical, legal, economic, and ethical issues are also included. Prer., BIOL 1150, BIOL 3700 recommended. Consent of instructor required. Meets with BIOL 3750 and BIOL 5700.

GES 3800 - Geography of Pikes Peak Region

3 Credits
A regional rather than synoptic approach is taken to the study of two formal regions: the Great Plains and the southern Rocky Mountains, and an informal region to include Colorado Springs, Cripple Creek and the nearby western High Plains.

GES 3820 - Mexico, Central America, and the Caribbean

3 Credits
Study of culture and society, and human relationship to the physical environment of Mexico, the Central American countries, and the Caribbean islands. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

GES 3830 - Geography of Colorado

3 Credits
Examines the physical, cultural, and economic environments in the state of Colorado. Includes in-depth analysis of physical as well as human components of the state. Field trips required. Prer., GES 1010 or GES 1990 or instructor consent.

GES 3850 - Historical Geography of the U.S.

3 Credits
Historical geography as a method for study of changing and evolving landscapes.

GES 3860 - Geography of the American Southwest

3 Credits
Examines the physical and cultural environment of the American Southwest. Includes an analysis of landforms, vegetation, climate, prehistoric cultures, modern native American peoples, Hispanic settlement, and modern demographic and social changes.

GES 3900 - Historical Geog of the British Isles

3 Credits
Traces the historical evolution of the British landscape from prehistoric times to the present day. Particular regions like Wales, Yorkshire, the Lake District and Western Ireland will be examined in detail.

GES 3920 - Geography of Food

3 Credits
Addresses four geographical topics of food: 1) The political economy of food production; 2) food production and the environment; 3) food and cultures; and, 4) food and nutrition. Students will better appreciate our complex relationship with food. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5920.

GES 3980 - Places and Faces: Geographic Issues in Film

4 Credits
This advanced world regional course uses contemporary film as a vehicle to explore current global geographic issues. It examines cultural, political and economic issues that shape societies, focusing on marginalized ethnic and racial groups, women and the economically disadvantaged. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., GES 1980 or consent of instructor..

GES 4000 - Statistical Analysis in Geography

4 Credits
The application of statistical and other quantitative techniques to geographically organized data, areal distributions, and the solution of geographic research problems. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Meets with GES 5000.

GES 4010 - Technology, Development and Economic Geography

4 Credits
Theory and issues in contemporary economic geography. Explores process leading to interregional change, spatial interaction between places, and the homogenization of economies and cultures.

GES 4020 - Qualitative Methods in Geography

3 Credits
The course provides theoretical and practical experience in qualitative methods commonly used in geography and other social sciences. Methods covered include interviewing, participatory action research, observation, discourse analysis, questionnaires, and historical research. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., GES 1990 or consent of instructor. Meets with GES 5020.

GES 4070 - Geovisualization

4 Credits
Students will learn the principles, concepts, methods and applications of geovisualization. Students will have hands-on experience in using highly interactive, dynamic and multidimensional geovisualization systems that offer high levels of user experience. Prer., GES 3030; recommended prer., GES 3050, GES 4130. Meets with GES 5070.

GES 4080 - Advanced Geographic Information Systems (GIS)

4 Credits
Continued application of GIS for spatial analysis. Focuses on ESRI software and complete original research projects. Prer., GES 3030; GES 3060 recommended. Meets with GES 5080.

GES 4090 - Image Processing

4 Credits
This is a writing intensive course which provides an introduction to the advanced methods of environmental and natural resource data analysis using remotely sensed imagery. Emphasis will be placed on digital image analysis of freely available data sources. This is a project-oriented course in which students will work through the remote sensing process in entirety -- from the design of a research question to presentation of results. No previous programming experience required. Approved for Compass Curriculum requirement: Writing Intensive. Prereq., GES 4060 or consent of instructor. Meets with ENSC 4090 and GES 5090.

GES 4110 - Introduction to Field Techniques

4 Credits
A field-based course that introduces students to the multiple techniques used by geographers for data gathering and analysis. These techniques will include elementary surveying, GPS, hydrologic and landform measurements, map and compass use, dendrochronology analysis, and cultural/economic land use mapping. Field trips required.

GES 4120 - Internet Geographic Information Systems

4 Credits
Students will learn the fundamentals of Internet GIS technology and develop hands-on experience in programming and implementing Internet mapping applications using various tools including ESRI ArcServer, Google Maps, and JavaScript APIs. Prer., GES 3030, GES 4130. Meets with GES 5120.

GES 4130 - Intro to Geospatial Computing

4 Credits
Introduces students to the main computational concepts and techniques relevant to geospatial applications, from basics of programming and algorithms to automating geospatial analysis tasks. The course will allow students to extend their abilities to analyze geospatial data and prepare for higher-level classes. Prer., GES 3030; GES 3060 recommended. Meets with GES 5130.

GES 4160 - Teaching Geography

1-4 Credits
Practicum and/or tutorial, by special arrangement only, in the teaching of geography (for example, serving as small-group leaders or proctors in introductory courses, or developing and/or testing curriculum materials). Consent of instructor required.

GES 4170 - Writing Place

4 Credits
Provides multiple opportunities to improve geographic writing skills. Explore, write, map, draw, and photograph. Uses the campus land to develop writing about the "sense of place." Approved for Compass Curriculum requirement: Sustainability.

GES 4220 - Synoptic Climatology

3 Credits
The physical processes involved with the development and transportation of weather systems. Selected topics include relationships between upper atmospheric flow and surface weather phenomena, synoptic evaluation of air masses and techniques for environmental analysis. Prer., GES 1000. Meets with GES 5220.

GES 4260 - Biogeography

4 Credits
An examination of the distribution of life on the Earth's surface. The relationship between environmental factors and plant and animal distributions will be the central theme. Changes in distributions through time will also be examined. Required field trip. Prer., GES 1000 or consent of instructor. Meets with GES 5260.

GES 4270 - Advanced Biogeography

4 Credits
A project-oriented class with students studying the distribution of plants as related to environmental factors. This class will combine lecture, fieldwork, and data processing, resulting in maps and reports. The geographical area of study will be changed each time. Prer., GES 4260/GES 5260 or instructor consent. Meets with GES 5270.

GES 4280 - Plant Communities of the Western United States

4 Credits
An examination of plant assemblages in the contiguous United States west of the one-hundredth meridian. The distribution of major plant species will be used to illustrate plant community interactions with environmental factors such as climate and landforms. Prer., GES 4260/GES 5260. Meets with GES 5280.

GES 4290 - Plant Communities of Colorado

4 Credits
An examination of plant assemblages in Colorado. Major plant communities will be examined in the context of environmental factors such as climate and land forms. Required field trip. Prer., GES 4260 or consent of instructor. Meets with BIOL 4290, BIOL 5290, and GES 5290.

GES 4310 - Principles of Geomorphology

4 Credits
Systematic study of rock weathering, mass-wasting, fluvial, glacial, and aeolian processes and the landforms resulting from these processes. Climatic geomorphology, geomorphometry, and data collection technologies (e.g., lidar) are emphasized. Field trips required. Prer., GES 1010 or GEOL 1010 or consent instructor. Meets with GES 5310, GEOL 4630, GEOL 5630.

GES 4320 - Mountain Environments

3 Credits
Field course emphasizing study of landforms produced by weathering and soils, mass movement, erosional processes under all climatic and altitudinal conditions. Includes Front Range glacial geology and glaciology. Prer., GES 1000 or consent of instructor. Meets with GES 5320.

GES 4340 - Soils

4 Credits
Covers the nature and distribution of soils through an investigation of the basics of soil genesis and development. It will stress the environmental components involved in soil production and the geographic distribution of soil types. Approved for Compass Curriculum requirement: Sustainability. Prer., GES 1010 or GEOL 1010 or consent of instructor. Meets with GES 5340.

GES 4410 - Resource Management and Conservation

3 Credits
Inventory, policy, and management of natural resources. Nature, significance, distribution, and problems associated with water, forest, wildlife, soils, and recreational resources. Emphasis is on experience in the United States, but other global problems may be included. Meets with GES 5410.

GES 4420 - Conservation & U.S. Public Lands

3 Credits
Examines the legacy of public lands in the U.S. and whether management policies have evolved from an emphasis on resource extraction to one focused upon conservation. Topics will include national parks, forests, recreation, and wildlife conservation. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5420.

GES 4450 - Analysis of Environmental Systems

3 Credits
An analysis of the various factors involved in the routing of environmental impact statements. Emphasis will be on analytical procedures associated with the evaluation of environmental systems and applications specific environmental impact problems. Meets with GES 5450.

GES 4460 - Field Studies in Geography

1-6 Credits
Field investigations focused on a specific aspect of the landscape in a selected area. Topic and credit vary from year to year. Field trips required. Approved for Compass Curriculum requirement: Summit. Meets with GES 5170.

GES 4480 - Environmental Problems of Colorado

3 Credits
A discussion and investigation of the environmental problems of the State of Colorado with an emphasis on land planning and land use, pollution, transportation, energy, and hazards. Programs to alleviate as well as to minimize any further related environmental problems will be developed. Meets with GES 5480.

GES 4500 - Water Resources and Water Problems

3 Credits
A descriptive interpretation and detailed inventory of hydroclimatic data, surface water, and ground water. The use of water is critically evaluated with emphasis on problems associated with geographic maldistribution, appropriation, irrigation, industry, pollution, and regional development. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5500.

GES 4510 - Hydrology

3 Credits
Exploration of the principles of hydrology and their application to environmental investigations. Meets with GES 5510.

GES 4550 - Disasters and Society

3 Credits
Case studies of slow and quick developing disasters will be discussed in a local, national, cross- cultural, and global framework. Issues covered will include technological hazards,

the role of environmental perception, risk-taking, decision- making and the impact legislative changes at the local, state, and national levels. Meets with GES 5550.

GES 4560 - Cultural and Political Ecology

3 Credits
Considers how ecological conditions and socio-political systems are inherently linked. Major topics include environmental narratives, energy development, the role of technology in society, and sustainable development across a range of geographical contexts. Approved for Compass Curriculum requirements: Sustainability; Writing Intensive. Meets with GES 5560.

GES 4570 - Militarization, Environment, and Society

3 Credits
Considers how military activities shape and influence diverse social and physical settings. The course takes a critical look at militarism at home and abroad, during times of war and peace, and the changing role of sustainability in militarization. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5570.

GES 4600 - The Cultural Landscape

3 Credits
Students will learn to interpret the American cultural landscape, particularly everyday surroundings that they frequently take for granted. We will emphasize how cultural values shape the world around us, from modifications to the natural terrain to the cities in which we live. Meets with GES 5600.

GES 4620 - Race, Ethnicity, and Place

3 Credits
A geographical perspective of the dynamics and processes of racialization in various U.S. urban contexts. Maps the dynamic relationship between social relationships and the built environment. Meets with WEST 4620.

GES 4640 - Mega-Cities

3 Credits
This seminar provides a global perspective on the nature of urbanization, the forces behind these patterns, and resulting effects on social, political, economic, and environmental organization and governance of the world's largest mega-cities (cities with a total population of 10 million+ people). Approved for LAS Global Awareness requirement.

GES 4650 - Restoration Geographies

4 Credits
Examines landscapes of restoration and their environmental, economic, ethical, and practical implications in order to develop a robust understanding of restoration, and its relationship to geography. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5650.

GES 4660 - Urban Ecology

3 Credits
This course explores the human-environment interactions within urban settings. Special consideration is given to measuring patterns of change, and to social and ecological feedbacks in urbanized lands. This is a field-based course which involves collecting and analyzing primary data. Meets with GES 5660.

GES 4680 - Inequality USA

4 Credits
This course identifies how inequality is defined, measured, studied, and understood by geographers. Students will analyze quantitative and qualitative data sources to explain inequality in the U.S., and will conduct research identifying spaces of inequality in Colorado Springs. Approved for LAS Cultural Diversity requirement. Meets with GES 5680, WEST 4680, SOC 4680, and SOC 5680.

GES 4700 - Geographic Issues

1-4 Credits
Geographic perspectives or dimensions of selected areas such as pollution, poverty, world conflict, natural hazards, landscape perception or women's communities will be presented. Topics vary from year to year.

GES 4750 - Recreation, Tourism, and the Environment

3 Credits
Examines the historical geographies of recreation and tourism, and the environmental and cultural impacts of the ski industry in Colorado, international ecotourism, and contemporary trends of recreational values and activities. Approved for Compass Curriculum requirement: Sustainability. Meets with GES 5750.

GES 4760 - Women's Space, Women's Place: Women's Role in Changing the Face of the Earth

3 Credits
A reexamination of traditional aspects of cultural and regional geography from a feminist perspective. Understanding the full richness of the human experience in utilizing earth as habitat requires a conscious effort to explore the omissions about where, how, and why women live, work, migrate, perceive their environment, and generally contribute to the intricate mosaic of spatial organization. The geographical origins and distributions of differing roles of women in a number of societies are also explored. Meets with WEST 4760.

GES 4770 - Development of Geographic Thought

3 Credits
The course will focus upon discussions and studies of the development of geographic thought and philosophies. Both past and present literature will be appraised with particular emphasis placed upon the themes and topics significant to the growth of modern geographic philosophy. Meets with GES 5770.

GES 4780 - Global Migration

3 Credits
Provides a global perspective on the nature of migration, the forces behind these patterns, and their effects in sending and receiving societies. Students will delve into several literatures, lead weekly sessions, and introduce perspectives on international migration. Meets with GES 5780.

GES 4800 - Sustainability Seminar

3 Credits
The Capstone course for the Sustainable Development Minor is designed for seniors in the minor to focus on an inquiry-based project. Independent and small group work is emphasized to contribute to sustainable development efforts on campus and in the community. Approved for Compass Curriculum requirement: Sustainability. Prer., Juniors and Seniors only; at least three courses in the Sustainable Development Minor.

GES 4900 - Geography Summit

3 Credits
Summit (capstone) experience in Geography and Environmental Studies. Includes field-based learning, research proposal writing, and

career preparation. Approved for Compass Curriculum requirement: Summit. Prer., GES 1000, GES 1010, GES 1980, GES 1990.

GES 4910 - The World of Wines and Vines

3 Credits
Focus on the physical and cultural geography of the world's grape-producing regions. Coverage will include the study of terrain, soils, climate, and other aspects of physical geography; the historical geography of viticulture; the procedures and processes associated with growing grapes and making wines; and a detailed analysis of specific regions such as the Bordeaux area, the Napa Valley, and German wine regions. Prer., Must be 21 years of age.

GES 4940 - Seminar: Practicum in Image Processing

4 Credits
Prer., GES 4050 or GES 4090 and consent of instructor required.

GES 4970 - Honors in Geography

3 Credits
Independent research and thesis for geography majors who have maintained a superior scholastic performance in their overall program and within the department of geography and environmental studies. For superior students who wish to attain honors in the field of geography. May be taken in lieu of GES 4990. Instructor Consent Required. Approved for Compass Curriculum requirement: Summit.

GES 4980 - Internship in Geography

1-4 Credits
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Instructor consent required. Junior or Senior standing preferred.

GES 4990 - Senior Thesis

3 Credits
A one semester research project. The student will write a formal research paper drawing on primary sources and pertinent secondary material. The student will work under the direction of a full time member of the department and have a second member as an additional reader. Instructor Consent Required. Approved for Compass Curriculum requirement: Summit.

GES 5000 - Quantitative Methods

4 Credits
Research-oriented quantitative methods seminar. Advanced data analysis techniques for use in geographic and environmental research. Meets with GES 4000.

GES 5010 - Seminar: Geographic Research

3 Credits
An analysis of research topics and methodologies in geography. Students will define a research topic, review literature in their field of interest, and prepare a research proposal. Prer., BA or BS.

GES 5020 - Qualitative Methods in Geography

3 Credits
The course provides theoretical and practical experience in qualitative methods commonly used in geography and other social sciences. Methods covered include interviewing, participatory action research, observation, discourse analysis, questionnaires, and historical research. Req., GES 1990 or consent of instructor. Meets with GES 4020.

GES 5030 - Introduction to GIS for Graduate Students

4 Credits
Information Systems (GIS) as a research tool. Students will use ESRI software to complete a series of geographic projects and pursue the application of GIS to their own research areas. Prer., GES 2050 or GES 3050 or consent of instructor. Meets with GES 3030.

GES 5060 - Seminar: Adv Remote Sensing

4 Credits
This course introduces the basic principles of image interpretation and analysis. Through lab and project work, students will explore a variety of data sources and examine the methodological and logistical considerations central to the acquisition and interpretation of aerial photography and digital imagery. Req., GES 2050 or consent of instructor. Meets with GES 3060 and ENSC 4060.

GES 5070 - Geovisualization

4 Credits
Students will learn the principles, concepts, methods and applications of geovisualization. Students will have hands-on experience in using highly interactive, dynamic and multidimensional geovisualization systems that offer high levels of user experience.

GES 5080 - Adv GIS for Graduate Students

4 Credits
Continued application of GIS for spatial analysis. Students will learn ESN software and complete original research projects in their field of interest. Prer., GES 4050, GES 5050 or instructor consent. Meets with GES 4080.

GES 5090 - Image Processing

4 Credits
This is a writing intensive course which provides and introduction to the advanced methods of environmental and natural resource data analysis using remotely sensed imagery. Emphasis will be placed on digital image analysis of freely available data sources. This is a project-oriented course in which students will work through the remote sensing process in entirety -- from the design of a research question to presentation of results. No previous programming experience required. Prereq., GES 4060, GES 5060, or consent of instructor. Meets with GES 4090 and ENSC 4090.

GES 5100 - Global Positioning System with GIS.

3 Credits
Explores the theory of GPS, provide practical experience using GPS units, and explore the interaction between GIS and GPS through use of ESRI, and Trimble Pathfinder software. Req., GES 2050 or consent of instructor.

GES 5120 - Internet Geographic Information Systems

4 Credits
Students will learn the fundamentals of Internet GIS technology and develop hands-on experience in programming and implementing Internet mapping applications using various tools including ESRI ArcServer, Google Maps, and JavaScript APIs. Prer., Introduction to GIS (GIS 4050/5050) or consent of instructor. Meets with GES 4120.

GES 5130 - Intro to Geospatial Computing

4 Credits
The main computational concepts and techniques relevant to geospatial applications, from basics of programming and algorithms to automating geospatial analysis tasks. The course will allow students to extend their abilities to analyze geospatial data. Prer., GES 3030 or GES 5030. Meets with GES 4130.

GES 5150 - Graduate Teaching Geography

2-4 Credits
Practicum and/or tutorial, by special arrangement only, in the teaching of geography (for example, serving as small-group leaders or proctors in introductory courses, or developing and/or testing curriculum materials). Students work closely with faculty in developing new instructional materials and interact with students using those materials. Open to graduate students only. Instructor Consent Required.

GES 5160 - Workshop in Geographic Education

0.5-4 Credits
A course outlining methods of teaching geography in K-12. Includes discussion of important geographic concepts and their integration into the classroom. Students will develop teaching activities and materials for incorporation into their curriculum. Prer., Consent of instructor.

GES 5170 - Seminar: Research Methods

2-4 Credits
Intensive work in using various forms of data and field investigation for analysis of geographic problems. Case studies and field experience. Meets with GES 4460.

GES 5220 - Synoptic Climatology

3 Credits
The physical processes involved with the development and transportation of weather systems. Selected topics include relationships between upper atmospheric flow and surface weather phenomena, synoptic evaluation of air masses and techniques for environmental analysis. Prer., GES 1000. Meets with GES 4220.

GES 5260 - Biogeography

4 Credits
An examination of the distribution of life on the Earth's surface. The relationship between environmental factors and plant and animal distributions will be the central theme. Changes in distributions through time will also be examined. Required field trip. Prer., GES 1000 or consent of instructor. Meets with GES 4260.

GES 5270 - Advanced Biogeography

4 Credits
A project-oriented class with students studying the distribution of plants as related to environmental factors. This class will combine lecture, fieldwork, and data processing, resulting in maps and reports. The geographical area of study will be changed each time. Prer., GES 4260, GES 5260 or instructor consent. Meets with GES 4270.

GES 5280 - Plant Communities of the Western United States

4 Credits
An examination of plant assemblages in the contiguous United States west of the one-hundredth meridian. The distribution of major plant species will be used to illustrate plant community interactions with environmental factors such as climate and landforms. Prer., GES4260/GEOG 5260. Meets with GES 4280.

GES 5290 - Plant Communities of Colorado

4 Credits
An examination of plant assemblages in Colorado. Major plant communities will be examined in the context of environmental factors such as climate and land forms. Required field trip. Prer., GES 4260, GES 5260 or instructor permission. Meets with GES 4290, BIOL 4290, and BIOL 5290.

GES 5310 - Principles in Geomorphology

4 Credits
Systematic study of rock weathering, mass-wasting, fluvial, glacial, and aeolian processes and the landforms resulting from these processes. Climatic geomorphology, geomorphometry, and data collection technologies (e.g., lidar) are emphasized. Field trips required. Prer., GES 1010 or GEOL 1010 or consent instructor. Meets with GES 4310, GEOL 4630, GEOL 5630.

GES 5320 - Mountain Environments Seminar

3 Credits
Same as GES 4320 but will include additional research work. Field trips optional. Prer., GES 1000 or consent of instructor. Meets with GES 4320.

GES 5340 - Seminar: Soils

4 Credits
In-depth study of techniques used in analyzing soil classification systems for global soils. Problems in human use and misuse of soils. Prer., GES 1010, GEOL 1010, or instructor consent. Chemistry recommended. Meets with GES 4340.

GES 5390 - Earth Systems Science

3 Credits
This course for middle and high school teachers will include field work, utilizing terrain and geological formations to compare and contrast earth with other planets. This course does not satisfy any requirements for the GES Master of Applied Geography Degree or the Master of Sciences. Meets with CURR 5540.

GES 5410 - Seminar in Resource Management and Conservation

3 Credits
An investigation of environmental problems with emphasis on land-planning and land use, pollution, water, energy and natural hazards. Prer., Consent of instructor. Meets with GES 4410.

GES 5420 - Conservation and United States Public Lands

3 Credits
Examines the legacy of public lands in the U.S. and whether management policies have evolved from an emphasis on resource extraction to one focused upon conservation. Topics will include national parks, forests, recreation, and wildlife conservation. Meets with GES 4420.

GES 5450 - Seminar: Analysis of Environmental Systems

3 Credits
Problems associated with development of environmental impact studies. Case examples and field work. Meets with GES 4450.

GES 5480 - Environmental Problems of Colorado

3 Credits
Specific land and resource use problems in Colorado. In-depth analysis of interacting systems of natural resources and human decision-making processes. Meets with GES 4480.

GES 5500 - Topics in Water Resource Management

3 Credits
Experience of water resource management in the United States, prospects for the future

and problem solving techniques. Critical analysis of issues important in the western United States. Meets with GES 4500.

GES 5510 - Hydrology

3 Credits
Exploration of the principles of hydrology and their applications to environmental investigations. Meets with GES 4510.

GES 5550 - Disasters and Society

3 Credits
The impact of extreme geophysical events on human society. Emphasis upon adaptations to extreme events and ways of reducing vulnerability and damage. Meets with GES 4550.

GES 5560 - Cultural and Political Ecology

3 Credits
Considers how ecological conditions and socio-political systems are inherently linked. Major topics include environmental narratives, energy development, the role of technology in society, and sustainable development across a range of geographical contexts. Meets with GES 4560.

GES 5570 - Military Geographies

3 Credits
Considers how military activities shape and influence diverse landscapes. Extending from traditional strategic considerations of geography, the course takes a critical look at militarism at home and abroad, and during times of war and peace, and the changing role of sustainability in militarization. Meets with GES 4570.

GES 5600 - The Cultural Landscape

3 Credits
Students will learn to interpret the American cultural landscape, particularly everyday surroundings that they frequently take for granted. You will see clues about our culture and society from modifications to the natural terrain, including the cities in which we live. Meets with GES 4600.

GES 5610 - Urban Geography

3 Credits
Course addresses topics in urban location, urban morphology and design, urban function, and urban social issues. We analyze why cities look as they do and the role cities play in society. Emphasis is on cities in the United States. Meets with GES 3610.

GES 5640 - Mega-Cities

3 Credits
This seminar provides a global perspective on the nature of urbanization, the forces behind these patterns, and resulting effects on social, political, economic, and environmental organization and governance of the world's largest mega-cities (cities with a total population of 10 million+ people).

GES 5650 - Restoration Geographies

4 Credits
Examines landscapes of restoration and their environmental, economic, ethical, and practical implications in order to develop a robust understanding of restoration, its relationship to geography, and how it takes place across a region. Meets with GES 4650.

GES 5660 - Urban Ecology

3 Credits
This course explores the human-environment interactions within urban settings. Special consideration is given to measuring patterns of change, and to social and ecological feedbacks in urbanized lands. This is a field-based course which involves collecting and analyzing primary data. Meets with GES 4660.

GES 5680 - Inequality USA

4 Credits
This course identifies how inequality is defined, measured, studied, and understood by geographers. Students will analyze quantitative and qualitative data sources to explain inequality in the U.S., and will conduct research identifying spaces of inequality in Colorado Springs. Meets with GES 4680, WEST 4680, SOC 4680, and SOC 5680.

GES 5730 - Population Geography

3 Credits
This course examines international population processes and patterns. First, past, present, and future dynamics of population growth are investigated. Second, varying perspectives on "overpopulation" (neo-Malthusian, cornucopian, distributionist) are discussed. Third, we show how in-depth case studies of the population geography of particular places and spaces shape the world around us. Meets with GES 3730.

GES 5750 - Seminar: Recreation Geography

3 Credits
Examines the historical geographies of recreation and tourism, and the environmental and cultural impacts of the ski industry in Colorado, international ecotourism, and contemporary trends of recreational values and activities. Meets with GES 4750.

GES 5770 - History and Nature of Geography

3 Credits
A history of geographical ideas from Greek classical efforts through the 19th century. Meets with GES 4770.

GES 5780 - Global Migration

3 Credits
Provides a global perspective on the nature of migration, the forces behind these patterns, and their effects in sending and receiving societies. Students will delve into several literatures, lead weekly sessions, and introduce perspectives on international migration. Meets with GES 4780.

GES 5920 - Geography of Food

3 Credits
Addresses four geographical topics of food: 1) The political economy of food production; 2) food production and the environment; 3) food and cultures; and, 4) food and nutrition. Students will better appreciate our complex relationship with food. Meets with GES 3920.

GES 6020 - Data Processing in Earth Science

4 Credits
Advanced data processing using digital image models and Geographic Information Systems. Students will be responsible for extensive individual project design and completion. Prer., GES 5170 or GES 4090/GES 5090.

GES 7000 - Master's Thesis

1-6 Credits
Master's Thesis. Instructor Consent Required.

GES 9400 - Independent Study in Geography

1-4 Credits
Independent work for undergraduates. By special arrangement with faculty only. Only for students presenting strong geography preparation. Instructor Consent Required.

GES 9500 - Independent Study in Geography-Graduate

1-4 Credits
Independent work for graduate students. By special arrangement with faculty only. Prer., Consent of instructor.

GES 9600 - Independent Study in Geography - Graduate

1-4 Credits
Independent work for graduate students. By special arrangement with faculty only. Prer., Instructor Consent Required.

GES 9990 - Candidate for Degree

0 Credits
Candidate for Degree. Instructor Consent Required.

GPS - Gateway Program Seminar

GPS 1010 - Gateway Program Seminar

3 Credits
A required 3-credit course designed to introduce students to general education - the Compass Curriculum - at UCCS. Students refine their skills in speaking, critical thinking, writing, academic professionalism, and information literacy. Students also examine a topic based on the fundamentals of various disciplines, and work closely with faculty and peers. The course emphasizes faculty coaching, collaborative learning, and campus resources through a variety of assignments. As students pursue a topic, they will be introduced to a wide range of disciplines and campus resources that can make them more successful in their academic work. Topic groups break into sections of 15 students. Students must attend "Start Up Days," which are scheduled two days prior to the start of the fall semester. Approved for Compass Curriculum requirement: Gateway Experience.

GPS 1110 - Academic Fitness

1-3 Credits
In this course, students will study goal-setting, time management, note-taking, test-taking, critical thinking, and oral and written communication. They will develop academic success strategies and apply them to this course and other courses. This course is open to any students interested in achieving their academic best.

GPS 3010 - Transition Seminar

3 Credits
Specifically designed for first-semester transfer students, this course helps students integrate into the UCCS campus community; refine speaking, writing, and technology skills through project-based learning; cultivate critical research competence; and explore academic and career options. Each semester, a topic is investigated according to three broad academic perspectives. Not open to students who have taken ID 1010 or GPS 1010. Approved for Compass Curriculum requirement: Gateway Experience.

GPS 4090 - Peer Mentors for the Gateway Program Seminar

3 Credits
This course examines the complementary processes of teaching and learning from both theoretical and pragmatic perspectives. Students will study learning styles, develop coaching and mentoring skills, and work with first-year students under the guidance of faculty sponsors. Prer., Instructor consent.

GRK - Greek

GRK 1010 - Beginning Classical Greek I

4 Credits
An introduction to classical Attic Greek for students with no previous knowledge of Greek. Readings are in all the major genres of classical Greek literature. Acquisition of the fundamentals of grammar, vocabulary, syntax and morphology will be emphasized as a means to understanding Greek thought and culture. The cultural-historical component includes the Persian and Peloponnesian Wars, Pericles, triremes, religion, and the plague. English grammar knowledge and vocabulary will increase appreciably.

GRK 1020 - Beginning Classical Greek II

4 Credits
Course is designed to continue the grammatical, morphological and vocabulary work initiated in GRK 1010. Students will read selections from Aristophanes' "Clouds" and Plato's "Apology" to compare characterizations of Socrates. Cultural-historical readings concentrate on sophism, Thales, Socrates, and the Delphic oracle. Completion of this course meets the ancient language requirement for a Classics minor and the prerequisite for studying the Septuagint (Old Testament) and New Testament in Koine Greek. Prer., GRK 1010.

GRK 1100 - Beginning Koine Greek I

4 Credits
An introduction to Koine Greek for those with no previous knowledge of ancient Greek. The focus is on the fundamentals of grammar, morphology, syntax, and vocabulary with exercises that include Septuagint and New Testament passages.

GRK 1200 - Beginning Koine Greek II

4 Credits
A continuation of Beginning Koine Greek I in which the fundamentals of grammar, morphology, syntax, and 75% of the New Testament vocabulary is completed. Beginning Koine Greek I and II meet the language requirement for the Classics minor. Prer., GRK 1100.

GRK 3010 - Intermediate Classical Greek I

3 Credits
Readings will include selections from Aristophanes' Birds, Wasps, Lysistrata, the Akharnians, and the beginning of Demosthenes' prosecution of Neaira. More complex grammar and morphology concepts are presented and reviews incorporated. Historical-cultural readings focus on Kleon, the court system, the state and religion. Prer., GRK 1020.

GRK 3020 - Intermediate Classical Greek II

3 Credits
Students complete advanced grammar and syntax concepts while reinforcing previous lessons. Readings include selections from Demosthenes, Eurypides, Plato (from Phaidros and Protagoras), and Herdotus' Histories. The cultural-historical foci are citizenship, women's lives, revenge, purification, and tragic vision. Completion of this course meets the prerequisite for any further Greek literature courses. Prer., GRK 3010 or equivalent.

GRK 9400 - Independent Study in Greek - Undergraduate

1-4 Credits
Independent work for undergraduates only.

Only for students presenting strong Greek preparation. May be repeated up to three times for credit. Prer., Consent of instructor required.

GRNT - Gerontology

GRNT 2001 - Integrative Concepts in Aging

3 Credits
Integrative Concepts in Aging provides a critical conversation model and multidisciplinary approach of aging in our society. Each semester will provide a uniquely different opportunity in understanding how aging impacts people and our society through one specific perspective.

GRNT 2040 - Biomedical Aspects of Aging

3 Credits
A comprehensive study of the normal and pathological aspects of the aging process in human beings. The course treats cellular through organ system function, examining causes and changes related to aging. Immunity, nutrition and biopsychological factors are studied. The course also examines the concept of wellness as it applies to aging. Meets with HSCI 2800.

GRNT 2300 - Transitions in Adulthood: Lifecourse Perspectives

3 Credits
The aging of society shapes many aspects of the social fabric. This course examines the impact of demographic changes on individuals, families, communities, and countries. Multiple perspectives show impact on aging persons, other generations, institutions, social policy, and economics. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Meets with SOC 2300.

GRNT 3000 - Introduction to Gerontology

3 Credits
A comprehensive introduction to the experience of aging, including an overview of the biological, psychological, and social aging of individuals as well as the issues that confront us as an aging society. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

GRNT 3560 - Women and Aging International: Diversity, Challenges, and Contributions

3 Credits
Overview of diversity in the aging experience for women throughout the major regions of the world: Americas, Africa, Middle East, Asia, and Europe. Explores current, historical, social, economic, legal, and health realities of older women with emphasis on cultural roles and expectations. Approved for LAS Global Awareness requirement. Meets with WEST 3560 and PSY 3560.

GRNT 3900 - Special Topics in Gerontology

1-6 Credits
A detailed examination of a special topic taken from any field of gerontology that is not covered by the regular Gerontology course offerings. Repeatable for up to 6 credits as long as the topics are different.

GRNT 4620 - Sociology of Aging

3 Credits
Examination of the aging process in American society. Focus is on development from late adolescence through old age and death. Meets with SOC 4620.

GRNT 4630 - Psychology of Aging

3 Credits
An overview of geropsychology covering such topics as the aging central nervous system, cultural contexts of aging, personal transitions in later life, mental disorders, and geropsychology in the future. Prer., PSY 1000. Meets with PSY 3510.

GRNT 4980 - Professional Field Experience in Gerontology

1-6 Credits
Designed learning experiences involving application of specific, relevant concepts and skills in supervised gerontology-related employment situations. (Pass/Fail grading only.) Prer., GRNT 3000 and consent of instructor. Sign up for no more than 3 credits per semester.

GRNT 9400 - Independent Study in Gerontology: Undergraduate

1-6 Credits
Hours and credits to be arranged. Prer., Consent of instructor required.

HCAD - Health Care Administration

HCAD 6190 - Health Care Administration

3 Credits
Examines the social, political, and economic influences on health care administrators in the health care system. Analyzes leadership management and organizational theories, human resource management, strategic management, and professional development issues. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

HCAD 6290 - Health Care Policy

3 Credits
Focuses on the knowledge and skills needed to effect change in health care policy and delivery. Explores the health care system, focusing on financing, delivery, and reimbursement models, regulatory issues, and the legal/ethical parameters. Emphasis is placed on empowerment and the development of leadership skills within the social/political context of health care. Building collaborative interactions within systems is stressed as the policy-making process is studied. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

HCAD 6390 - Health Care Ethics and Law

3 Credits
A theoretical basis for ethical/legal decision making as applied to contemporary situations encountered in health care settings. Online graduate course. Tuition schedule differs from on-campus courses. Graduate students only.

HCAD 6490 - Health Care Budget and Finance

3 Credits
Introduces systems of resource management in health care delivery. Emphasis on strategies of finance and budget, personnel management, management research, and information systems as tools used by health care administrators to impact the health care environment. Individual, societal, and political influences which may alter the process of management will be examined. It is recommended that FNCE 6090 be completed prior to taking this class. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

HIST - History

HIST 1010 - The Ancient World

3 Credits
A survey of major political, economic, religious, and social themes of the ancient world, from the beginnings of civilization in the Near East to the end of the Roman empire in the West. Students will read a selection of original sources.

HIST 1020 - Medieval World

3 Credits
A survey of major political, economic, religious and social developments in Europe from the end of the Roman Empire to 1500. This also includes a brief examination of the rise of Islam and the survival of Byzantium. Students will read a selection of original sources. GT-HI1.

HIST 1030 -Rise of Modern Europe, 1500-1815

3 Credits
A survey of major political, economic, social, and cultural developments from the Reformation through the era of the French revolution. Students will read a selection of original sources. GT-HI1.

HIST 1040 - Modern Europe, 1815-Present

3 Credits
A survey of major political, economic, social, and cultural developments from the fall of Napoleon until today. Students will read a selection of original sources. GT-HI1.

HIST 1110 - Asian History: Southeast Asia

3 Credits
A survey of Southeast Asian society, culture, politics and economy, from early Southeast Asian civilizations to the present. Approved for Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1120 - Asian History: Indian Subcontinent

3 Credits
Survey of South Asian society, culture, politics and economy, from the birth of Indian civilization to the present. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1130 - Asian History: China

3 Credits
The evolution of Chinese society, economy, culture and political systems from the birth of Chinese civilization to the present. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1135 - Contemporary China

3 Credits
Surveys contemporary China from 1949 to the present. Covers major dimensions of People's Republic of China including its politics, diplomacy, military, social policies, economy, ethnicity, ideology, culture, and art. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures.

HIST 1140 - Asian History: Japan

3 Credits
A survey of Japanese society, culture, politics and economy, from the birth of Japanese civilization to the present. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1210 - History of the Middle East

3 Credits
A survey course covering the history of the Middle East. Special attention will be given to the birth of Islam; the Ottoman empire; European imperialism; the birth of Israel; the Six-Day War; the Camp David accords; the tragedy of Lebanon; the Iranian revolution; the Gulf War; and steps for peace.

HIST 1400 - Latin America to 1810

3 Credits
Survey of the political, social and economic development of Latin America from pre-Columbian beginnings to 1810. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures; Writing Intensive. GT-HI1.

HIST 1410 - Latin America Since 1810

3 Credits
Survey of the political, social, and economic development of Latin America since 1810. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures; Writing Intensive. GT-HI1.

HIST 1510 - U.S.: Birth of a Nation, 1607-1789

3 Credits
Survey of the development of the U.S. from the colonial period through the ratification of the Constitution, with emphasis on causes, events, and results of the American Revolution. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1520 - U.S.: Expansion and Division, 1789-1877

3 Credits
Survey of the major issues related to interpretation of the Jeffersonian and Jacksonian eras with emphasis on the challenges derived from westward expansion and the social, economic, and political factors contributing to disunion and civil war. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-HI1.

HIST 1530 - U.S.: Emergence of Modern America, 1865-1920

3 Credits
Survey of the economic, social and political development of industrial America from the reconstruction through World War I. GT-HI1.

HIST 1540 - U.S.: Recent America, 1918-Present

3 Credits
Survey of America's social, political, economic and cultural history during the time the U.S. has been a world power. The roots of contemporary society, with emphasis on the emergence of a multicultural America. Approved for LAS Humanities Area requirement. Approved for Compass Curriculum requirements: Inclusiveness; Explore: Arts, Humanities and Culture. GT-HI1.

HIST 1600 - Making of Modern Middle East I

3 Credits
Survey of the political, social, economic, and intellectual currents in the Middle East from

610 C.E. until World War I. Approved for LAS Humanities and Global Awareness requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures; Writing Intensive.

HIST 1610 - Making of Modern Middle East II

3 Credits
Survey of the political, social, economic, and intellectual currents in the Middle East from World War II until the present. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures.

HIST 3000 - Special Topics

3 Credits
These courses are usually taught on a one-time basis. The subject matter will change from year to year and will cover an important but rarely taught subject in history.

HIST 3001 - The Historian's Craft: Introduction to the Discipline of History

3 Credits
This course introduces undergraduate history majors to the basic methods and skills that historians use to study and write about the past. Introduction to historiography familiarizes students with concepts explored more deeply in Theories and Methods and Senior Thesis courses.

HIST 3010 - Women in Classical Antiquity

3 Credits
Analysis of the philosophical views of women and by women in ancient Greek, Roman and Egyptian thought. Meets with PHIL 3140 and WEST 3140. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 3040 - Sex, Marriage, Death in Pre-Industrial Europe

3 Credits
Examines the life cycles of Europeans in the pre-industrial period (before c. 1750) through analysis of the theory and practice of procreation, child-rearing, marriage, and death. Approved for Compass Curriculum requirement: Navigate.

HIST 3050 - Guided Archival Research of UCCS

3 Credits
This course synthesizes theoretical and guided practical training in archival research and preservation methodologies and their relation to history as a field of study. UCCS collections are the laboratory in which students participate in compiling and conserving UCCS history. Prer., Junior/senior only.

HIST 3080 - Maps as Historical Documents

3 Credits
Students are introduced to methods of selecting, interpreting, and using historical maps as source documents, complementing written texts. Explores themes in history of cartography and spatial history, how patterns of historical-geographic change are revealed in traditional and digital maps. Meets with GES 3080.

HIST 3120 - The Panorama of World Civilizations to 1500

3 Credits
Explores the development and global interactions of cultures, particularly: West Africa, Europe, indigenous (First Nations) Americas, subcontinent Asia, East Africa, and the Middle East. Emphasizes the "core values" of selected traditions surviving and persisting in contemporary times. Approved for LAS Global Awareness Area Requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 3130 - Traditions and Transformations: China to 1800

3 Credits
Surveys traditional China from the beginning of the civilization to 1800. Examines dynastic transitions, politics, cultural innovations, ideological debates, religions, economy, gender, and ethnicity. Reading and writing intensive.

HIST 3150 - Mesopotamian History

3 Credits
Emergence, development and decline of Mesopotamian civilizations from the early 3rd to the late 1st Millenium B.C.E. While students will concentrate on Sumerian and Akkadian history, they will gain a broad understanding of the development of Amorite, Kassite, Hurrian, Assyrian, Chaldaean and Babylonian culture as well.

HIST 3160 - History of Ancient Egypt

3 Credits
Emergence, development and decline of Egyptian civilization from the late 4th to the late 1st Millenium B.C.E. While students will concentrate on the three Kingdoms, special attention will also be given to the role of the Intermediate Periods in the transformation of Egyptian culture during the Hellenistic and Roman periods as well. Approved for Compass Curriculum requirement: Writing Intensive.

HIST 3170 - History of Ancient Greece

3 Credits
History of ancient Greece from its emergence in the 2nd Millenium B.C. through the Archaic, Colonial, Classical and Hellenistic periods. The socio-political history of each period will be broadly analyzed to develop a balanced understanding of the interaction of such dynamic cultural influences as politics, religion, literature, and art.

HIST 3180 - History of Ancient Rome

3 Credits
The emergence, development, and decline of the Roman civilization from the 2nd Millenium B.C.E. to the rise of Constantine in the 4th Century C.E.

HIST 3190 -Rise & Fall of Athenian Democracy

3 Credits
Development and decline of Athenian democracy from the early 6th to the late 4th century B.C.E. While students will trace the evolution of the Delian League from its origins through the emergence of the Athenian Empire, defeat in the Peloponnesian War and absorption by the Hellenistic Empire, special attention will be given to the development of the Athenian constitution and the principal socio-political institutions.

HIST 3200 - The Crusades

3 Credits
Emergence, development and transformation of the Crusade movement from 1095 C.E. through the later Middle Ages. Special attention will be given to the first four Crusades, but students will also analyze primary and secondary sources on the expansion of crusading throughout the 13th century and the Eastern Crusades of the 14th-16th centuries.

HIST 3220 - Genocide: The Case of the Nazis and Jews

3 Credits
A comparative study of the Nazi Holocaust and other genocides. Several approaches to understanding and an explanation of genocidal violence will be used, including sources from disciplines apart from history. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 3230 - Fascism and the Holocaust

3 Credits
An analysis of Nazi Germany's policy of genocide against the Jews in the context of European fascism of the 1920s, 1930s, and 1940s.

HIST 3250 - Germans and the Holocaust

3 Credits
An analysis of Germans and the Holocaust from several perspectives: the development of German anti-Semitism; the identity of German Jews; genocide as perpetrated by the Third Reich; subsequent efforts of atonement, commemoration.

HIST 3350 - Germany, 1763 to 1866

3 Credits
An examination of major developments of German politics, society, economic life and culture from the end of the Seven Years War to the Austro-Prussian War. Special attention to nationalism and the emergence of national literature.

HIST 3360 - Germany Since 1866

3 Credits
An examination of major developments of German politics, society, economic life and culture from the end the Austro-Prussian War to today. Inclusion of some German literature.

HIST 3370 - Hitler and German National Socialism

3 Credits
An examination of the Nazi leader in terms of the historical situation in which he attained power, his historical significance generally, and his responsibility along with that of others for the policies of genocide.

HIST 3380 - Germany Since 1945

3 Credits
An analysis of German politics, economics, society, and culture since the end of World War II.

HIST 3400 - Mass Violence and Political Oppression: Story, History, Imagery

3 Credits
20th century war, genocide, and oppression as represented by certain forms of art: film, literature, photography, visual arts. The issue is the distinctive contribution of artistic treatment to historical understanding.

HIST 3420 - Medieval England

3 Credits
A survey of the early formation of the English nation, from the coming of the Anglo-Saxons to c. 1500. The focus will be on major economic, political and religious trends as seen through a variety of original sources.

HIST 3440 - Tudor-Stuart England

3 Credits
Traces the creation and maintenance of the Tudor state in the 16th century and its dismantlement during the revolutions of the 17th century. The emphasis will be on political, social, and economic structures as seen through a variety of original sources.

HIST 3460 - Early Modern England

3 Credits
Survey of early modern English history from 1688 to 1830 with an emphasis on political and economic developments and their impact on social structure.

HIST 3480 - Ideas, Identities, and Indiscretions: Transformations in Early Modern Europe (1400-1800 C.E.)

3 Credits
This course investigates early modern Europe in the context of scientific and religious changes and the development of new social identities (1400-1800 C.E.). Approved for Compass Curriculum requirements: Navigate; Writing Intensive.

HIST 3490 - History of Ireland

3 Credits
Traces developments in Irish history since the 1100s, the century in which Ireland's stormy relationship with Great Britain began. Special emphasis will be placed upon that relationship, but the course will also examine the various social groups that comprised Irish society and their relationships with each other. Irish culture in its many facets will be examined through the study of various works of literature interspersed throughout the course.

HIST 3510 - Chicano History Since 1910

3 Credits
A broad sketch of Chicano history since 1910. This course integrates events, ideas, and personalities from both sides of the border to illuminate the evolution of Spanish-speaking people of the American Southwest. Approved for LAS Cultural Diversity requirement. Meets with WEST 3510.

HIST 3520 - History of Latinos in the U.S.

3 Credits
Course covers the history of U.S. Latino communities and Latin American immigrants to the U.S. from the 1820s to the present. Approved for LAS Cultural Diversity requirement. Meets with WEST 3520.

HIST 3550 - Religion and American Culture, 1500 to 2000

3 Credits
Historical analysis using primary and secondary texts of the religious culture of America from pre-Columbian era to the present. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 3560 - Modern Mexico

3 Credits
Explores the major trends of modern Mexican history, focusing on the Mexican Revolution, struggles to realize the "promises" of the revolution, crises of debt and destabilization, and the effects of NAFTA and the Zapatista uprising of the 1990s. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 3570 - The City in Latin America

3 Credits
This course explores the deeply rooted urban-rural divide in modern Latin America, from a historical perspective organized about core city-centered theories and specific city case

studies. Students will also learn about the current impact of globalization on cities and their residents.

HIST 3580 - Immigrant Histories

3 Credits
The history of immigrants/migrants from Latin America, Africa, the Middle East, and Europe as of 1840 to the present will be examined. Emphasis will be placed on U.S. immigration laws, the development of ethnic-based communities and connections to U.S. policy. Approved for LAS Cultural Diversity requirement. Meets with WEST 3580.

HIST 3590 - Lat American History Through Film

3 Credits
Exploration of major themes in the history of Latin America such as conquest, colonialism, cultural clashes, revolution, and nationalism through the use of films and texts. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 3600 - The 1960s

3 Credits
Examines the social, political and cultural changes arising in the turbulent years of the 1960s. Special attention will be given to the Civil Rights Movement, the domestic aspects of the Vietnam War, and challenges to traditional culture and values.

HIST 3650 - Economic History of the U.S.

3 Credits
American economic organization and institutions and their development from colonial times to the present. Prer., ECON 2020 or permission of instructor. Meets with ECON 3500.

HIST 3680 - Islam and the West: Contacts, Representations, and Approaches

3 Credits
Examines how the history of contacts produced and affected contemporary understanding of Islam and the West. Considers cultural, trade, and diplomatic contact in different historical periods, and the way that contact is negotiated through gender, race, class, and religion. Approved for Global Awareness Requirement. Meets with WEST 3680.

HIST 3700 - Colonial America, 1607-1763

3 Credits
This seminar examines the colonization of North America between 1607 and 1763, exploring how and why an often fractious group of colonies came together to oppose the political and legal institutions that ruled the lives of Europeans and indigenous populations.

HIST 3710 - Good Wives and Nasty Wenches: American Women's History, 1607-1877

3 Credits
A survey of the history of American women from the Colonial era through the Civil War, concentrating on the nineteenth century. It will introduce students to the changing economic, gender, and familial roles of American women. Meets with WEST 3710.

HIST 3720 - From Slavery to Freedom: Slavery and the Afr-Amer Experience in Colonial and Antebellum America

3 Credits
Introduces students to the major political, social and cultural developments in the history of African Americans from 1619 through Reconstruction. Meets with WEST 3720. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 3730 - Vision and History in Native-American and African-American Narratives

3 Credits
Reading and analyzing varied examples of academic disciplines and genres of writing to comprehend how cultural relations in North America & the western hemisphere impact indigenous, African-American, and multicultural peoples, ca. 1700 to the present. Prer., 10 works ([historical] monograph, autobiography, biography, political science, anthropology, survey texts containing primary documents & other primary sources). Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 3740 - African-American Social and Political Thought, 1790-1980

3 Credits
Surveys the historical basis of socio-political thought in North America's diasporic (African-American) communities. Meets with WEST 3740.

HIST 3750 - Orphans, Paupers, and Other Vagabonds: Poor Relief in the U.S., 1607-1937

3 Credits
Examination of the history of the American Welfare System, from its roots in English Poor Laws to the establishment of the current system in the 1930s, and the implications for future generations. Special attention paid to children's and women's experiences.

HIST 3760 - Bombs, Bullets, and Brotherhood: History of American Labor

3 Credits
American history is labor history. The emergence and growth of capitalism involved social, cultural, political, and economics processes that often resulted in conflict and violence as notions of race, ethnicity, gender, and citizenship changed the nature and meaning of work.

HIST 3860 - Popular Culture in 20th Century America

3 Credits
How do Americans live, relax, and entertain themselves? The answer involves high culture but also popular culture. Over the course of the century, pop culture forces such as the rise of the auto, advertising, the sexual revolution, radio, TV, movies and music from jazz to rock have transformed modern American civilization.

HIST 3880 - History of American Education

3 Credits
An examination of the critical developments taking place in the history of American education. The background of pressing issues and challenges facing modern education are covered along with examples of how education has been used to improve human conditions.

HIST 3890 - History of Colonial India

3 Credits
A history of India that details the colonization of South Asia. Topics of special attention are British imperialism, rebellions against British control, and the Indian struggle for freedom and independence.

HIST 3920 - History of the British Empire

3 Credits
A seminar tracing the evolution of the British Empire from its American roots, through its 19th century apex in Asia, Africa, and the West Indies, to its dissolution in the late 20th century.

HIST 3950 - Environmental History: The West and the World

3 Credits
A seminar dealing with global environmental history, with particular emphasis being given to the environmental history of the American West.

HIST 3980 - The Vietnam War Through Film

3 Credits
A survey of the war in Southeast Asia through the eyes of Hollywood. Major periods include France's war with Vietnam, early American involvement, the war through Asian eyes (as portrayed in Hollywood), the soldiers' war back home, and the fall of Vietnam.

HIST 3990 - European Film - European History

3 Credits
The study of European film in conjunction with major developments in 20th century European society, including war, genocide, and dictatorship. Focus is on both historical commentary and film form. Meets with FILM 3990.

HIST 3995 - Undergrad Internship in History

3 Credits
Students will be involved in community and organizational settings where they will gain practical work and networking experience. They will apply critical analysis as well as historical research methods to their sites for their academic component. Prer., Junior or Senior standing, consent of instructor required.

HIST 4030 - The Ottoman Empire, 1400-1800

3 Credits
First course in a two-semester sequence on the Ottoman Empire. Discusses the foundation of the Ottoman state in its regional context, administration, social and cultural life, and gender relations. Themes include the empire's multi-ethnic and cultural nature, cultural sophistication, and its developing relations with Western Europe.

HIST 4040 - Reconsidering the Late Ottoman Empire and Early Turkish Republic, 1800-1938

3 Credits
Second course in a two-semester sequence on the Ottoman Empire. Examines the dynamics that shaped the late Ottoman Empire and the early Turkish Republic. Considers the aftermath of World War I, and the idea of historical ruptures and continuities through the lens of education, gender, history, and taste.

HIST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident

3 Credits
Examines the connection between the harem and war zone by examining Ottoman, Egyptian, American, and British 19th and 20th century travel accounts, blogs, memoirs, and novels. Considers the ways in which these two zones differ or overlap over time and place, exploring the historical realities of colonialism, empire, nationalism, and modernity. Central themes include the imaginary, feminism, identity, dislocation, war, and urban encounters. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Writing Intensive. Meets with WEST 4050.

HIST 4060 - Middle East Women in Film

3 Credits
Focuses on the historical dimension of gendered society (family, personal status, war, feminism, and colonialism) in the Middle East and the ways that transnational filmmakers navigate and narrate various issues through feature film and documentary forms. Approved for LAS Global Awareness requirement. Meets with WEST 4060.

HIST 4110 - Early Medieval Europe

3 Credits
Scope of course: 3rd century through 10th century. Themes covered will be Christianization of the Roman Empire, the transformation of the Western Empire into European feudal kingdoms, and the survival of the Eastern Empire. Approved for Compass Curriculum requirement: Writing Intensive.

HIST 4120 - The Twelfth Century Renaissance

3 Credits
Scope of the course: 11th century through the 13th century. Themes covered will be political, social, religious, and economic developments that shaped Medieval Europe into a unique civilization.

HIST 4130 - Baghdad to Burgos: Jews, Christians, & Muslims in the Medieval Mediterranean World (600-1500 C.E.)

3 Credits
This course on inter-cultural relations explores the interaction of Jewish, Islamic, and Christian communities during the medieval period (600-1500 C.E.). It investigates Egypt, Iberia and North Africa, the Holy Land and Byzantium, Sicily and the central Mediterranean, and Constantinople/Ottoman Turkey. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Navigate; Writing Intensive.

HIST 4140 - Women in Medieval Europe

3 Credits
This course explores the realities, expectations, and representations of women in medieval Europe (ca. 500-1500 CE) and helps prepare students for senior thesis through the analysis of primary source readings. Continues sequence beginning with HIST 3010, Women in Classical Antiquity. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 4150 - Astrolabes, Arms, & Azulejos (Tiles): Medieval Science, Technology, & Material Culture (600-1500 C.E.)

3 Credits
This course investigates the scientific, technological, and the material cultural developments that were made possible by Christian and Islamic competition and cooperation during the Middle Ages (600-1500 C.E.). Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 4160 - A Crossroads of Civilizations: Medieval Spain and North Africa (600-1500 C.E.)

3 Credits
This course on medieval Spain and North Africa explores the historical interaction of Jewish, Islamic, and Christian communities. In particular, it evaluates the cultural, religious, political, and economic relations of the three cultures from 600 to 1500 C.E. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 4170 - The Greek Historians

3 Credits
A study of Greek historiography through the works of select primary sources. Special emphasis is given to authorial intention, audience

reception and the influence of the ethnographic, epigraphic and poetic traditions on the development of the genre of Ancient History.

HIST 4210 - History of Christianity: Primitive Church to circa 300

3 Credits
An exploration of primitive Christianity through its immediate Judaic and Hellenistic roots, to include extended historical and literary discussion of the literature of the New Testament and an analysis of the historical Jesus.

HIST 4220 - History of Christianity: circa 300 to circa 1500

3 Credits
A history of the Christian church in the West from its acceptance as a legal religion in the 4th century to the eve of its breakup at the Reformation. The focus is especially on theological, organizational, and heretical developments.

HIST 4230 - Renaissance/Late Middle Ages

3 Credits
A survey of the major political, economic, and social developments in Western Europe from the early 14th through the early 16th century. Included will be the expansion of Europe, notably of Spain and Portugal.

HIST 4240 - The Reformation and Counter-Reformation

3 Credits
A survey of Europe from the early 16th century through the mid-17th century from Martin Luther through the Thirty Years War. Emphasis will be given to religious themes and their relation to politics, economics and society.

HIST 4250 - Empires in World History: The Last Six Centuries

3 Credits
Empires since the 15th century. Examination of their rise and expansion, decline and fall. Some consideration of future prospects.

HIST 4260 - Europe in the Age of Enlightenment

3 Credits
An examination of society, government, and culture in the 18th century, with special emphasis on enlightened views of religion and the world outside Europe.

HIST 4270 - Liberty and Empire: Europe in the 19th Century

3 Credits
An advanced survey of 19th century European history, with primary themes of liberty and pursuit of empire. Covers revolutions of the period and disputes over liberty's meaning, e.g., feminism and communism. Some attention to science and philosophy. The development of strong nation-states with a trend toward imperialism is traced.

HIST 4280 - Beyond the Pillars of Hercules: The Trans-Atlantic Empires of Spain and Portugal (1450-1750 C.E.)

3 Credits
This course will investigate the Spanish and Portuguese kingdoms' earliest encounters with the New World, Africa, and Asia, the formation of colonial settlements and governments, and the bi-directional flow of people and goods (1450-1750 C.E.). Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Navigate; Writing Intensive.

HIST 4290 - Europe and the World: 1492-1750

3 Credits
Europe's relations with major portions of the world with focus on factors that contributed to Europe's dominance over much of the world before the Age of Imperialism.

HIST 4330 - Literature of Oppression in the Modern World

3 Credits
This course examines superordinate and subordinate relations in the 19th and 20th centuries. This is a topical course that will cover issues such as the Holocaust and British Imperialism, as well as dictatorship and fascism.

HIST 4390 - The First World War

3 Credits
Study of the First World War in military aspects and in the context of political and social change in the states affected by the war. Special attention is given to changes in gender relations. The stimulus to nationalism will be considered. Some examples of artistic treatment of the war.

HIST 4490 - Europe Between the World Wars

3 Credits
An analysis of the major trends and developments of European politics, society, economics, and culture between the world wars.

HIST 4500 - World War Two: A Global History

3 Credits
Close examination of the causes, effects, and consequences of the worldwide conflict of World War II from 1932-1948. A global survey of what has been called the "biggest event in world history." Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 4510 - The American Revolution: The Forging of the Union, 1763-1789

3 Credits
A comprehensive survey of the social, political, economic and intellectual transformations in America during the revolutionary era. The focus will be on the causes of the war, the war itself, the consequences of independence, and the ratification of the constitution.

HIST 4520 - The Last Great Necessity: Cemeteries and Memory in American History

3 Credits
Cemeteries are collective representations of shared beliefs and attitudes, and are evidence of how and why such attitudes change over time. This course examines U.S. history through the study of cemeteries.

HIST 4530 - Civil War and Reconstruction, 1850 - 1877

3 Credits
Intensive study of the causes and consequences of the Civil War, and the struggle over reconstruction. Course focuses on the period 1850 - 1877. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 4540 - American Religious Cultures, 1945-2000

3 Credits
Intensive research seminar focusing on primary texts of recent American religions from Cold War Protestantism to New Age Buddhism.

HIST 4570 - War and Society: 20th Century United States

3 Credits
Examination of the social, economic, political, and cultural impact of wars on American society in the 20th century. Emphasis on World War I, World War II, the Korean War, and the Vietnam War.

HIST 4580 - The American West

3 Credits
A continuation of the study of the westward movement extended to the region beyond the Mississippi, beginning with the Spanish exploration and continuing through the end of the 19th century. Emphasis on the association of Western interests with those of a rapidly developing industrial society in the east.

HIST 4690 - Colorado History

3 Credits
A history of Colorado from prehistoric Indians to nuclear projects. Topics covered will include exploration and conquest, the mountain men, settlement and pioneer life, Indians, mining, economic and political developments, exploitation and preservation of the environment, and recent trends.

HIST 4700 - Creators of Mathematics: A Historical View

3 Credits
An introduction to the history of mathematics and its creators. Traces the lives and works of the greatest mathematicians of all time. Explores birth and discovery of new ideas. Designed for math, math education, and history majors but may also be a valuable experience for science and art majors. Prer., ID 1050. Meets with ID 4450 and I D 5450.

HIST 4710 - Asian American History

3 Credits
Course will trace the social, political, economic, and cultural history of Asian Americans from the early settlements of the 19th century to the present. Meets with WEST 4710.

HIST 4720 - American Policy in the Pacific

3 Credits
Traces the historical origins of U.S. diplomatic, political, and fiscal relationships in Asia. Topics include the early "China trade," the "Opening of Japan," and aspects of American imperialism in East and Southeast Asia. Views U.S. foreign policy with an eye toward congressional and presidential decisions which resulted in American participation in three major wars in the Asian region.

HIST 4730 - Early China

3 Credits
A history of China from archaeological origins through the Imperial Ages, the Mongol years to the final dynastic era - the Qing. Special attention focuses on early philosophic ideals, aspects of unity and disunity, as well as social, political and economic events. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 4740 - Modern China

3 Credits
An examination of the fall of the Imperial dynastic system and the rise of new political ideas of governance including republicanism and communism. Important topics include: the 1911 revolution, the warlord years, the creation of the nationalist and Communist parties, WWII in Asia and the rise and fall of Mao Zedong. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

HIST 4750 - Modern Japan

3 Credits
Included in this semester will be a study of Japan's contact with the West, the Meiji Restoration and the creation of a modern nation, the expansion of the empire, and the rise of militarism and World War II. The course concludes with the postwar occupation and recovery of Japan. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 4760 - Shoguns, Samurai and Sepukku

3 Credits
Course begins with the establishment of the first military feudal regime in 1185 and ends with the "Restoration" of imperial rule in 1868. Included is an examination of the political, cultural, economic, and social aspects of each of the three Shoguns that comprise the era of the Shoguns in Japan.

HIST 4770 - Vietnam Wars

3 Credits
A focus on the country, people and U.S. involvement. Guest speakers will supplement the lectures and give first-hand accounts of their participation in the war. 'Vietnam' will also define the role of American foreign policy during the Cold War. Approved for Compass Curriculum requirement: Writing Intensive.

HIST 4780 - History of Modern Southeast Asia

3 Credits
The countries of Malaysia, Indonesia, the Philippines, Singapore, Thailand, Laos, Cambodia and Vietnam in 19th and 20th centuries. Students will consider religious, social, economic and revolutionary trends prior to independence and then look at the problems of post-colonial independence from a regional point of view. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 4790 - Militias, Machines, and Myth

3 Credits
An objective examination of the military history of the United States from the colonial period to the present. Significant battles and campaigns are carefully analyzed, but equal attention is given to cause and effect relationships of America's wars in a national and global context.

HIST 4800 - Theory and Methods in History

3 Credits
Seminar discussions and presentations emphasizing research skills and methods in history. Students should take prior to or along with Senior Thesis Seminar, HIST 4990.

HIST 4803 - The American West and Displacement of Native Americans,1800-1910

3 Credits
Covers the discovery and settlement of the American West, and also documents the displacement of Native Americans during the period of 1800-1910. The course will be presented from two points of view, historical and ethnographical. Historical lectures will includes citations from diaries, journals, and primary sources. Approved for Compass Curriculum requirement: Writing Intensive.

HIST 4810 - Research Seminar on the History of Europe, 1914-1968

3 Credits
An examination of the discipline of history, including methods and theory. Close reading of representative historians, with exercises in historical writing and research. Prer., Junior or Senior only, or permission of instructor.

HIST 4820 - Research Seminar on the Vietnam War, 1945-1973

3 Credits
Examines the French and American war in Vietnam, 1945-1973, with an emphasis on historiography and the use of primary documents and popular literature to evaluate the Vietnamese struggle for independence.

HIST 4830 - Research Seminar: Depression and War, 1929-1945

3 Credits
Research-intensive seminar focusing on American history 1929-1945. Students will prepare a significant research project in this area. Prer., Juniors and Seniors only or permission of instructor. Approved for Compass Curriculum requirement: Writing Intensive.

HIST 4840 - Research Seminar: History of India, 1700 - Present

3 Credits
An in-depth study of the historian's craft, using modern Indian history as the vehicle for understanding various methods of research. Prer., Junior or Senior status or permission of instructor.

HIST 4850 - Research Seminar: Historical Genealogy

3 Credits
This seminar emphasizes the history of genealogy, its methodology and its relation to history as a field of study. Objectives include preparation for Senior Thesis. Students will learn to familiarize themselves with sources, methods of research, writing, and citation. Requisites: Junior/Senior standing only.

HIST 4860 - Research Seminar: Mexico and U.S. Borderlands

3 Credits
This course explores the majors trends of Mexico and the U.S.-Mexican Borderlands from encounters and conquest to the present day challenges of immigration, NAFTA, and the unique borderland identity. This research seminar aims to prepare History majors for the final Senior Thesis capstone. Students will thus engage in primary source research on a specific topic. No Spanish language required. Approved for LAS Global Awareness requirement.

HIST 4880 - Research Seminar: Civil Rights in American History

3 Credits
Research-focused course on the long history (18th century to present) of civil rights in American History, including issues of race and gender equality. Prer., Juniors and Seniors only or permission of instructor. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Writing Intensive.

HIST 4990 - Senior Thesis Seminar: Approaches to the Study of History

3 Credits
A required course for the history degree. The focus is on research methods, organization of ideas, analysis of evidence, and writing history. Under the direction of a faculty member, each member of the seminar will prepare an original piece of research: the Senior thesis. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., Junior or Senior status and 9 resident hours of upper division History courses.

HIST 6000 - Historiography

3 Credits
Introduction to the professional study of history. Required of all graduate students. Offered in fall semester only. Prer., Admission to program or permission of instructor.

HIST 6110 - Readings in Medieval European History

3 Credits
This graduate course analyzes the major secondary literature and historical interpretations in Medieval history, from c. 300 to c. 1300 A.D. Prer., Graduate status.

HIST 6150 - Readings in the Renaissance and Late Medieval Europe

3 Credits
This graduate course analyzes the major secondary literature and historical interpretations in the Renaissance and late Medieval Europe, from c. 1300 to c. 1500 A.D. Prer., Graduate status.

HIST 6220 - Readings in the Reformation and Counter Reformation

3 Credits
This graduate course analyzes the major secondary literature and historical interpretation in the era of the Reformation and the Counter-Reformation, from c. 1500 to c. 1648 A.D. Prer., Graduate status.

HIST 6250 - Readings in the Old Regime, 1648 to 1789

3 Credits
Graduate-level readings in a period of European history. Prer., Admission to program or permission of instructor.

HIST 6310 - Readings in the Age of Revolution, 1789 - 1870

3 Credits
Graduate-level readings in a period of European history. Prer., Admission to program or permission of instructor.

HIST 6350 - Readings in Modern Europe, 1870 to the Present

3 Credits
Graduate-level readings in a period of European history. Prer., Admission to program or permission of instructor.

HIST 6460 - Readings: Religion and Culture in America, 1500 to 20th Century

3 Credits
Graduate seminar emphasizing intensive and extensive scholarly readings on religion and culture in America, preparing students for the graduate research seminar paper. Prerequisite to HIST 7460.

HIST 6510 - Readings in U.S. History, 1765 - 1815

3 Credits
A graduate reading course designed to familiarize graduate students with the historiography of the American Revolution and the early national period. Students will read major works by past masters as well as current historiography.

HIST 6610 - Readings: United States, 1815 - 1876

3 Credits
Graduate level readings in the major historiographic problems of the early 19th century through the Civil War and Reconstruction. Prer., Graduate status in history.

HIST 6630 - Readings in the Civil War/Reconstruction Era

3 Credits
Graduate seminar emphasizing intensive and extensive scholarly readings on the Civil War and Reconstruction Era (1831-1890), preparing students for the graduate research seminar paper. Prer., Graduate status.

HIST 6660 - Readings in U.S. History: Emergence of Modern America

3 Credits
Extensive reading of modern historians in the political, economic, social, and cultural history of the U.S. during the period of the emergence of industrialized America. Prer., Graduate status.

HIST 6690 - Special Topics: Readings

3 Credits
A readings seminar in a particular field not covered in regular graduate courses. Prer., Graduate status or permission of instructor.

HIST 6710 - Readings in U.S. History: The Super Power Era, 1918 - Present

3 Credits
Extensive reading of modern historians in the political, economic, social, and cultural history ofthe U.S. during the period of America as a world superpower. Prer., Graduate status.

HIST 6750 - Readings in Modern Middle East History

3 Credits
Graduate seminar designed to provide a broad introduction to major approaches in modern Middle East history in the 19th and 20th centuries. Prer., Graduate standing.

HIST 6760 - Readings in the Trans-Mississippi West

3 Credits
A graduate seminar designed to provide an in-depth understanding of the role of the trans-Mississippi American West in the history of the United States.

HIST 6780 - Readings in City and Citizenship

3 Credits
Students will read, discuss, and write on a series of assigned books and articles related to the cross-regional fields of urban history, city, citizen, public space, and public sphere across geographic regions and time periods.

HIST 6790 - Readings in Latin American History

3 Credits
Provides students with a broad introduction to the major themes in Latin American history. Indigenous cultures, colonial history, the emergence of nations in the 19th century and revolutions of the 20th century will be covered.

HIST 6810 - Readings in the Indian Subcontinent Since 1556

3 Credits
Graduate seminar designed to provide an in-depth knowledge of South Asia since the advent of the Mughal Empire. Prer., Admission to program or permission of instructor.

HIST 6860 - Readings in the Pacific Rim Since 1600

3 Credits
Graduate seminar designed to provide an in-depth knowledge of East Asia since 1600.

HIST 6995 - Graduate Internship in History

3 Credits
Students will be involved in community and organizational settings where they will gain practical work and networking experience. They will apply critical analysis as well as historical research methods to their sites for their academic component. Fulfills "elective" component for M.A. degree.

HIST 7110 - Research in Medieval European History

4 Credits
Graduate level research and preparation of a scholarly paper, using primary sources, in medieval history. Prer., HIST 6110; Graduate status or permission of instructor.

HIST 7150 - Research in Renaissance and Late Medieval History

4 Credits
Graduate level research and preparation of a scholarly paper, using primary sources, in the Renaissance and late medieval Europe. Prer., HIST 6150; Graduate status or permission of instructor.

HIST 7220 - Research in the Reformation and Counter-Reformation

4 Credits
Graduate level research and preparation of a scholarly paper, using primary sources, in the Reformation and Counter-Reformation. Prer., HIST 6220; Graduate status or permission of instructor.

HIST 7250 - Research in the Old Regime, 1648-1789

4 Credits
Graduate level research in a period of European history. Prer., HIST 6250; Graduate status or permission of instructor.

HIST 7310 - Research in the Age of Revolution, 1789-1870

4 Credits
Graduate level research in a period of European history. Prer., HIST 6310; Graduate status or permission of instructor.

HIST 7350 - Research in Modern Europe, 1870 to Present

4 Credits
Graduate level research in a period of European history. Prer., HIST 6350; Graduate status or permission of instructor.

HIST 7460 - Research in American Religion

4 Credits
Graduate research seminar emphasizing an individualized research project on any approved topic in religion and culture in American history. Prer., HIST 6460.

HIST 7510 - Research in U.S. History, 1765 - 1815

4 Credits
A course in primary research in Revolutionary America. Prer., HIST 6510; Graduate status or permission of instructor.

HIST 7610 - Research in U.S. History: 1815 - 1877

4 Credits
A course in research for MA students. Students will be required to use primary sources in American history (1815-1877). Prer., Graduate status or permission of instructor.

HIST 7630 - Research in the Civil War and Reconstruction Era

4 Credits
Graduate research seminar emphasizing preparation of primary-source based article on topics in the Civil War and Reconstruction Era (1831 - 1890). Prer., HIST 6630.

HIST 7660 - Research in U.S. History: The Emergence of Modern America, 1876 - 1918

4 Credits
Graduate level research in modern American history. Prer., HIST 6660; Graduate status or permission of instructor.

HIST 7690 - Special Topics: Research

4 Credits
A research seminar in a particular field not covered in regular graduate courses. Prer., Graduate status or permission of instructor.

HIST 7710 - Research in U.S. History: The Super Power Era, 1918 - Present

4 Credits
Graduate level research in modern American history. Prer., HIST 6710; Graduate status or permission of instructor.

HIST 7750 - Research in Modern Middle East History

4 Credits
Students will engage in primary source research of a topic of their choice within the field of modern Middle East history.

HIST 7760 - Research in the Trans-Mississippi West

4 Credits
A graduate seminar in which students will research and write a term paper on a specialized topic in the history of the Trans-Mississippi American West. Prer., HIST 6760; Graduate status or permission of instructor.

HIST 7780 - Research in City and Citizenship

4 Credits
Students will research, write, and revise a 25- to 35-page research paper based on primary as well as secondary sources. Topics will range in geographic region and time period, but relate to the fields of city and citizenship. Prer., HIST 6780.

HIST 7790 - Research in Latin American History

4 Credits
Students will engage in primary source research of a topic of their choice within the field of Latin American history. Prer., HIST 6790. Graduate status or permission of instructor.

HIST 7810 - Research in the Indian Subcontinent Since 1556

4 Credits
A graduate seminar in which the students will research and write a term paper on a specialized topic in South Asian history. Prer., HIST 6810.

HIST 7860 - Research in the Pacific Rim Since 1600

4 Credits
A graduate seminar in which the students will research and write a term paper on a specialized topic in East Asian history. Prer., HIST 6860. Graduate status or permission of instructor.

HIST 9400 - Independent Study in History: Undergraduate

1-3 Credits
Prer., Consent of instructor.

HIST 9600 - Independent Study in History: Graduate

1-3 Credits
Prer., Instructor consent.

HRMG - Human Resource Management

HRMG 4340 - Labor Relations and Negotiation

3 Credits
Examines the dynamic relationships between labor unions and employers. Topics include the history of labor relations in the United States, labor laws, organizing campaigns, collective bargaining, and conflict resolution. A major focus of this course is the development of students' negotiation skills, a key competency that is necessary for success in the world of business. Legal and ethical practices are emphasized. The course is appropriate for all majors. Prer., MGMT 3300. Junior standing; Business students only.

HRMG 4380 - Human Resource Management

3 Credits
Presents an overview of the entire Human Resource (HR) function. Topics include recruiting, staffing, human resource planning, employee separation and retention, training and development, career planning, pay and benefits, and human resource information systems. Prer., Junior standing. Business students only. MGMT 3300.

HRMG 4390 - Legal and Social Issues in Human Resources Management

3 Credits
Covers the myriad of legal and social issues facing Human Resources (HR) and other managers today. Major emphasis is placed on equal employment opportunity, affirmative action, safety, and health. Other topics may include sexual harassment, drug testing programs, employing the disabled, employee privacy rights, and wrongful termination. Prer., MGMT 3300. Junior standing; Business students only.

HRMG 4410 - Motivating, Rewarding, and Developing Employees

3 Credits
Examines practices by which organizations and employees can maximize the mutual benefits that accrue to each other. Emphasis is placed on developing and applying skills in compensation and benefits. Other topics include training and development, performance management systems, and strategic human resource management (HRM). Prer., Junior standing. Business students only. MGMT 3300.

HRMG 4850 - Directed Research Projects in Human Resources and Management

3 Credits
A comprehensive human resources or management research, analysis, and planning project. Students work with a local business under the supervision of the course instructor to perform a literature review, conduct analysis, present information, and put together a comprehensive project on some aspect of human re-

source management or organizational management. Prer., MGMT 3300. Junior standing; Business students only.

HRMG 4960 - Internship in Human Resources

1-3 Credits
Undergraduate internship in human resources. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/senior business students only.

HSCI - Health Sciences

HSCI 1020 - Personal Fitness and Wellness

3 Credits
Investigates the value of six components of wellness: physical, social, intellectual, environmental, spiritual, and emotional. Activities include the development of tools and strategies to improve personal fitness levels, nutrition status, stress management, and maintaining a healthy lifestyle throughout the lifespan. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

HSCI 1030 - Fitness Through Tai Chi

2 Credits
Provides an experiential overview of health, wellness,and the art of self-awareness, balance and flow through the practice of Tai Chi.

HSCI 1040 - Belly Dancing

1 Credit
Learn techniques of movement in the art of Belly Dancing. Promote cardiovascular and neuro-muscular health through instructor guided activities. Principles, techniques, and safe practices will be taught. Course includes cognitive (knowledge), psychomotor (physical skills), and affective (attitude) learning opportunities.

HSCI 1060 - Personal Nutrition

3 Credits
Factors influencing human nutritional requirements and food sources to meet them. Emphasis on application of biological principles in the students own diets and lives. Course will include how to evaluate one's own nutritional needs and the adequacy of personal diet. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Meets with BIOL 1050.

HSCI 1080 - Outdoor Adventure Fundamentals

3 Credits
Explores the foundations of adventure-based outdoor recreation. Students will learn techniques for enjoying outdoor environments. Topics include: navigation, weather patterns, wilderness travel, camping, backpacking, food, clothing, ethics, mental preparation, judgment and decision making. Information is taught in the classroom and in the field. A three-day expedition is required of all students enrolled.

HSCI 1090 - Strength Band Training

1 Credit
Guided by the recommendations of the American College of Sports Medicine, this course will teach the student the proper form and specific muscle groups worked in resistance band training. Includes a strong active learning component, where students will participate in Resistance exercises.

HSCI 1110 - Weight Training

2 Credits
Basic knowledge and concepts of resistive exercises to increase muscle strength and endurance. Participation in an individual weight training program.

HSCI 1120 - Hiking, Walking and Jogging for Fitness and Health

2 Credits
Knowledge and techniques of hiking, walking and jogging as modes for developing and/or maintaining appropriate health related physical fitness levels.

HSCI 1130 - Pilates Theory and Practice

2 Credits
Explores the basic theory of Pilates. Emphasis will be placed on the physiological and psychological aspects of Pilates. Includes a strong active learning component, where students will actively participate in Pilates activity.

HSCI 1140 - Yoga Theory and Practice

2 Credits
Explores yoga theory and practice focusing on strength, flexibility, balance and harmony as tools of daily life which enhances holism. Practicing relaxation and meditation will deepen understanding of self-care and the ability to care for others.

HSCI 1150 - Cardio Kickboxing

1 Credit
Basic techniques of kickboxing. Class is held in a cardio-exercise format with focus on developing and maintaining healthy physical fitness levels.

HSCI 1160 - Swimming/Conditioning

1 Credit
Focus is on proper form and technique in deep water swimming and on developing and maintaining healthy physical fitness levels.

HSCI 1170 - Rock Climbing

1 Credit
Students learn the skills needed to rock climb. Taught in the Recreation Center and in the field. Personal helmet required.

HSCI 1180 - Mountain Biking

1 Credit
Basic techniques of mountain bike riding as well as bike maintenance. Taught on site and in the field.

HSCI 1210 - Boot Camp Toning & Conditioning

1 Credit
Drill training for cardiovascular conditioning and muscular strength. Major focus on activity each class.

HSCI 1220 - Wilderness First Aid

1 Credit
The use and administration of first aid in wilderness or outdoor settings. Emphasis is on the use of available wilderness tools and resources to administer care.

HSCI 1222 - Zumba

2 Credits
This course provides an overview of the specific health benefits and creation of Zumba. Emphasis on movement and expression through dance and choreography. Each class will have a strong physical component.

HSCI 1230 - Introduction to Distance Running (5K-Marathon)

2 Credits
Basic knowledge and concepts behind preparation for distance running, from the 5K to the marathon. Course will include designing of a

running training program, interactions with local running stores and running groups in Colorado Springs, and a weekly group workout.

HSCI 1240 - Special Topics Activities

1-2 Credits
Investigation into selected activities related to Health Sciences no included in regular curriculum.

HSCI 1250 - Suspension Training

1 Credit
Students will design individual workout programs accounting for personal goals, ability, and experience utilizing suspension-training equipment. Although ability will not be graded, improvement in strength in selected training programs is important and expected.

HSCI 1350 - Fad Diets

1 Credit
This course examines popular diets, including their effectiveness and safety. Criteria are also established for evaluating weight loss diets.

HSCI 1400 - Core Strength

2 Credits
This exercise course emphasizes activation of strength through rotational movements, core exercises and proper stretching techniques. This course is useful for injury prevention, rotational sports and movements, and overall core strength.

HSCI 1500 - Circuit Training

2 Credits
Activity in circuits, consisting of cardiovascular and resistance training in a variety of combinations.

HSCI 1600 - Principles of Biomedical Sciences

3 Credits
Investigation of various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia and infectious diseases. Determination of factors leading to the death of a fictional person and investigation of lifestyle choices and medical treatments that may have prolonged the person's life.

HSCI 1610 - Human Body Systems

3 Credits
Interactions of human body systems including identity, power, movement, protection and homeostasis. Includes investigation of structures and function of human body and use of data acquisition software to monitor body functions like muscle movements, reflex and voluntary action, and respiration.

HSCI 1620 - Medical Interventions

3 Credits
Investigation of interventions for prevention, diagnosis, and treatment of disease. Emphasis on maintenance of overall health and homeostasis in the body. Exploration of infection prevention and treatment; screening and evaluating human DNA; preventing, diagnosing and treating cancer and organ failure.

HSCI 1630 - Biomedical Innovation

3 Credits
Designing innovative solutions for the health challenges of the 21st century. Topics include clinical medicine, physiology, biomedical engineering, and public health as well as completion of an independent project.

HSCI 2010 - Intro to Health Science Professions

3 Credits
Foundations of the fields related to sports, health, and wellness promotion. Includes history and philosophy, careers, professional organizations, certifications, sub-disciplines and professional issues.

HSCI 2060 - Health Science Statistics

3 Credits
Introduction to statistical methods utilized for analysis of health sciences data. Includes descriptive statistics (frequency distribution, measures of central tendency and variability) and inferential statistics (correlation, T-test and analysis of variance). Students must have access to MS Excel 2007, preferred 2010. Health Science Majors only.

HSCI 2070 - Nutrition for Health Professionals

3 Credits
An introductory course for health sciences students which focuses on biological and environmental influences on nutritional needs and status. The role of nutrients in energy metabolism and physiology, and the teaching role of the health professional will be emphasized, as well as personal dietary assessment. Meets with BIOL 2050.

HSCI 2080 - The Profession of Dietetics

3 Credits
Introduction to the profession of dietetics and responsibilities, including the DPD program, dietetic internship application process, professional responsibilities and obligations, and career options in the dietetics profession.

HSCI 2350 - Sport Science for Sport Administrators

4 Credits
Integration of exercise training and testing into business practices of sports organizations. Interdisciplinary lecture/lab format introduces and emphasizes roles and impact of human anatomy, exercise physiology, biomechanics, growth and development, nutrition, training prinicples, and drug testing in the development and management of sport. Prer., SPTM 1000 or instructor permission.

HSCI 2470 - Spanish for Health Care Providers

3 Credits
Introductory conversational Spanish and orientation to health care needs.

HSCI 2800 - Biomedical Aging: Myths and Realities

3 Credits
Study of the processes related to biological, medical and physical aspects of aging. Meets with GRNT 2040.

HSCI 3201 - Health Behavior Change

3 Credits
Overview of theoretical and psychosocial perspectives of changing health behavior at the individual, interpersonal and community level. Focuses on increasing professional skills in describing, applying and integrating health behavior change techniques in the design of programs for individuals and communities. Prer., Sophomore level; Health Sciences majors, Nursing majors, Nutrition minors, or Health and Wellness minors only, or permission of instructor.

HSCI 3230 - Medical Terminology

3 Credits
Introduces students to the key concepts of

proper medical and scientific terminology usage and word building, within the context of human anatomy, physiology, and pathology.

HSCI 3280 - Herbal and Dietary Supplements

3 Credits
Exploration and discussion of the role of herbal products and dietary supplements in nutrition and health. Topics include individual supplements; herbal preparation; sports supplements; safety and efficacy; bioavailability; and federal regulations. Students will assess scientific literature associated with herbal and dietary supplements. Prer., Sophomore standing or higher; HSCI 1060 or HSCI 2070.

HSCI 3300 - Professionalism and Ethics

3 Credits
An examination of ethical theories and practical moral issues encountered in program related professional fields. A detailed discussion of professional practices and guidelines in medical laboratory sciences and other related disciplines.

HSCI 3310 - Applied Sport and Exercise Psychology

3 Credits
Introduction to a wide variety of skills and methods to enhance performance and personal growth in sport and exercise. Focuses on ways to increase motivation, manage competitive anxiety, control concentration, develop confidence, improve communication skills and promote team unity. Prer., PSY 1000.

HSCI 3320 - Group Fitness Instruction

3 Credits
Applies the principals of teaching fitness and health concepts in group settings. Concepts covered include motivation, communication, pedagogy, cuing and transitions in a variety of class settings. Teaching programs for groups are planned, implemented, and evaluated.

HSCI 3330 - Sports Nutrition: Basic Principles

3 Credits
Focuses on the nutritional aspects of sports and exercise performance and health for active individuals and athletes. Topics include energy balance and body composition, macro- and micronutrients, hydration and fluid balance, dietary supplements and ergogenic aids, special needs populations, and sport-specific nutrition. Prer., HSCI 1060 or HSCI 2070, and BIOL 2010.

HSCI 3450 - Trends and Issues

3 Credits
Provides the student with an historical perspective of the social political context of the health care delivery system and concepts include health care economics, medical ethics, health care politics and professional empowerment.

HSCI 3460 - Organization and Administration

3 Credits
Practical and theoretical approach to organization and administration content for health and human performance careers emphasizing leadership principles and ethical decision making. Prer., Health Science majors only, Junior standing.

HSCI 3520 - Health Communication

3 Credits
The principles of learning/teaching are applied to problems in clinical settings. Teaching programs for individuals and groups are planned, implemented and evaluated as part of the course. Req., HSCI 3201. Health Sciences majors, Nursing majors, Nutrition minors, or Health and Wellness minors only, or permission of instructor.

HSCI 3630 - Culture and Health

3 Credits
Explores health/illness concepts of various populations and introduces cross cultural assessment skills. Cultural health belief systems, biological variation and patterns of adaptation to the environment are included. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Navigate. Prer., Sophomore standing.

HSCI 3920 - Community Nutrition

3 Credits
An introductory course that covers community nutrition outreach, population-specific interventions, nutrition education, food delivery systems and programs, food politics and policies, world hunger, U.S. food insecurity, and the obesity epidemic. Prer., BIOL 2030, CHEM 3001, CHEM 3002, HSCI 2070; Coreq., HSCI 3950, HSCI 4920. Nutrition majors only or Nutrition minors with permission of instructor.

HSCI 3940 - Nutrition Science and Food Preparation

3 Credits
The basics of food preparation and food composition. Course content will interpret nutrient analysis; provide instruction for menu and meal development appropriate for groups, individual diets, and specialized health situations. Emphasizes the application of food science knowledge. Prer., BIOL 2030, BIOL 2130, CHEM 3001, CHEM 3002, HSCI 2070; coreq., HSCI 3920, HSCI 3950, HSCI 4920. Nutrition option majors only or Nutrition minors with permission of instructor.

HSCI 3950 - Food Systems Management I

3 Credits
Equips students with the understanding of the food service systems model. Students will learn principles and techniques related to menu and distribution, quantity food production, food safety and sanitation, and the equipment of a food service operation. Approved for Compass Curriculum requirement: Sustainability. Prer., PSY 1000; coreq., HSCI 3920, HSCI 3940, HSCI 4920; Junior or Senior standing; Nutrition option majors only or Nutrition minors with permission of instructor.

HSCI 4010 - Health Science Research

3 Credits
Develops a fundamental understanding of the research process. Enables students to critically analyze the merit of published health science research. Students begin to derive a theoretical and research knowledge base of therapeutic care interventions. Approved for Compass Curriculum requirement: Writing Intensive. Prer., Health Science majors, Nursing Majors, Nutrition minors, or Health & Wellness minors only; HSCI 3630; HSCI 2060 or PSY 2100.

HSCI 4020 - Food Systems Management II

3 Credits
The operational and financial elements of a food service operation. Emphasis is on food safety, human resource management, financial accountability and marketing in food service operations. Prer., ACCT 2010, HSCI 3920, HSCI 3940, HSCI 3950; coreq., MKTG 3000; Health Sciences majors or Nutrition minors or Sports Health and Wellness minors only, or permission of instructor.

HSCI 4030 - Sports Specific Training Principles and Techniques

3 Credits
Theory and practice of designing and administering strength training and conditioning programs for athletes. Emphasis will be placed on the sport specific nature of such programs. Open to Juniors and Seniors. Prer., BIOL 3300 and BIOL 4550. Meets with HSCI 5030.

HSCI 4050 - Obesity and Weight Management

3 Credits
Focuses on the etiology, treatment, and prevention of obesity in a variety of populations. Emphasis is placed on the role of diet, exercise, behavioral treatment, and prevention. Topics also include pharmaceuticals, bariatric surgery, supplements, and childhood obesity. Prer., HSCI 2070. Meets with HSCI 5050.

HSCI 4060 - Advanced Sports Nutrition and Metabolism

3 Credits
An advanced course in human metabolism with focus on nutrition, exercise, performance, and health. Covers metabolism and energy balance, macro- and micronutrients, and fluid balance applied to exercising individuals and athletes using nutritional interventions to promote health and human performance. Prer., HSCI 2070, HSCI 4010, BIOL 3300; Junior or Senior standing. Meets with HSCI 5060, BIOL 4770, and BIOL 5770.

HSCI 4079 - Clinical Laboratory Operations

2 Credits
Introduces theory, application, technical performance, and evaluation of skills specific to clinical laboratory science practice. Laboratory safety; microscopy; pipetting; general laboratory equipment; quality control; mathematics; phlebotomy; pre-analytic, analytic, and post-analytic processes.

HSCI 4080 - Pathophysiology for the Health Sciences

3 Credits
Study of disease by organ system with emphasis on etiology and pathogenesis of the disease; how structural consequences of disease lead to funtional consequences or symptoms; how cells respond to injury. Students will build a framework for understanding specific diseases. Prer., BIOL 2010, BIOL 2020, CHEM 1401/1402, CHEM 1411/1412. Meets with HSCI 5080.

HSCI 4089 - Intro to Clinical Hematology

2 Credits
Introduces the theory, practical application, technical performance and evaluation of hematological and hemostasis procedures. There is an emphasis on the correlation of clinical laboratory data with diagnoses of erythrocyte, leukocyte, and bleeding/clotting disorders.

HSCI 4090 - Food, Culture, Community, and Health

3 Credits
This course focuses on the history and culture of food, how our lifestyle choices, inlcuding the way we eat, impact our planet, and what we can do to promote healthier and more sustainable communities. Approved for Compass Curriculum requirement: Sustainability. Prer., HSCI 2070, CHEM 1301. Meets with HSCI 6140.

HSCI 4099 - Intro to Clinical Microbiology

2 Credits
Course introduces the theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans. The course focuses on bacteriology, emphasizing the correlation of clinical laboratory data with patient's diagnosis and treatment.

HSCI 4109 - Intro to Clinical Chemistry and Urinalysis

1 Credit
Introduces clinical chemistry and urinalysis theory, practical application, technical performance and evaluation of laboratory procedures. Clinical laboratory correlation with detection and monitoring of carbohydrate, hepatic, protein, and renal conditions are emphasized. Enzyme theory introduced.

HSCI 4119 - Intro to Clinical Immunohematology

1 Credit
Course introduces the theory, practical application, technical performance and evaluation of immunohematology procedures required to provide compatible blood components for transfusion. Methods for collection, processing, storage and transfusion of blood and blood components will be presented. Immunohematology procedures that assist in the diagnosis and management of hemolytic conditions will be introduced.

HSCI 4129 - Clinical Laboratory Science Theory, Application, and Correlation

5 Credits
Includes the application, evaluation, and correlation of laboratory procedures used in the diagnosis and treatment of common disease states. Opportunities for building critical thinking, oral communication, professional behavior, and teamwork skills are provided in small-group clinical case discussions. An Extended Studies course offering. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4139 - Special Endocrinology and Toxicology

1 Credit
Incorporates advanced theory, practical application and evaluation of clinical laboratory procedures. Correlation of clinical laboratory data with diagnosis and treatment of endocrine disorders, toxicology disturbances, and therapeutic drug monitoring is emphasized. Educational process includes application/correlation through lectures/assessments. Prereq., Clinical Laboratory Science students only.

HSCI 4149 - Clinical Chemistry and Urinalysis I

2 Credits
Expands on HSCI 4079 and HSCI 4109, including automated methodologies. Emphasizes the interpretation, evaluation, and correlation of clinical laboratory data with diagnosis and treatment monitoring of cardiac, lipid/lipoprotein, electrolyte, enzyme, pancreatic-gastrointestinal and acid-base disorders. An Extended Studies course offering. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4159 - Clinical Chemistry & Urinalysis II

2 Credits
Expands on HSCI 4149 and HSCI 4449 content. Correlation of clinical laboratory data with the diagnosis and treatment monitoring of trace elements, and inborn errors of metabolism disorders; and tumor markers are emphasized. An Extended Studies course offering. Prer., HSCI 4149.

HSCI 4169 - Clinical Hematology I

2 Credits
Introduction to the theory, practical application, technical performance, and evaluation of hematological and coagulation procedures. Emphasis on the correlation of clinical laboratory data with the diagnosis and treatment of

anemia, leukemia, and bleeding/clotting disorders. An Extended Studies course offering. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4179 - Clinical Hematology II

2 Credits
Expands on hematological and hemostasis content presented in HSCI 4169 and HSCI 4449, including body fluid analysis (e.g., cerebrospinal, synovial, serous). Emphasizes correlation of clinical laboratory data with diagnosis and treatment of erythrocyte, leukocyte, and bleeding/clotting disorders. An Extended Studies course offering. Prer., HSCI 4169.

HSCI 4189 - Clinical Microbiology I

2 Credits
This course expands on the theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans introduced in Introduction to Clinical Microbiology. An Extended Studies course offering. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4199 - Clinical Microbiology II

2 Credits
Course builds on the infectious disease theory (bacteriology, mycology, parasitology, and virology), practical application and evaluation of the procedures introduced in HSCI 4189 and HSCI 4489. Correlation of clinical laboratory data with patient clinical information is emphasized. Prer., HSCI 4189.

HSCI 4209 - Clinical Immunology and Molecular Diagnostics

2 Credits
Theory, practical application, and evaluation of immunological components, principles, and methodologies used in the assessment of immunologically related disorders, including hypersensitivity reactions, autoimmune, immunoproliferative, and immunodeficiency disorders, tumors, and transplantations. An Extended Studies course offering. Approved for Compass Curriculum requirement: Writing Intensive. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4210 - Nutrition and Aging

3 Credits
Effects on nutritional requirements due to physiological changes during aging, with application to disease prevention and community health care. Prer., BIOL 2010, BIOL 2020, and HSCI 4200.

HSCI 4229 - Clinical Immunohematology I

2 Credits
Theory, practical application, technical performance, and evaluation of blood bank procedures required for transfusion of blood and blood components and for handling and storage of blood and blood components. An Extended Studies course offering. Prer., HSCI 4209.

HSCI 4239 - Clinical Immunohematology II

2 Credits
Course builds on immunohematology theory, practical application, and evaluation of the procedures introduced in HSCI 4229 and HSCI 4429. Resolving complex immunohematology problems, hemolytic disorder diagnosis and management, blood product management, and adverse effects of transfusion are emphasized. Prer., HSCI 4209 and HSCI 4229.

HSCI 4309 - Clinical Laboratory Management I

2 Credits
Theory, practical application, technical performance, and evaluation of laboratory management principles and associated models. Focus is on effective written and oral communications, critical evaluation of research studies, compliance and regulatory issues, educational methodology, human resource and financial management, and laboratory operations. An Extended Studies course offering. Prer., admission to the Clinical Laboratory Specialist program.

HSCI 4319 - Clinical Laboratory Management II

3 Credits
Advanced theory, practical application, technical performance, and evaluation of laboratory management principles and associated models. Opportunities are provided to build problem-solving, teamwork, and management skills. An Extended Studies course offering. Approved for Compass Curriculum requirement: Summit. Prer., HSCI 4309.

HSCI 4380 - Substance Abuse

3 Credits
Presents the most recent findings regarding the pathology of substance abuse. The misuse of drug and alcohol and the associated effects that influence key dynamic processes in family system functioning are discussed.

HSCI 4410 - Forensic Chemistry & Toxicology

4 Credits
Introduces the chemical science of forensic investigative techniques including the principles of biochemistry, toxicology, and serology. Prer., BIOL 1010, BIOL 1020, CHEM 1010, CHEM 1020.

HSCI 4429 - Clinical Immunohematology Laboratory Practicum I

1 Credit
Course expands on immunohematology theory, practical application, and evaluation of procedures introduced in HSCI 4119 and basic laboratory concepts and skills introduced in HSCI 4079. Immunohematology procedures that assist diagnosis and management of hemolytic conditions.

HSCI 4430 - Advanced Nutrition I

3 Credits
A comprehensive study of the energy providing nutrients and how they are metabolized within the human body. This course will provide students with a firm basis of the biochemistry of proteins, fats and carbohydrates. Fall. Prer., BIOL 3020. Meets with BIOL 4300.

HSCI 4439 - Clinical Immunohematology Laboratory Practicum II

1 Credit
Provides practical experience in a clinical laboratory setting for the technical performance and evaluation of clinical iImmunohematology procedures and preparation and management of blood product components. Course content builds on HSCI 4239.

HSCI 4440 - Advanced Nutrition II

3 Credits
A comprehensive study of the micronutrients and how they are metabolized within the human body. This course will provide students with a firm foundation of the biochemistry, physiology, and metabolism of vitamins, minerals, trace elements, and electrolysis. Prer., HSCI 4430 with a grade of "C" or higher.

HSCI 4449 - Clinical Core Laboratory Practicum I

1 Credit
Provides practical experience in a clinical laboratory setting for the technical performance and evaluation of clinical hematology/hemostasis, chemistry, and urinalysis procedures. Expands on concepts presented in HSCI 4149 and HSCI 4169, including automation and automatic verification techniques.

HSCI 4450 - Principles of Disaster Preparedness and Emergency Response

3 Credits
An overview of public health aspects of disasters, emphasizing preparedness and emergency response. Second course of four-part certificate. Meets with HSCI 6210.

HSCI 4459 - Clinical Core Laboratory Practicum II

1 Credit
Provides practical experience in a clinical laboratory setting for the technical performance and evaluation of clinical hematology/hemostasis, chemistry, and urinalysis procedures. Expands on concepts presented in HSCI 4159 and HSCI 4179, including automation and automatic verification techniques.

HSCI 4460 - Principles of Medical Preparedness and Response to Specific Types of Disasters

3 Credits
Discusses the public health impacts of specific types of disasters using selected disasters as examples. Meets with HSCI 6220.

HSCI 4470 - Special Topics in Disaster Public Health

3 Credits
Covers special public health issues that apply to disasters. Includes segments on terrorism and insurgency, medico-legal disaster response, threat assessment, and risk analysis. Fourth course of a four-part certificate. Meets with HSCI 6230.

HSCI 4480 - General Principles of Disaster Public Health

3 Credits
Overview of public health disasters to provide a foundation leading to disaster responses and implementation. Addresses the education training required for professionals. Meets with HSCI 6200.

HSCI 4489 - Clinical Microbiology Laboratory Practicum I

1 Credit
Provides practical experience in a clinical laboratory setting for the technical performance and evaluation of clinical microbiology procedures with the application of infectious disease concepts. Course content builds on HSCI 4189.

HSCI 4490 - Exercise Considerations for Special Populations

3 Credits
Practical and theoretical exercise programming for development with special needs individuals, focusing on managing chronic conditions and disabilities across the lifespan. Meets with HSCI 5490. Preq., HSCI 4670. Health Sciences majors or Sports Health and Wellness minors only.

HSCI 4499 - Clinical Microbiology Laboratory Practicum II

1 Credit
Provides practical experience in a clinical laboratory setting for the technical performance and evaluation of clinical microbiology procedures with the application of infectious disease concepts. Course content builds on HSCI 4199.

HSCI 4500 - Legal and Ethical Issues Health Care

3 Credits
A theoretical basis for ethical/legal decision-making is applied to contemporary situations encountered in nursing and medical practice.

HSCI 4540 - Death and Dying

3 Credits
A comprehensive introduction to the study of death and dying with integration of a wide range of interdisciplinary approaches. Providing a theoretical basis and current research on the topic. The course also allows for the opportunity to apply theory to life situations and personal experiential discovery.

HSCI 4550 - Complementary Healing Methods

3 Credits
A survey course which presents an overview of the history, theoretical bases, applications, resources, and trends of complementary healing methods. The evolution of Western scientific thought and Eastern medical theories is examined as a basis for understanding current health perspectives and treatment modalities. The course is not intended as an endorsement of any of the methods studied.

HSCI 4560 - Women's Health Care Issues

3 Credits
Selected women's issues are explored from a historical, psychological and socio-political focus in order to increase understanding of the experience and impact on the woman, her significant others, health care professionals and the health care system.

HSCI 4580 - Physical Activity and Public Health

3 Credits
The impact of physical inactivity on individuals and society. Students will learn the components of physical activity, demonstrate knowledge of physical activity assessment techniques, and be able to apply theory for physical activity promotion in various settings. Meets with HSCI 5580.

HSCI 4590 - Concepts of Health and Disease

3 Credits
Provides background and rationale for the dynamic biological, sociological and spiritual influences on health and illness and dimensions of illness that affect the individual and family. Implications of long-term catastrophic illness and life threatening illnesses are addressed. Approved for Compass Curriculum requirement: Writing Intensive. Prer., BIOL 2010 and BIOL 2020; Health Sciences majors, Nursing majors, Nutrition minors, or Health and Wellness minors only, or permission of instructor.

HSCI 4600 - Fitness and Wellness Concepts

3 Credits
Introduces the concepts and frameworks for health promotion and fitness. Provides an overview of factors influencing wellness of individuals, families and society. Prer., BIOL 2010, BIOL 2020, HSCI 1100, and HSCI 3010. Meets with BIOL 4030 and BIOL 5030.

HSCI 4610 - Sports Injuries and Prevention

3 Credits
Current methods in prevention, recognition, and management of physical activity and

sport-related injuries. Prer., BIOL 2010, BIOL 2020. Meets with BIOL 4230 and BIOL 5230.

HSCI 4620 - Internship in Health Sciences

1-10 Credits
Provides a clinical opportunity within the community to develop and apply sports medicine concepts. Fieldwork will be supervised in public and private agencies and institutions. Req., HSCI 3520, Junior/Senior status. Health Sciences majors only or permission of instructor.

HSCI 4640 - Program Planning

3 Credits
This service learning course provides introductory knowledge for planning and developing health promotion programs. Delineates criteria for development of health related programs and addresses ethical and legal issues in health promotion and education. Content includes issues related to community assessment and mobilization, marketing and adapting to diverse audiences in a variety of settings. Prer., HSCI 3201; Health Sciences majors or Health and Wellness minors only.

HSCI 4650 - Health Coaching

3 Credits
This course involves learning how to create supportive, effective coaching relationships by learning to use coaching skills, goals, and processes with clients individually or by group in consumer, corporate, healthplan, hospital, physician practice or health club settings. Prer., Health Science majors, Senior standing.

HSCI 4670 - Health Assessment

3 Credits
Provides the knowledge and skills necessary for holistic health assessment of individuals. Includes parameters for physical, emotional, spiritual and social assessments. Ethical implications of assessment and findings are explored. Introduces the variety of tools to facilitate health assessment and documentation of findings. Approved for Compass Curriculum requirement: Writing Intensive. Prer., BIOL 2010 and BIOL 2020; or BIOL 4350 and prer./coreq. BIOL 4360; Health Sciences majors only.

HSCI 4680 - Health Promotion and Wellness

3 Credits
Introduces the concepts and a framework for health promotion in a pluralistic society. Provides an overview of factors influencing health promotion behaviors of individuals and families. Introduces the student to models and theories related to health behavior and provides a framework for assisting the person or family to adapt or to cope with change.

HSCI 4730 - Community Network Development

3 Credits
Focuses on the assessment, purpose and development of community networks. Methods and types of partnerships and collaborative relationships are explored. Students are involved in assessing community resources, coalitions and existing networks. Prer., HSCI 2000, HSCI 2450 or permission instructor.

HSCI 4740 - Aging, Physical Activity & Health

3 Credits
Promotes understanding of the role that physical activity plays in decreasing disability in the later years and focuses on how to provide safe, effective physical activity programming and health promotion for older adults. Meets with HSCI 6740.

HSCI 4760 - Adapted Physical Activity, Recreation, and Sport

3 Credits
Covers how to safely and effectively work with people with disabilities, chronic health conditions, and other special needs in physical activity settings. How to assess individuals and environments, make appropriate modifications, and secure adequate programming support for people with special needs. Prer., PSY 3620. Meets with HSCI 5760.

HSCI 4810 - Allied Health Completion Capstone

1 Credit
Assists students in synthesis and integration of program content through application of knowledge and skills to current and future career aspirations in an allied health field. This course is taken in the final semester of the student's program. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., HSCI 3201, HSCI 3520, and HSCI 3630; prer. or Co-Req., HSCI 4010. Allied Health Completion Option students only.

HSCI 4820 - Nutrition, Exercise, and Health in Women

3 Credits
An advanced course in nutrition and exercise as they pertain to health and performance in women. This course will provide theoretical knowledge and practical skill to students working with women in the context of exercise, physical activity, and nutrition. Prer., HSCI 2070 or similar course; CHEM 1301; BIOL 3000 preferred. Meets with HSCI 5820.

HSCI 4830 - Intervention Methods & Strategies

3 Credits
The purpose of this course is to examine a variety of health interventions, discussing factors influencing operationalization of behavior change theory to practical methods and strategies. Ethical, political, economic, logistical, and practical implications of methods and strategies will be covered. Prer., HSCI 3201.

HSCI 4840 - Program Evaluation

3 Credits
This course is designed to provide students with a rudimentary understanding of the concepts of program evaluation, specifically related to community-level programs. Topics include logic modeling, evaluation frameworks, logistical and practical considerations, and design/analysis. Prer., HSCI 2060, HSCI 3201, HSCI 4640. Health Science Majors only.

HSCI 4890 - Special Topics:

1-3 Credits
Investigations into selected topics related to Health Sciences not included in the regular curriculum.

HSCI 4910 - Dietetic Internship Application Process

1 Credit
This course is designed to assist students with the dietetic internship application process. Emphasis is on researching dietetic internships and completing the DICAS application and DPD portfolio.

HSCI 4920 - Nutrition Assessment

3 Credits
Introduces students to the complex elements of nutrition assessment across the lifespan, including the nutrition care process. Includes socioeconomic, cultural and psychological factors influencing nutrition. Prer., HSCI 2070 or BIOL 2050, HSCI 4080; coreq. or prer., BIOL 4830 or CHEM 4211; coreq., HSCI 3920, HSCI 3940, HSCI 3950. Nutrition option majors only

or Nutrition minors with permission of instructor.

HSCI 4930 - Medical Nutrition Therapy I

3 Credits
Provides the pathophysiology, assessment, management and interventions of common acute and chronic diseases of the general population. Approved for Compass Curriculum requirement: Writing Intensive. Prer., HSCI 4920 and CHEM 4211 with a grade of "C" or higher; coreq. or prer., HSCI 4430. Health Sciences majors or Nutrition minors or Sports Health and Wellness minors only.

HSCI 4940 - Nutrition Practicum

4 Credits
Practical experiences observing and working in community settings applying clinical nutrition, community, and food service components in a variety of settings. Approved for Compass Curriculum requirement: Summit. Prer., HSCI 3920, HSCI 3940, HSCI 3950, HSCI 4020, HSCI 4920, HSCI 4930. Health Sciences majors only or permission of instructor.

HSCI 4950 - Exercise Testing and Prescription

4 Credits
Emphasis on risk stratification, assessment procedures, physiology of prescription and general exercise prescription principles. Upon successful completion of the course, students will have knowledge/skills necessary to obtain professional certification through the American College of Sports Medicine or other highly reputable certifying organization. Approved for Compass Curriculum requirements: Summit; Writing Intensive. Prer., HSCI 4670, Adult CPR; Health Sciences majors or Nutrition minors or Sports Health and Wellness minors only, or permission of instructor.

HSCI 4960 - Medical Nutrition Therapy II

3 Credits
A comprehensive study of medical nutrition therapy recommendations for prevention and treatment of disease and promotion of health. Includes nutrigenomics, enteral and parenteral nutrition support, cancer, HIV/AIDS, liver, renal, and pulmonary diseases, metabolic stress, food allergies and intolerances, and metabolic disorders. Approved for Compass Curriculum requirement: Writing Intensive. Prer., HSCI 4930 with grade of C or higher; coreq. or prer., HSCI 4440. Health Sciences majors or Nutrition minors or Sports Health and Wellness minors only.

HSCI 5020 - Qualitative Research

3 Credits
This course will introduce the philosophical assumptions undergirding qualitative research, define the role of the researcher, and engage with the methods used to guide data collection, data analysis, and the reporting of research findings. Prer., Graduate status, or Junior/Senior status with consent of instructor.

HSCI 5030 - Sports Specific Training Principles and Techniques

3 Credits
Theory and practice of designing and administering strength training and conditioning programs for athletes. Emphasis will be placed on the sport specific nature of such programs. Prer., Health Science graduate students or consent of instructor. Meets with HSCI 4030.

HSCI 5050 - Obesity and Weight Management

3 Credits
Focuses on the etiology, treatment, and prevention of obesity in a variety of populations. Emphasis is placed on the role of diet, exercise, behavioral treatment, and prevention. Topics also include pharmaceuticals, bariatric surgery, supplements, and childhood obesity. Prer., HSCI 2070. Graduate students only. Meets with HSCI 4050.

HSCI 5060 - Advanced Sports Nutrition and Metabolism

3 Credits
An advanced course in human metabolism with focus on nutrition, exercise, performance, and health. Covers metabolism and energy balance, macro- and micronutrients, and fluid balance applied to exercising individuals and athletes using nutritional interventions to promote health and human performance. Prer., HSCI 2070, HSCI 4010, and BIOL 3300. Meets with HSCI 4060, BIOL 4770, and BIOL 5770.

HSCI 5070 - Pathophysiology Laboratory

1 Credit
Focuses on how cells, tissues, and organs respond to injury. This response will correlate changes in structure and function. This lab provides an image of disease through tissues and cells. Prereq. or Coreq., HSCI 4080 or HSCI 5080.

HSCI 5080 - Pathophysiology for the Health Sciences

3 Credits
Study of disease by organ system using four core principles of pathology: etiology, pathogenesis of the disease, structural consequences and the resulting functional consequences. Prer., Undergraduate courses in anatomy and physiology and cell biology preferred. Graduate students only. Meets with HSCI 4080.

HSCI 5200 - Applied Health Promotion Technology

3 Credits
This class serves as a primer on some of the technologies that are available for health promotion. Req., Grad level only.

HSCI 5350 - Advanced Function Human Anatomy

4 Credits
A functional approach to human anatomy focusing on musculoskeletal structures, how they are arranged and interact to achieve performance, adapt, sustain trauma and repair, and structural and functional analysisof the cardiovascular, respiratory, digestive, endocrine and reproductive systems. Open to graduate level only. Meets with BIOL 4350 and BIOL 5350.

HSCI 5490 - Exercise Considerations for Special Populations

3 Credits
Practical and theoretical exercise programming for development with special needs individuals, focusing on managing chronic conditions and disabilities across the lifespan. Meets with HSCI 4490. Preq., Health Sciences graduate students only.

HSCI 5580 - Physical Activity and Public Health

3 Credits
The impact of physical inactivity on individuals and society. Students will learn the components of physical activity, demonstrate knowledge of physical activity assessment techniques, and be able to apply theory for physical activity promotion in various settings. Prer., Graduate students only. Meets with HSCI 4580.

HSCI 5600 - Biomechanics of Musculoskeletal Injury

3 Credits
A comprehensive survey of the biomechanics of musculoskeletal injury. The course explores the various bases of musculoskeletal injury to understand causal mechanisms, effects of injury on tissues, and how biomedical sciences contribute to injury management and prevention. Meets with BIOL 4600 and BIOL 5600.

HSCI 5760 - Adapted Physical Activity, Recreation, and Sport

3 Credits
Covers how to safely and effectively work with people with disabilities, chronic health conditions, and other special needs in physical activity settings. Discusses how to assess individuals and environments, make appropriate modifications, and secure adequate programming support for people with special needs. Prer., PSY 3620. Meets with HSCI 4760.

HSCI 5770 - Human Metabolism

3 Credits
An advanced course in exercise physiology/biochemistry. Topics involve extensive review of scientific literature. These topics involve a review of current trends in sports science and are designed to give the student a practical application and interpretation of the sports sciences. Prer., BIOL 3300. Meets with BIOL 4770 and BIOL 5770.

HSCI 5820 - Nutrition, Exercise, and Health in Women

3 Credits
An advanced course in nutrition and exercise as they pertain to health and performance in women. This course will provide theoretical knowledge and practical skill to students working with women in the context of exercise, physical activity, and nutrition. Prer., HSCI 2070 or similar course; CHEM 1301; BIOL 3000 preferred. Meets with HSCI 4820.

HSCI 6010 - Graduate Seminar

1 Credit
Focus is on the orientation and development of the new graduate student. Course will cover graduate school policy, involvement and ethics in research, networking, and professional development. Health Science graduate students only.

HSCI 6020 - Health Risk Management

3 Credits
Examination of current scientific evidence demonstrating how lifestyle affects chronic disease processes. Emphasis is on the prevention, management, and treatment of chronic disease from a lifestyle perspective. Prer., Graduate students only.

HSCI 6030 - Fitness and Wellness in the Workplace

3 Credits
An in-depth examination of worksite health promotion programming, evaluation, and methods. Emphasis is on the importance of worksite health promotion in the business setting.

HSCI 6040 - Theories in Health Behavior I

3 Credits
Advanced evaluation and application of the theoretical and psychosocial aspects of changing health-related behaviors at the individual and community level. Focus is on the professional skills and knowledge of changing health behaviors. Prer., Graduate students only.

HSCI 6050 - Advanced Evaluation of the Lower Extremity

3 Credits
Course involves an advanced detailed examination of lower body evaluation techniques for athletic individuals. Includes the lumbar spine and sacroiliac joint. Prer., Admission to the Master of Sports Medicine program or consent of instructor.

HSCI 6060 - Theories in Health Behavior II

3 Credits
Advanced course examining principles and procedures to plan, implement, and evaluate health promotion and disease prevention programs.

HSCI 6070 - Health Promotion Practicum

1-6 Credits
Provides an opportunity to develop and apply health promotion concepts. Field work will be supervised in public and private settings. Prer., Graduate students only.

HSCI 6080 - Advanced Evaluation of the Upper Extremity

3 Credits
Course involves detailed examination of upper body evaluation techniques in athletic individuals. Includes the cervical and thoracic spine. Prer., Admission to the Masters in Sports Medicine or consent of instructor.

HSCI 6090 - Graduate Research Project

3 Credits
Allows students to develop advanced skills and knowledge of the research process. Students will complete an applied research project under the guidance of the project advisor. Prer., Consent of project advisor.

HSCI 6100 - Clinical Sport Nutrition and Research

5 Credits
This course focuses on sports and population-specific applications. Using evidence-based approaches in practical and clinical sports nutrition, students learn to apply their scientific knowledge to a variety of performance and fitness settings. Prer., HSCI 5060, BIOL 5850 or equivalent; Sports Nutrition graduate students only.

HSCI 6120 - Health Science Leadership

3 Credits
Focus is on the leadership and administrative development of the health professional and impact as a local and global citizen. Will include leadership styles, policy and procedure development, legal issues, hiring practices, communication skills, and personal and professional global impact. Prer., Graduate students only.

HSCI 6140 - Food, Culture, Community, and Health

3 Credits
This course focuses on the history and culture of food, how our lifestyle choices, including the way we eat, impact our planet, and what we can do to promote healthier and more sustainable communities. Prer., HSCI 2070, CHEM 1301. Meets with HSCI 4090.

HSCI 6150 - Health Science Internship

1-9 Credits
Provides an opportunity to develop and apply advanced health science concepts. Field work will be supervised in public and private settings. Prer., Graduate students only.

HSCI 6160 - Dietary Supplements

3 Credits
Exploration and discussion of the research addressing the role and use of dietary supplements, including herbal products, in nutritive health, including sports performance. Prer., Graduate students only.

HSCI 6170 - Special Topics in Health Sciences

1-4 Credits
Investigation into selected topics related to health sciences not included in the regular curriculum. Req., Graduate students only.

HSCI 6180 - Program Planning and Implementation in Health Promotion

3 Credits
Service-learning course. Provides advanced program planning and implementation skills, including constructing and conducting needs assessments, utilizing program planning theory and commonly used planning models, and the examination of practical considerations in community settings. Prer. or Coreq., HSCI 6040 and a statistics course. Graduate students only.

HSCI 6200 - General Principles of Disaster Public Health

3 Credits
Overview of public health disasters to provide a foundation leading to disaster responses and implementation. Addresses the education training required for professionals. Meets with HSCI 4480.

HSCI 6210 - Principles of Disaster Preparedness and Emergency Response

3 Credits
An overview of public health aspects of disasters, emphasizing preparedness and emergency response. Second course of four-part certificate. Meets with HSCI 4450.

HSCI 6220 - Program Evaluation in Health Promotion

3 Credits
This service-learning course provides advanced evaluation skills including tailoring evaluations, measuring and monitoring process, and assessing program impact and outcomes. Students will also assess efficiency of program reach, effectiveness, adoption, implementation, and maintenance. Prer., HSCI 6180 and HSCI 7030, or instructor permission. Graduate students only.

HSCI 6230 - Special Topics in Disaster Public Health

3 Credits
Covers special public health issues that apply to disasters. Includes segments on terrorism and insurgency, medico-legal disaster response, threat assessment, and risk analysis. Fourth course of a four-part certificate. Meets with HSCI 4470.

HSCI 6240 - Advanced Strength & Conditioning

3 Credits
Introduces advanced training programs to optimize sport and human performance for individuals and teams including exercise techniques focusing on adaptations to improve hypertrophy, force production, power development, speed, and agility. Prer., Graduate students only.

HSCI 6250 - Strength & Conditioning Practicum

1-6 Credits
This course is designed to aid the strength and conditioning specialist in application of advanced skills directed by professionals affiliated with the University of Colorado at Colorado Springs. Prer., Graduate students only; admission to the MSc in Sports Medicine, Strength and Conditioning track, or consent of instructor.

HSCI 6290 - Health Care Policy

3 Credits
Focuses on the knowledge and skills needed to effect change in health care policy and delivery. Advanced nursing practice is explored in the health care system focusing on financing, delivery and reimbursement models, regulatory issues, and the legal/ethical parameters. Emphasis is placed on empowerment and the development of leadership skills within the social/ political context of health care. Building collaborative interactions within systems is stressed as the policy-making process is studied. Prer., Graduate students only.

HSCI 6390 - Health Care Ethics and Law

3 Credits
A theoretical basis for ethical/legal decision-making as applied to contemporary situations encountered in health care settings. Prer., Graduate students only.

HSCI 6410 - Forensic Chemistry and Toxicology

4 Credits
Introduces the chemical science of forensic investigative techniques including the principles of biochemistry, toxicology, and serology. Open to graduate level students only. Prer., HSCI 6480, BIOL 1010, BIOL 1020, and CHEM 1020.

HSCI 6420 - Medical Preparedness and Response

3 Credits
The public health impacts of specific types of disasters will be discussed. Selected disasters will be covered. Meets with HSCI 4460.

HSCI 6600 - Health Behavior and Therapeutic Exercise

3 Credits
Application of health behavior theory to therapeutic exercise for injured athletes. Course will include advanced therapeutic exercise techniques for athletic related injuries and functional return to play progressions. Prer., Admission to MSc Sports Medicine or consent of instructor.

HSCI 6629 - Diagnostic Imaging for Athletic Trainers

3 Credits
Foundation of available diagnostic imaging techniques available to sports medicine practitioners in the assessment of sport-related injury and pathologies, including but not limited to X-rays, CT, angiography, fluoroscopy, DXA, MRI, and musculoskeletal ultrasound. Prer., admission to MSc Sports Medicine or consent of instructor.

HSCI 6630 - Manual Therapy for Athletic Trainers

3 Credits
Introduces the athletic trainer to the theory, skills, and clinical use of manual therapy in sport. Students will be involved in lecture and hands-on practice of techniques. Prer., Admission to MSC in Sports Medicine or consent of instructor.

HSCI 6650 - Health Coaching

4 Credits
This course involves learning how to create supportive, effective coaching relationships by learning to use coaching skills, tools, and processes with clients individually or by group in consumer, corporate, healthplan, hospital,

physician practice or health club settings. Preq., HSCI 6040; Graduate students only.

HSCI 6700 - Advanced Exercise Science

3 Credits
This course explores the scientific underpinnings of sport and exercise performance. Demonstrates the practical skills necessary for measuring and assessing various physiological and biomechanical metrics required for high-level performance. Prer., Graduate students only.

HSCI 6740 - Aging, Physical Activity & Health

3 Credits
Promotes understanding of the role that physical activity plays in decreasing disability in the later years and focuses on how to provide safe, effective physical activity programming and health promotion for older adults. Graduate students only. Meets with HSCI 4740.

HSCI 7000 - Health Science Thesis

1-6 Credits
Thesis. Prer., Health Science graduate students only.

HSCI 7020 - Research Methods

3 Credits
Develops skills in scientific inquiry through an understanding and utilization of research in practice. It requires the student to apply the research in process in a practice setting using different evaluation techniques. Prer., Health Science Graduate students only.

HSCI 7030 - Statistics

3 Credits
An introduction to statistical reasoning. Emphasis on practical application of traditional statistical methods. Topics include descriptive statistics, probability, binomial and normal distributions, estimation, and hypothesis testing for means and proportions. Additional topics may be selected from various parametric and non-parametric methods. Prer., Undergraduate statistics course, Health Science graduate students only. Laptop is required in class and purchase of a 6 month license of the software, SPSS Grad Pack, is required.

HSCI 9300 - Independent Study – Undergraduate

1-3 Credits
Arranged with a specific faculty member in an area of interest. Independent study can fulfill elective or core course requirements. Prer., Permission of instructor required.

HSCI 9400 - Independent Study – Undergraduate

1-3 Credits
Arranged with a specific faculty member in an area of interest. Independent study can fulfill elective or core course requirements. Prer., Permission of instructor required.

HSCI 9600 - Independent Study - Graduate

1-3 Credits
Arranged with a specific faculty member in an area of interest. Independent Study may fulfill elective or core course requirements. Prer., permission of instructor required.

HSCI 9990 - Candidate for Degree

0 Credits
Candidate for Degree

HUM - Humanities

HUM 3030 - Humanities: 1848, The Rise of Modernity

3 Credits
A year of political, industrial, artistic, and technological revolutions, 1848 is studied from such perspectives as Dickens' "Hard Times," Dumas' "Camille," the Realism of Courbet, the rise of the women's movement, the Communist Manifesto, and other visual, literary, and aural texts. The theme is the rise of modernity. Prer., ENGL 1410 or equivalent.

HUM 3110 - Film, Technology, and Culture

3 Credits
A study of film as a cultural medium through which people express anxieties and hopes, vent critical reactions against social norms and modes of behavior, and reflect on possible changes. Prer., ENGL 1410 or equivalent and Junior standing.

HUM 3130 - The Baroque

3 Credits
This is an interdisciplinary course focusing on world art and culture of the Baroque period. Issues and themes include the impact of political and religious absolutism, and the rise of modern science on theatre, literature, art, and music. Prer., ENGL 1410 or equivalent.

HUM 3140 - Mythologies

3 Credits
An examination of myths central to varying cultures and epochs as they are represented in different fields including music, art, literature, philosophy, film, politics, history, psychology, and popular culture.

HUM 3170 - Minority Voices

3 Credits
The voices which celebrate positions and oppositions in race, class, gender, culture, and sexual orientation. Selected literature, film, and artistic musical and historical documents. Analysis of social, political, and ethical concerns.

HUM 3990 - Special Topics in Humanities

3 Credits
The topic will vary by semester and a specific course may be cross-listed with a course in another department. Students should check Course Search on the UCCS website or the MyUCCS Portal each semester for specific topics. Approved for Compass Curriculum requirements: Navigate; Writing Intensive.

HUM 9400 - Independent Study in Humanities

1 Credit
Independent Study in Humanities is set aside for those students needing 1 credit hour in Humanities to satisfy the General Humanities Requirement. Permission of Director of Humanities is required.

ID - Interdepartmental Studies

ID 1020 - Undergraduate Research Academy Seminar

0 Credits
A zero-credit, interdisciplinary research seminar where members of the Undergraduate Research Academy meet monthly for professional development talks and research presentations by members. Prer., Membership in Undergraduate Research Academy.

ID 1030 - Fundamentals of Written/Oral Communication

3 Credits
Fundamentals of written and oral communication necessary for undergraduate academic success. The course focuses on three related components: strategies for writing expository essays; basic conventions of standard written English and oral communication competency. Enrolled students are participants in the pre-collegiate program at UCCS.

ID 1050 - Quantitative and Qualitative Reasoning Skills

3 Credits
Designed to bring incoming students up to a minimum competency in quantitative and qualitative skills. It includes such topics as logic arithmetic, graphing, statistics, problem solving skills, and algebraic skills. The course is one of the means to satisfy the Qualitative and Quantitative Reasoning requirement.

ID 2000 - Mathematics: A Human Endeavor

3 Credits
An introductory course in mathematics as a liberal art. Designed to demonstrate the beauty of mathematics, its methods and its place in human endeavors. Recommended for those who like the subject and for those who think they don't. This course is one of the means to satisfy Qualitative and Quantitative Reasoning requirement. Approved for LAS Humanities requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

ID 2050 - Beyond the Finite

3 Credits
Shows how infinity, which plays a key role in mathematics and many other areas of human endeavor, appears in arithmetic, geometry, foundations of analysis and the arts. Just as every intelligent person needs at least some acquaintance with discoveries of Einstein and Freud, one needs exposure to George Cantor's discovery of the infinite. Strongly recommended for natural science, math and math education majors, but can be expected to benefit everyone. Approved for LAS Natural Science area requirement.

ID 2500 - Special Topics

1 Credit
Ten-session lecture series designed to introduce students to a specific topic. Usually, each lecture is presented by a different person; most series are multidisciplinary. Pass/Fail only. Attendance at all sessions is required. May be repeated up to three times for credit.

ID 3210 - Emergence of Infinity in Arts and Sciences

3 Credits
This is a truly and fundamentally interdepartmental course, tracing the emergence of infinity in culture: in the arts, sciences, religions, and technology. Approved for LAS Natural Science area requirement.

ID 3660 - Non-Departmental Internship for Liberal Arts

1-6 Credits
Students gain practical work experience by exploring occupations or professions while contributing to the work of the agency. Structured, supervised on-the-job experience in student's area of interest. Students are jointly evaluated by minimum time requirement, internship supervisor, and professor. Instructor consent required.

ID 3700 - Art and Culture of Equatorial Africa

3 Credits
This truly interdepartmental course focuses on the emergence of the great art and original culture of equatorial Africa. Many cultures will be discussed and their original works, dating from the 10th century to the 20th century, demonstrated in class. Not only aesthetics but cultural functions of artifacts will be in focus in this unique course. Approved for LAS Global Awareness requirement.

ID 3710 - Great European Film Directors: A Historical View 1945-Present

3 Credits
A study of the history of cinema, through works of great European directors of post WWII period: from De Sica, Antonioni, Fellini, Pasolini, to Tarkovsky, Parajanov, Wajda, Jarman, and Greenway. Course would be a valuable elective for all Arts and Sciences majors. Approved for LAS Global Awareness requirement.

ID 3720 - Russian Avant-Garde Cinema: A Historical View, 1915-Present

3 Credits
A study of the history of nearly 100 years of Russian and Soviet cinema through works of great directors: Eisenstein, Tarkovsky, Paradjanov, Shepit'ko, and others; from 1910's through 1990's. Every 4-hour session includes a complete feature film, some rare and never released on video. A valuable elective for all Arts and Sciences majors. Approved for LAS Global Awareness requirement.

ID 3730 - Russian Art Cinema Today: A Historical View

3 Credits
An in-depth study of the latest page in the history of its best directors: classics, such as Ioseliani, Soluiror, Muratova, as well as young talented directors, bound to become classics tomorrow. Every 4-hour session includes a complete feature film, often unavailable commercially. Available elective for all Arts and Science majors. Approved for LAS Global Awareness requirement.

ID 3740 - Andrzej Wajda and Cinema of Poland

3 Credits
This course will present culture, history, political struggles, and triumphs of Poland through the prism of the National School of Cinema of Poland, which is often called the Cinema of Moral Concern. Andrzej Wajda. whose films span from 1954 through 2012, and who won the American Oscar for his career contribution, expressed in letters to Alexander Soifer his enthusiastic support and provided copies of his rare films especially for this course. Approved for LAS Global Awareness requirement.

ID 3750 - Cinema of Denmark

3 Credits
This course will present the history of the national cinema of Denmark through the work and life of its best directors: the classic Carl Theodor Dreyer, the well-known Lars von Trier, and new directors whose names for the most part are known only in the narrow circles of art cinema professionals. The Danish cinema has entered its renaissance when in 1995 a group of four directors announced the new movement Dogme 95, and made it right on their promise to create magnificent innovative cinema. Approved for LAS Global Awareness requirement.

ID 3760 - Kurosawa Akira and Post World War II Cinema of Japan

3 Credits
This course will present the history of the cinema of Japan through the work and life of its best directors, and first of all Kurosawa Akira,

whose genius put Japan on the world map of cinema when in the late 1940s his Rashomon took Europe and America by storm. Approved for LAS Global Awareness requirement.

ID 3770 - Michelangelo Antonioni and Post World War II Cinema of Italy

3 Credits
This course will present the history of the cinema of Italy through the work and life of its great directors, and first of all Michelangelo Antonioni, Federico Fellini, and Pier Paolo Pasolini, whose genius changed the way we perceive the world. Antonioni contributed to this course his rare early films and rare publications. Approved for LAS Global Awareness requirement.

ID 3780 - Yuri Norstein and the Great Art of Animation

3 Credits
Yuri Norstein is unique in the world of the arts. His films have twice won the title "Best Animation of All Time" (Olympic Games of Animation, Los Angeles, 1984; and Tokyo, Japan, 2003). He is a winner of Russia's highest creative prize, "Triumph," and numerous other prizes. Yuri Norstein and Alexander Soifer will teach this course together, covering not only animation goals and Norstein's techniques, but also giving a broad view of the arts from ancient times to the present. Approved for LAS Global Awareness requirement.

ID 3790 - Pier Paolo Pasolini and Post World War II Cinema of Italy

3 Credits
This course will present the history of the great cinema of Italy through the work and life of its best directors, and first of all Pier Paolo Pasolini, a poet, essayist, painter, screenwriter, actor, and film director. Other directors featured in the course include Luchino Visconti, Michelangelo Antonioni, Federico Fellini, Bernardo Bertolucci, and Giuseppe Tornatore. Approved for LAS Global Awareness requirement.

ID 3800 - Cinema of Ingmar Bergman and the Arts of Scandinavia

3 Credits
Thus truly interdepartmental course will feature a representative set of the 64 films directed by Ingmar Bergman. It will include a Swedish film, The Sacrifice, by Bergman's most beloved film director, Andrei Tarkovsky. It will also include a lecture on Scandinavian painters Munch, Nolde (German-Scandinavian as an artist), and others. Approved for LAS Global Awareness requirement.

ID 4010 - Honors Senior Roundtable: Sharing Passions, Sharing Perspectives

1 Credit
Seniors in their graduating semester will reflect on and share with others their passion for their major field, and perspectives as to why this field is important in the context of both the university and society at large. Prer., Consent of instructor required. Open to seniors in graduating semester, by invitation from major department Chair only.

ID 4100 - A Sense of Place

1-3 Credits
Focuses on the character of a particular place. An understanding of these places will be accomplished through an analysis of selected aspects such as history, culture, literature, art and geography.

ID 4450 - Creators of Mathematics: A Historic View

3 Credits
An introduction to the history of mathematics and its creators. Traces the lives and works of the greatest mathematicians of all time. Explores birth and discovery of new ideas. Designed for math, math education, and history majors but may also be a valuable experience for science and art majors. Meets with ID 5450 and HIST 4700.

ID 4460 - Emergence of Graph Theory: A Historical Exploration of a Mathematical Theory

3 Credits
Explores the emergence of Graph Theory through its history. Studies original pioneering papers and their creators. A valuable elective for math, math ed, history, physics and other majors. Prer., ID 1050, ID 2000, or consent of instructor. Meets with ID 5460.

ID 4500 - A Serious Course in Recreational Mathematics

3 Credits
An exciting, unique introduction to mathematics through the study of mathematical games, puzzles and competition with emphasis on the beauty, elegance, paradoxy, and ingenuity of mathematical ideas. As part of the course, students and instructor will organize the annual Colorado Mathematical Olympiad for Junior and Senior high school students. Meets with ID 5500.

ID 4800 - What Is Mathematics?

3 Credits
Demonstrates how mathematicians create new results in mathematics; how problems of high school geometry lead to open problems - to mathematical frontiers; how several areas of mathematics join together to solve a problem. Invaluable for math majors and math teachers as well as for all science and math education majors. Prer., High school algebra or ID 1050 and high school geometry. Meets with ID 5800.

ID 4850 - Geometric Insight in Combinatorial Mathematics

3 Credits
Geometric insight is a strikingly beautiful tool in mathematics. It demonstrates the power of visualization, experimentation, and imagination in combinatorial mathematics. Designed for math, math education, and natural science majors, but may be taken by anyone who enjoys mathematics. Prer., High school geometry.

ID 4900 - Mathematical Coloring

3 Credits
Shows how coloring can solve mathematical problems; traces ideas of coloring through geometry, combinatorics, number theory, and other areas of mathematics. Allows students to visit a "Studio of a mathematician." Invaluable for math majors and math teachers as well as science majors. Prer., High school geometry. Meets with ID 5900.

ID 4901 - Special Topics:

1-3 Credits
Special topics in Interdepartmental Studies. Topics will vary.

ID 4950 - Honors Capstone Seminar

3 Credits
This course is intended to demonstrate the student's ability to think critically and to engage in a project of active learning within the student's major field of studies. The seminar will integrate acquired knowledge and skills in a capstone project designed to produce upon its successful completion a sense of mastery

and intellectual accomplishment that goes significantly beyond classroom learning. May only be taken by students in the UCCS University and Mountain Lion Honors Programs or consent of instructor.

ID 4990 - Argonne Semester

6-12 Credits
Students apply to Argonne National Laboratories during their Junior year for acceptance into the long-standing Argonne Scientific research program for undergraduates. Prer., Acceptance by the Argonne National Laboratory and approval by the dean of college.

ID 5450 - Creators of Mathematics: A Historic View

3 Credits
An introduction to the history of mathematics and its creators, the greatest mathematicians of all time, their lives and their works, through birth and discovery of new ideas. Prer., ID 1050. Meets with ID 4450 and HIST 4700.

ID 5460 - Emergence of Graph Theory: A Historical Exploration of a Mathematical Theory

3 Credits
Explores the emergence of Graph Theory through its history. Studies original pioneering papers and their creators. A valuable elective for math, math ed, history, physics and other majors. Prer., ID 1050 or consent of instructor. Meets with ID 4460.

ID 5500 - A Serious Course in Recreational Mathematics

3 Credits
An introduction to mathematics through the study of mathematical games, puzzles, and competitions with the emphasis on the beauty, elegance, paradoxy, and ingenuity of mathematical ideas. As a part of the course, students and instructor may participate in organizing the Colorado Mathematical Olympiad. Prer., ID 1050 or consent of instructor. Meets with ID 4500.

ID 5800 - What is Mathematics?

3 Credits
Demonstrates how mathematicians create new results in mathematics; how problems of high school geometry lead to open problems-to mathematical frontiers; how several areas of mathematics join together to solve a problem. Invaluable for math majors and math teachers buy may be of interest to science majors or others who wish to have a better understanding of mathematics. Prer., High school algebra or I D 1050 and high school geometry. Meets with I D 4800.

ID 5850 - Geometric Insight in Combinatorial Math

3 Credits
Geometric insight is a strikingly beautiful tool in mathematics. It demonstrates the power of visualization, experimentation, and imagination in combinatorial mathematics. Designed for math, math education, and natural science majors, but may be taken by anyone who enjoys mathematics. Prer., High school geometry.

ID 5900 - Mathematical Coloring

3 Credits
Shows how coloring can solve mathematical problems; traces ideas of coloring through geometry, combinatorics, number theory, and other areas of mathematics. Allows students to visit a "Studio of a mathematician." Invaluable for math majors and math teachers as well as science majors. Prer., High school geometry. Meets with ID 4900.

ID 9400 - Independent Study: Undergraduate

1-3 Credits
Independent study in interdepartmental studies (Upper Division).

IECE - Inclusive Early Childhood Educ

IECE 1000 - Introduction to Inclusive Early Childhood Education

4 Credits
This course introduces the history, theoretical foundations, laws, guiding principles, and programmatic designs of best practices in inclusive early childhood education. This course includes 10 hours of field experience in local inclusive early childhood programs.

IECE 1010 - Diversity and Child Development

3 Credits
This course explores theories of child development and human diversity within dynamic family and societal structures. Connections are made to current practices in inclusive early childhood education to promote cultural competence in professional practice.

IECE 1020 - Learning Through Play

4 Credits
This course examines the essential role of play in development and learning for all children in inclusive settings. Emphasis is placed on the ways professionals promote and facilitate engaged, meaningful play with individuals and groups. Students will research and implement developmentally appropriate play-based practices in a 10-hour field experience in locally inclusive early childhood programs.

IECE 2000 - Collaborative Partnerships in Inclusive Early Childhood Education

3 Credits
This course analyzes collaborative partnerships and communications among interdisciplinary professional teams and families. Students will identify strategies for developing strong relationships among all partners involved in providing high quality inclusive care and education.

IECE 2050 - Early Childhood Leadership: Responsive and Inclusive Administration

3 Credits
This courses focuses on skills, dispositions, and practical strategies to strengthen leadership competencies in early childhood professionals. Current trends in state and national policies and best practices are explore through interactive sessions featuring direct connections with the early childhood education community.

IECE 3000 - Observation and Assessment for Inclusive Early Childhood Education

3 Credits
This course prepares early childhood educators to effectively utilize developmentally and culturally appropriate observation techniques and assessment tools with young children. Contexts and issues in observation, documentation, and assessment are reviewed along with a variety of evidence-based instruments and procedures. Requires concurrent enrollment with IECE 3020.

IECE 3010 - Early Language and Literacy Development 1: Birth-4

3 Credits
This course analyzes the development of language and emergent literacy skills in children from birth-4 years. Diversity in development across the language arts areas will be observed and assessed with a focus on designing

and implementing individually and developmentally appropriate language arts activities. Requires concurrent enrollment with IECE 3020.

IECE 3020 - Block I Practicum: Inclusive Birth-4

6 Credits
In this Block I Practicum students apply foundational knowledge, skills, and professional dispositions in inclusive early child care and education settings for infants and children through 4 years. Students focus on children's literature, language arts, and assessment methods during the 6 hours per week field placement. Prer., concurrent enrollment in IECE 3000, IECE 3010.

IECE 4000 - Math and Numeracy in the Early Childhood Inclusive Classroom

3 Credits
This course targets pedagogical content knowledge in early childhood mathematics and numeracy for all children. The focus is on helping to improve the student's ability to support children's mathematical development in the inclusive early childhood classroom.

IECE 4010 - Early Language and Literacy 2 (Ages 5-8)

3 Credits
This course analyzes the development of language and early literacy skills in children from 5 through 8 years. Assessment of individual literacy development and acquisition is explored as the basis for creating individually and developmentally appropriate literacy instruction. Requires concurrent enrollment in IECE 4030.

IECE 4020 - Creating Classroom Communities: Social & Behavioral Supports for Young Children

3 Credits
This course presents effective practices to create positive classroom environments that facilitate respectful problem solving and engender active engagement for all children. Students implement evidence-based strategies that promote classroom communities of respect, success, and positive socialization for children with diverse abilities.

IECE 4030 - Block 2 Practicum: Inclusive 5-8

6 Credits
In Block 2 practicum, students apply knowledge, skills, and professional dispositions with increasing competence in inclusive classroom settings for 5-8 year olds. Students focus on math, literacy, and guidance strategies during the 6-hours-per-week field placement. Coreq., IECE 4000 and IECE 4010.

IECE 4040 - Inclusive Student Teaching

10-10 Credits
In the full-time student teaching experience, students demonstrate the skills, competencies, and professional dispositions of the high-quality inclusive early childhood educator. Students demonstrate competency in all state and national standards through classroom practice and a summative professional portfolio. Prer., Instructor consent, concurrent enrollment in IECE 4050.

IECE 4050 - Inclusive Early Childhood Seminar

2 Credits
This course, taken concurrently with the Inclusive Early Childhood Professional Internship or Student Teaching, synthesizes students' academic and professional preparation. Students engage in reflective activities related to their own evidence-based practices in diverse inclusive early childhood settings. Prer., Instructor consent, concurrent enrollment in IECE 4040 or IECE 4060.

IECE 4060 - Inclusive Early Childhood Education Professional Internship

6-10 Credits
In this course students demonstrate the skills, competencies, and professional dispositions necessary to successfully engage in diverse inclusive early childhood settings. This includes competency in relevant state and national standards evidenced through field site placement and professional portfolio. Requires concurrent enrollment with IECE 4050.

IELM - Inclusive Elementary Education

IELM 1000 - Introduction to Inclusive Education

3 Credits
This course introduces the history, theoretical foundations, the law, and an introduction to programmatic designs to meet the broad range of needs of all young children. Includes 15 hours of fieldwork in local inclusive classrooms. Meets with IECE 1000.

IELM 1500 - Health and Physical Education for Elementary Teachers

3 Credits
This course provides an overview of physical education and health standards, with specific attention to how they are addressed in the elementary school curriculum. Instructional strategies are explored for the integration of movement and health concepts into other content areas.

IELM 2000 - Integrated Science I

3 Credits
This course introduces the exploration of major connecting themes in life sciences, earth science, and physical science. Concepts covered explore science topics through discussion, demonstrations, inquiry activities, hands-on laboratory activities, readings, and presentations.

IELM 2500 - Art and Music for Elementary Teachers

3 Credits
This course will focus on methods and materials for teachingi visual art and music as they relate to the growth and development of children. Emphasis will be on curriculum, methods, and strategies for prospective K-6 classroom teachers.

IELM 2700 - Project-Based Instruction

3 Credits
Project-Based Instruction (PBI) provides preservice teachers with a comprehensive examination of a different teaching style. PBI engages learners in exploring authentic, important, and meaningful questions of real concern to students across multiple subject areas. It promotes equitable and diverse participation.

IELM 3500 - Integrated Science II

3 Credits
This course expands upon the major themes in life sciences, earth science, and physical science introduced in IELM 2000. Concepts covered explore science topics through discussion, demonstrations, inquiry activities, hands-on laboratory activities, readings, and presentations.

IELM 3700 - Designing Transitions and Inclusive Futures

3 Credits
This course presents the transition process

from school to adult life and self-determination, and will focus on the development and implementation of inclusive school and community-based instruction for students of all ages. Service delivery models, issues, and intervention approaches are examined.

IELM 4025 - Teaching Elementary Mathematics

3 Credits
This course is an inquiry into mathematics teaching and learning which prepares pre-service teachers to plan standards-based lessons; plan instruction based on assessments of students' developing conceptual understanding; use varied instruction methods and strategies to meet diverse needs; and reflect on instruction.

IELM 4070 - Teaching Students with Complex Support Needs

3 Credits
This course provides the tools essential for the successful education of students with complex support needs. We will explore strategies that foster a student's meaningful participation in inclusive classrooms.

INFS - Information Systems

INFS 1100 - Microsoft Office Applications and Computer Basics

3 Credits
Comprehensive course that provides students with the knowledge and skills to successfully use computers in their studies. Focus is on the use of Microsoft Office (Excel, Word, PowerPoint, Access, and Outlook), as a tool for analyzing, documenting, and presenting information. Topics include basic computer, network, file management, and Web concepts. Excel formatting, addressing modes, formulas, functions, and charts are emphasized. Students will complete several assignments using Microsoft Office. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

INFS 2510 - Managing Network Interconnections

3 Credits
This is a lab-based course dedicated to working with networking devices. The principles and practice of configuring local and wide area networks are covered with a focus on business practices, software and hardware technologies, and internet working standards. Prer., Sophomore standing.

INFS 2950 - Topics in Information Systems

1-3 Credits
Experimental course offered for the purpose of presenting new subject matter in information systems. Course prerequisites will vary depending on topics covered.

INFS 3000 - Introduction to Management Information Systems

3 Credits
Study of how best to use computers in business. Shows students how information systems are used to support critical business operations and ultimately achieve strategic business objectives. The elements of information technology are studied and the application of information systems to specific business situations is discussed. Integral to the class,students undertake the automation of a business process as a practical application of information systems.Prer., INFS 1100, MATH 1040, QUAN 2010. Coreq., QUAN 2020. Junior standing, Business students only.

INFS 3070 - Foundations of Business Programming

3 Credits
Provides a comprehensive understanding of beginning programming with an emphasis on business applications. Logical design of algorithms is stressed with an investigation of both structured and object-oriented program design. Coding exercises in a common business programming language reinforce the concepts and methods. Prer., 2nd Semester Sophomores; Business students only.

INFS 3080 - Web-based Business Programming

3 Credits
Provides comprehensive understanding of integrating HTML, scripting languages, and database queries to construct web programs for internal operations and customer interfaces. Proficiency is developed as students design, code, and document integrative programs that bring together manipulation of networks, databases, and user interfaces in the web environment. Prer., INFS 3070, INFS 3400; Business Students only.

INFS 3400 - Database Concepts and Applications

3 Credits
Students are introduced to the fundamental concepts of database design and implementation including high level entity-relationship and object modeling, design, and coding via a Structured Query Language. This class involves heavy computer tools use and is regularly scheduled in a computer lab. Prer., INFS 3000; Business Students only.

INFS 3700 - Computer Networks and Telecommunications

3 Credits
Introduces students to the hardware, topology, and terminology aspects of computer networks and telecommunications. Students differentiate between the different networks, learn how they work, and learn business applications for networks. Includes the basics of data transmission and LAN protocols. Prer., Junior standing, Business Students only.

INFS 3750 - Information System Security Management

3 Credits
Organizations increasingly require assessing, planning, implementing and monitoring the mitigation of information security risks. At the very core are the actual system and network devices which store, manage, transmit and secure information. This course provides a working knowledge of issues, models, and techniques for safeguarding of operating systems and related components. Prer., INFS 3700 and College of Business Students Only.

INFS 3800 - Web Development

3 Credits
Topics include using HTML creating web pages, creating applets with Java, server development, server applications, and the web server/database interface. No credit for Information Systems majors.

INFS 3950 - Topics in Information Systems - Juniors

1-3 Credits
Experimental courses offered irregularly at the undergraduate level for the purpose of presenting new subject matter in information systems. Junior standing is required. Course prerequisites will vary depending upon topics covered.

INFS 4050 - Information Technology Integration

3 Credits
Design and technology considerations of building a complete system for an organization. The integration of data resources, computer networks, and program requirements are applied to develop a functioning system based on industry expectations. Prer., INFS 4100; Business Students only.

INFS 4100 - Systems Analysis and Design

3 Credits
Provides an introduction to systems analysis and design concepts, methodologies, techniques, tools, and perspectives essential for systems analysts to successfully develop information systems. Students will be exposed to both structured and object oriented methodologies of analysis, design, and implementation. Prer., INFS 3070, INFS 3400, INFS 3700, OPTM 3390; Business Students only.

INFS 4850 - Directed Research Project

3 Credits
Different phases of research investigating key issues in information systems. Students conduct a variety of analyses using SPSS-pc and work on real research projects. Focus on descriptive statistics, frequencies, crosstabs and measures of association, correlation analysis, regression analysis, and X-Y plotting. Knowledge of statistical methods and interest in information systems required. Prer., INFS 1100 and Junior/Senior standing.

INFS 4950 - Topics in Information Systems - Seniors

1-3 Credits
Experimental courses offered irregularly at the undergraduate level for the purpose of presenting new subject matter in information systems. Second semester Junior or Senior standing required. Course prerequisites will vary depending upon topics covered. Prer., INFS 3080; or instructor permission.

INFS 4960 - Internship in Information Systems

1-3 Credits
Undergraduate internship in information systems. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/senior business students only.

INFS 6000 - Information Systems

3 Credits
Introductory course. Students will learn what information systems are, how they work, and what purposes they serve. Students will also learn about data and information, decision making and the value of information. This course touches on such topics as trends in hardware and software, telecommunications, and databases. Also covered will be the integration of information with the organization, and what is required to manage the creation of information systems. Graduate business students only.

INFS 6090 - Information Systems

3 Credits
Introductory course. Students will learn what information systems are, how they work, and what purposes they serve. Students will also learn about data and information, decision making and the value of information. This course touches on such topics as trends in hardware and software, telecommunications, and databases. Also covered will be the integration of information with the organization, and what is required to manage the creation of systems. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

INFS 6900 - Special Topics in Information Technology

3 Credits
Designed both for IS majors and for persons who want to manage IT activities within a functional area, such as marketing or finance. Topics include the changing nature of information technology, managing information, strategic value of information systems, business process redesign, ensuring effective interaction of IS and client organizations, information technology planning, managing systems development and computer operations, managing end-user computing, decision support, group support and executive information systems, project management, recruitment, selection, placement, motivation, and performance evaluation, and the expanding universe of computing.

INFS 6960 - Internship in Information Systems

1-3 Credits
Graduate internship in information systems. Prer., Instructor and Dean approval.

INFS 9400 - Independent Study in Information Systems - Undergraduate

1-3 Credits
Independent study in Information Systems at the undergraduate level given with the consent of the instructor who directs the study and the dean. Prer., Junior/senior standing only and consent of instructor and dean.

INFS 9500 - Independent Study in Information Systems - Graduate

1-3 Credits
Independent study in Information Systems at the graduate level given with the consent of the instructor who directs the study and the dean.

INOV - Innovation

INOV 1010 - The Innovation Process

3 Credits
Overviews the key components in the innovation process and examples of major innovations throughout history. Examines the interdisciplinary nature of innovation. Includes group exercises focused on improving team dynamics, brainstorming, conceptual-block busting and other creativity and problem solving activities. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures.

INOV 1111 - iPhone and iPad Application Development

3 Credits
The course will include introducing and giving the students extensive hands on experience with tools such as Xcode and Interface Builder. Students will become familiar with Apple frameworks such as Foundation UIKit and will spend many hours with Apple's runtime language. Students will also become comfortable transferring innovative ideas into objective C.

INOV 2010 - Innovation Team: Analyze and Report

3 Credits
Sophomore level course emphasizing team projects, research, analyzing data, and reporting. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 3010 and INOV 4010. Approved for Compass Curriculum requirement: Writing Intensive. Prer., INOV 1010 and ENTP 1000.

INOV 2020 - Innovation Team: Analyze and Report

3 Credits
Sophomore level course emphasizing team projects, research, analyzing data, and reporting. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 3020 and INOV 4020. Prer., INOV 1010.

INOV 2100 - Technical Writing, Proposals, and Presentations

3 Credits
Technical writing course. Replaces ENGL 2090 for Bachelor of Innovation majors. Addresses five major types of technical writing: project reports, funding proposals, magazine and trade articles, technical reports, and journal articles. Includes peer review and critical assessments of others' writings. Prer., ENGL 1310 or ENGL 1410 or equivalents.

INOV 3010 - Innovation Team: Research and Execute

3 Credits
Junior level continuation of the teams course sequence with advanced participation in team projects including research, design, and execution. Teams are expected to meet outside of class hours, possibly with sponsor companies. Approved for Compass Curriculum requirements: Navigate; Writing Intensive. Meets concurrently with INOV 2010 and INOV 4010. Prer., INOV 2010.

INOV 3020 - Innovation Team: Research and Execute

3-4 Credits
Junior level continuation of the teams course sequence with advanced participation in team projects including research, design, and execution. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 2020 and INOV 4020. Prer., INOV 2010 or INOV 2020, and INOV 2100.

INOV 3100 - Building an Innovative Web Presence for Business

3 Credits
This course introduces developing a web presence that promotes and supports business. Emphasizing developing feature-rich sites, the course covers images, site mapping, division of content and layout, server-side scripting, dynamic content generation, content management, and database use. Software/languages include Dreamweaver, Firebug, HTML, CSS, JavaScript, Jquery, CGI, XML, PHP, and SQL. Prer., CS 1450 or GDD 2200 or the following two courses: INFS 3080 and INFS 3400.

INOV 3540 - iPhone and iPad Application Development

3 Credits
Programming iPhone and iPad applications using Mac iOS, XCODE, and Objective-C. Students will be taught how to write, install, and upload apps to the iTunes store. A broad understanding of object-oriented programming and knowledge of Mac iOS operating system is required. Students will need to own a Mac or be prepared to use the library Macs. A final project will be required. Prer., GDD 1200 or CS 1150 or INFS 3000 or instructor permission.

INOV 4000 - Independent Study in Innovation

1-3 Credits
An opportunity for students to study special topics in innovation, in collaboration with an instructor.

INOV 4010 - Innovation Team: Design & Lead

3 Credits
Senior level continuation of the teams course sequence with emphasis on design and leading team projects. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 2010 and INOV 3010. Approved for Compass Curriculum requirement: Writing Intensive. Prer., INOV 2100 and INOV 3010.

INOV 4020 - Innovation Team: Design & Lead

3-4 Credits
Senior level continuation of the teams course sequence with emphasis on design and leading team projects. Teams are expected to meet outside of class hours, possibly with sponsor companies. Meets concurrently with INOV 2020 and INOV 3020. Prer., INOV 3010 or INOV 3020.

INOV 4050 - Selected Topics in Innovation

3 Credits
Topics vary. Prer., Junior or Senior standing.

INOV 5050 - Selected Topics in Innovation

3 Credits
Topics vary. Prer., Graduate students only.

INOV 6050 - Selected Topics in Innovation

3 Credits
Topics vary. Prer., Graduate students only or permission of instructor.

INOV 6100 - Proposal and Technical Writing

3 Credits
This course addresses five major types of technical writing: funding proposals, project reports, magazine and trade articles, technical reports and journal articles. Includes peer review and critical assessment of others' writing. Students will work on actual funding proposals. Prer., Graduate standing or permission of the instructor required.

INTB - International Business

INTB 3600 - International Business

3 Credits
An introduction to international business. Examines legal, political, economic and cultural factors affecting international business operations. Utilizes contemporary issues to discuss major aspects of business planning, organization and control in an international context. Prer., FNCE 3050 or MGMT 3300 or MKTG 3000. Business students or Business Minors only.

INTB 4610 - Regional Business Environment Europe

3 Credits
Short-term study abroad. A series of international business seminars conducted abroad by management personnel of European companies. Insight is provided into the cultural, social, and political environments of each country visited. This is an intensive international business and travel experience. Prer., Instructor approval.

INTB 4611 - Regional Business Environment: Asia

3 Credits
Short study abroad. A series of international business seminars conducted abroad by management personnel of Asian companies. Insight is provided into the cultural, social, and political environments of each country visited. This is an intensive international business and travel experience. Prer., Instructor Permission.

INTB 4800 - International Management

3 Credits
Provides an overview of management and human resources issues related to international markets. Major topics covered are organizing operations, decision making and controlling, motivation and leadership across cultures, international labor relations, human resource selection and repatriation, and human development across cultures. Prer., MGMT 3300. Business students only. Junior standing.

INTB 4960 - Internship in International Business

1-3 Credits
Undergraduate internship in international business. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/senior business students only.

INTB 6100 - Managing in Global Markets

3 Credits
Designed to prepare students to anticipate global forces that impact present management. Examines the economic, the social-cultural, and the political/legal context of global management. Presents various concepts related to the internationalization process of the firm and frameworks related to global strategy. Graduate business students only.

INTB 6190 - Managing in Global Markets

3 Credits
Designed to prepare students to anticipate global forces that impact present management. Examines the economic, the social-cultural, and the political/ legal context of global management. Presents various concepts related to the internationalization process of the firm and frameworks related to global strategy. Distance MBA course. Tuition schedule differs from on-campus program. Graduate business students only.

INTB 6600 - Contemporary Topics in International Business

3 Credits
This seminar examines major contemporary issues in international business. Prer., Completion of all MBA preparatory courses or instructor approval.

INTB 6700 - International Field Project

3 Credits
May be an independent student research project, an international internship, or an international field study. Offered on an ad hoc basis and occasionally with a specific focus. Students must get instructor's approval prior to registration. Prer., BUAD 6900 or instructor permission.

INTB 6960 - Internship in International Business

1-3 Credits
Graduate internship in international business. Prer., Instructor and Dean approval.

INTB 6990 - Regional Business Environment Europe

3 Credits
Short study abroad. A series of international business seminars conducted abroad by management personnel of European companies. Insight is provided into the cultural, social, and political environments of each country visited. This is an intensive international business and travel experience. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Instructor approval. MBA & Graduate Business Cert. Only.

INTB 6991 - Regional Business Environment: Asia

3 Credits
Short study abroad. A series of international business seminars conducted abroad by management personnel of Asian companies. Insight is provided into the cultural, social, and political environments of each country visited. This is an intensive international business and travel experience. Distance MBA course. Tuition schedule differs from on-campus courses. MBA and Graduate Business Cert only. Prer., Instructor permission.

INTB 9400 - Independent Study in International Business

1-4 Credits
With the consent of the instructor who directs the study and the dean. Prer., permission of instructor.

INTB 9500 - Independent Study in International Business

1-3 Credits
With the consent of the instructor who directs the study and the dean.

ITAL - Italian

ITAL 1010 - Beginning Italian I

4 Credits
Essentials of basic Italian, oral-aural skills stressed with additional reading, writing, and grammar.

ITAL 1020 - Beginning Italian II

4 Credits
Essentials of Italian continued. Additional oral-aural skills practice with increased grammar, reading, and writing. Prer., ITAL 1010 or equivalent.

ITAL 2110 - Intermediate Italian I

4 Credits
Italian at the intermediate level with concentration on conversation, culture, and civilization, or literature at that level. Prer., ITAL 1020 or equivalent.

ITAL 3500 - Italian Film

3 Credits
An examination of Italian film from its beginnings to the contemporary era, with special emphasis on neorealism and post-neorealist styles. The course approaches ideological, discursive, gender, and social issues articulated in works by Blasetti, DeSica, Visconti, Fellini, Pasolini, Antonioni, Wertmuller, Scola, and other directors. Prer., FILM 1000, FILM 2000, or instructor consent. Meets with FCS 4000 and FILM 4000.

JOUR - Journalism

JOUR 1000 - Contemporary Mass Media

3 Credits
Examines the mass media and their interaction with society, looking at journalism and the mass media in historical, intellectual, political, and social contexts. Meets with COMM 1000.

JOUR 2900 - Writing for the Media

3 Credits
Fundamentals of new gathering and writing news story forms. Meets with COMM 2900.

JOUR 6660 - Media Ethics

3 Credits
Selected topics in the area of journalistic ethics and issues. Students examine current theory and practice in journalism and apply these concepts to simulated communications problems. Topics vary each semester; examples include media ethics and social problems from cases in advertising, news and entertainment programming.

JPNS - Japanese

JPNS 1010 - Beginning Japanese I

5 Credits
Skills in listening to and speaking Japanese. Emphasis on useful expressions with cultural orientation. Hiragana and Katakana.

JPNS 1020 - Beginning Japanese II

5 Credits
Continued skills in listening to and speaking Japanese. Reading and writing intensified with further study of Hiragana and basic Kanji. Prer., JPNS 1010 or equivalent.

JPNS 2110 - Intermediate Japanese I

5 Credits
Conversational Japanese at the intermediate level. Reading and writing with additional study of Kanji. Prer., JPNS 1020 or equivalent.

JPNS 2120 - Intermediate Japanese II

5 Credits
Japanese at the advanced intermediate level. Speaking, reading and writing with additional study of Kanji. Prer., JPNS 2110 or consent of instructor.

JPNS 3000 - Advanced Japanese I

3 Credits
Advanced Japanese language with emphasis on grammar review, written exercises and composition. Prer., JPNS 2120 or equivalent.

JPNS 3010 - Advanced Japanese II

3 Credits
Advanced Japanese language. Emphasis on conversation and composition based on readings in literature and culture. Prer., JPNS 3000 or equivalent.

JPNS 3200 - Japanese Culture and Civilization

3 Credits
Elements of history, culture, art, music and rituals of the Japanese experience. Meets with FCS 3220.

JPNS 3210 - Special Topics in Japanese

3 Credits
Varying topics dealing with Japanese art, literature, and socio-cultural studies. Taught in English. May be repeated for credit as long as topics are different. Meets with FCS 3210.

JPNS 9200 - Independent Study in Japanese

1-3 Credits
Selected topics in Japanese language, literature and culture. May be offered to meet specific student needs. May be repeated up to three times for credit. Prer., JPNS 1020, consent of instructor.

JPNS 9300 - Independent Study in Japanese

1-3 Credits
Selected topics in Japanese language, literature and culture. May be offered to meet specific student needs. May be repeated up to three times for credit. Prer., JPNS 2110, consent of instructor.

LAT - Latin

LAT 1010 - Beginning Latin I

4 Credits
Essentials of Latin. Elements of grammar, reading and writing.

LAT 1020 - Beginning Latin II

4 Credits
Continued study of Latin grammar with expanded reading and writing. Prer., LAT 1010 or equivalent.

LAT 2110 - Intermediate Latin I

4 Credits
Latin at the intermediate level. Readings in culture, civilization and literature. Prer., LAT 1020 or sufficient score on placement test.

LAT 2120 - Intermediate Latin II

3 Credits
Latin at the intermediate level. Review of Latin grammar and syntax. Readings in prose and poetry of Golden Age authors: Caesar, Cicero, Livy, Ovid, Horace, and Catullus. Prer., LAT 2110 or equivalent.

LAT 3110 - Classical Literature - Latin

3 Credits
Drawing on a basis in Golden Age Roman literature, the course will explore oratory, epic poetry and epistolary style, Latin prose and poetry by classical Roman authors such as Cicero, Virgil, and Ovid. Prer., LAT 2120 or equivalent. Meets with FCS 3650.

LAT 9300 - Independent Study in Latin

1-4 Credits
Selected topics in Latin. May be offered to meet specific student needs. May be repeated up to three times for credit. Prer., Consent of instructor.

LAT 9400 - Independent Study in Latin

1-3 Credits
Selected topics in Latin language, literature, and culture. May be offered to meet specific student needs. Prer., Consent of instructor.

LEAD - Leadership

LEAD 1000 - Historical, Philosophical, and Sociological Foundations of Education

3 Credits
Students examine the historic relationship between schools and society and the process of what it means to be educated and the role of the educator from a philosophical standpoint. The social impacts and transformative capacities of education will also be covered. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior.

LEAD 2110 - Profiles of Leadership

3 Credits
Creates insight relative to the breadth and depth of leadership potential within a multicultural society. Students are challenged to develop personal profiles of leadership based upon multiple factors including leadership theory and non-traditional forms of leadership. Prer., COMM 111 or equivalent.

LEAD 3000 - How College Students Develop

3 Credits
Students will examine various higher education student development theories, including racial, sexuality, intellectual, moral/ethical, personality, psychosocial, and career development. College retention theories as well as environmental factors in persistence and attainment will be explored.

LEAD 4000 - Principles of Student Leadership

3 Credits
Designed as a participatory class with a focus on leadership theories, styles of leadership, and strategies for successful student leadership. Topics included are conflict management, strategic planning, goal setting, leading leaders, leadership ethics, and other related topics. Meets with LEAD 5000.

LEAD 4110 - Experiences in Leadership

3 Credits
Leadership in the context of organizational management, the political arena, and social causes. Students organize expert discussion panels. Special issues include women and minorities in leadership. Students research and prepare their own leadership development programs with emphasis on application and skill development. Prer., COMM 1110 and LEAD 2110 or equivalent.

LEAD 4500 - Student Leadership Seminar

1-3 Credits
Offers opportunities for undergraduate students to discuss problems of practice in leadership, plan and implement service projects, and coordinate student leadership development activities. CLC Students only.

LEAD 4550 - Readings in Leadership

1-3 Credits
Selected readings for advanced study in a specific area of educational leadership or leadership studies. Prer., Consent of instructor.

LEAD 5000 - Intro to Leadership Studies

3 Credits
Designed as a participatory class with a focus on leadership theories, styles of leadership, and strategies for successful student leadership. Topics included are conflict management, strategic planning, goal setting, leading leaders, leadership ethics, and other related topics. Meets with LEAD 4000.

LEAD 5020 - Vision, Ethics, and Politics for School Leaders

3 Credits
Explore leadership theory, values, ethics, and politics inherent in the public education system, as well as personal beliefs relative to education and democracy. Personal educational philosophy and strategies facilitating vision, community, and common purpose are developed. Field work required. Prer., Graduate students only.

LEAD 5030 - Visions, Values, and Administration of Student Affairs

3 Credits
Explore personal vision and values, as well as, the professional values and assumptions that are inherent in the student affairs profession. And examine the administration, including the historical and philosophical foundations of student affairs at institutions of higher education. Prer., SAHE students only.

LEAD 5070 - Human Resources Management and Staff Development

3 Credits
Personnel practices, policy development, employee-employer relationships, employee contracts, due process procedures, collective bargaining, performance appraisal, hiring and dismissal processes, staff development, induction of new employees, legal implications of ADA, affirmative action, and sexual harassment are explored. Field work required.

LEAD 5090 - Role, Function, and Administration of Student Affairs in Higher Eduction

3 Credits
Examines the historical and philisophical foundations of student affairs at institutions of higher education, ways in which student affairs divisions/departments are organized and administered, the role of student affairs professional associations and current issues/trends in the field of Student Affairs. Prer., Student Affairs in Higher Educations (SAHE) students only.

LEAD 5110 - Culturally Responsive Practices in Higher Education

3 Credits
In this course, students will gain an understanding of historical and contemporary social inequalities in higher education at both the systemic and individual levels. Students will engage in self-reflection and acquire knowledge and skills in culturally responsive practices.

LEAD 5170 - Collaborative Leadership for Equity and Community Outreach

3 Credits
Examines how to collaboratively lead, support, and sustain equity in schools by identifying cultural understanding and bias, promoting appropriate pedagogical practices, developing strong community outreach programming, and providing just access to services and resources. Field work required.

LEAD 5210 - Counseling and Helping Skills in Higher Education

3 Credits
Examines counseling theories and theorists and the important role counseling plays in the field of student affairs. Students will also explore contemporary issues and trends related to providing services to various types of students. Prer., SAHE Students Only.

LEAD 5220 - Data-Driven Program Evaluation and Curriculum Assessment

3 Credits
Offers students an opportunity to explore various methods of evaluating school programs and assessing the effectiveness of curriculum. Field work is included in the requirements for this course. Prer., LEAD 5700 or approval of instructor.

LEAD 5230 - Instructional Leadership

3 Credits
This is a graduate level leadership course that provides an in-depth examination of the concept of instructional leadership for school leaders. It is based on current research and recommended practice. It includes an analysis of the elements of collaboration, change, curriculum, instructional practice, assessment of and for learning, use of data, instructional time, actionable feedback, professional development, and performance targets as they relate to leading learning communities.

LEAD 5250 - Creative Communication for School Leaders

2 Credits
Strategies for effective communication and its role in group process, organizational effectiveness, persuasion, and conflict including crite-

ria for effectiveness in communication are examined. Emphasis placed upon the role of technology and creativity in communication for leaders. Field work required.

LEAD 5260 - College Student Development Theories

3 Credits
Examines various theories of college student development, will include: racial, sexuality, intellectual, moral, ethical, personality, psychosocial, career development, and more. Students will also explore contemporary issues and trends related to providing services to various types of students. Prer., SAHE Students Only.

LEAD 5280 - Legal Issues in Higher Education

3 Credits
Examines the U.S. judicial system, as well as federal and state laws, and court cases that have particular significance for higher education. Special emphasis will be given to issues of importance in the field of student affairs. Prer., SAHE students only.

LEAD 5290 - Budgeting and Finance in Higher Education

3 Credits
Examines budgeting and finance in higher education organizations. Provides comprehensive coverage of management principles and functions. Management of budget and finance are studied. Prer., SAHE students only.

LEAD 5300 - Leadership and Leadership Development

1-6 Credits
Leadership principles, change process research, and role functions of Air Officer Commanders. Course specifically designed for USAFA cohort. Prer., Admission to counseling program, USAFA cohort.

LEAD 5310 - Student Services Program Development and Evaluation

3 Credits
Programs and services that fall under the student affairs umbrella are constantly evolving and vary from campus to campus. Students learn what the various programs/services are, how to decide which to offer, and how to evaluate their effectiveness and make changes when needed. Prer., SAHE students only.

LEAD 5450 - The Principalship

3 Credits
Examination of the principalship at elementary, middle, and high school levels based upon research and recommended practices. Analysis of instructional, organizational, political, and leadership challenges. Assessment of policies and principles guiding coordination of the instructional program. Field work required.

LEAD 5530 - Workshop in Leadership

1-4 Credits
Contemporary national, state, and local issues in education from the perspective of the education leader. An overview of current issues and trends in elementary and secondary education will be developed for reference, discussions, debates, and policy purposes.

LEAD 5540 - Advanced Topics in Leadership

1-4 Credits
In-depth analysis and application of leadership principles related to contemporary school issues.

LEAD 5550 - Advanced Seminar in Higher Education

3 Credits
Requires the completion of an independent study on a topic of particular interest or concern to student affairs. The topic and methodology are agreed upon by the faculty member and student. Requires the student to synthesize program knowledge and skills. Prer., SAHE students only.

LEAD 5600 - Social Foundations of Education Trends

3 Credits
Addresses schools and their place in society from a historical, philosophical, and sociological framework. Considers the ways schools have reflected the pervasive inequalities characteristic of American society, as well as the transformational capacity of education, and prospect for reform.

LEAD 5610 - Social and Cultural Foundations of Higher Education

3 Credits
Addresses the historical, social, and cultural development of American higher education. Examines the role of local, state, and federal governments and the influence of private foundations. Includes colonial origins of private institutions and changing demographics on campuses. Prer., SAHE students only.

LEAD 5650 - Special Topics in Foundations of Education

3 Credits
Includes topics about how the social structure of schools affects the process and purpose of education; how educational systems have developed historically; how status, race, class, and gender relations affect student experiences; and the origin, nature, and consequences of educational reform.

LEAD 5700 - Intro to Research and Statistics

3 Credits
Introduces measures of central tendency, variability, percentiles, standard scores, and correlation. Covers basic concepts in statistical inference, evaluating and using research, design and analysis of educational research, and critical evaluation of published research. Completion of research project required.

LEAD 5740 - Intro to Qualitative Research

3 Credits
Students will identify and discuss differing philosophical and interpretive frameworks in respect to knowledge and inquiry among qualitative researchers. Students will develop competency in various qualitative techniques of study design, approaches to inquiry, data collection, and analysis.

LEAD 5950 - Education Measurement

3 Credits
Introduces the basic principles of measurement and a survey of educational testing. Topics include item response theory, test development, standards-based tests, test modification, test score interpretations, classroom assessment and item analysis, and an overview of different types of tests. Prer., Graduate students only.

LEAD 6040 - Developing Collaborative School Communities

3 Credits
Leadership principles, change process research, and organizational theory applied to school research and administration. Strategies for facilitating collaborative decision making and change processes, building community,

and including and motivating diverse populations of stakeholders in program planning and evaluation. Field work required. Prer., Graduate students only.

LEAD 6050 - Financing Schools and Programs

3 Credits
Funding sources for public schools, procedures in financial planning, budgeting implications, and the relationship between costs and effectiveness are explored, including resource procurement, control of funds, accounting requirements, and payment procedures. Emphasis on management of building level budgets. Field work required.

LEAD 6120 - Educational Politics and Collaborative Communities

3 Credits
A study of models, concepts, and processes regarding the organization of the American public school system at the federal, state, intermediate, and local school district levels including the values, resources, and power structures of the local community. Field work required.

LEAD 6140 - Supervision and Evaluation of Instruction

3 Credits
The role of instructional leader facilitating instructional effectiveness toward student success. Evaluation and supervision strategies included are: data collection, data analysis, legal aspects, evaluation report writing, conferencing, goal setting, motivation, and focusing on student outcomes. Field work required.

LEAD 6400 - Legal Issues for School Leaders

3 Credits
Federal and state laws from statutes, key court decisions, and recent legal developments are studied. Governance challenges of American education with emphasis on the legal duties, rights, and restraints of principals and administrators are explored. Field work required.

LEAD 6820 - Practicum in School Leadership: The Principalship

3 Credits
A minimum of 300 clock hours of administration activities at the elementary, middle, and high school levels supervised by site mentors in varied settings with educationally, culturally, and socioeconomically diverse populations. Professional portfolio documents competencies required for program completion.

LEAD 6830 - Practicum for Student Affairs in Higher Education

3 Credits
Provides experiences in one of more areas of student affairs/services on a college or university campus. Placements are determined in cooperation with the coordinator of SAHE. Students complete 100 clock hours of supervised field experience, of which 40 hours must be in direct service to students. Prer., SAHE students only.

LEAD 6860 - Superintendent as Transformational Leader

3 Credits
Exploration of leadership challenges of the superintendency and central office administrators. Content is based upon Colorado licensure standards, NCATE curriculum standards, and AASA professional standards for the superintendency. Field work is required. Prer., Completion of Approved Principal Licensure Program.

LEAD 6870 - The Superintendent as Manager of Quality Systems

3 Credits
Exploration of management challenges of the superintendency and central office administrators. Content is based upon Colorado licensure standards, NCATE curriculum standards, and AASA professional standards for the superintendency. Field work is required. Prer., Completion of approved Principal Licensure Program or consent of instructor.

LEAD 6880 - Practicum in Central Office Leadership and the Superintendency

3-6 Credits
Minimum of 300 clock hours of central office administration activities supervised by site mentors in varied settings with educationally, culturally, and socioeconomically diverse populations. Professional portfolio documents required. Prer., LEAD 6860 and LEAD 6870.

LEAD 7000 - Master's Research Laboratory in Leadership

3 Credits
Laboratories organized by professors to engage students in ongoing research projects. Students extend and apply knowledge and skills developed in coursework. Open only to graduate students. Prer., LEAD 5220 and LEAD 5230, admission to master's program or consent of instructor.

LEAD 7100 - Intermediate Quantitative Research and Statistics

3 Credits
Students learn and apply advanced methods of analyzing data with an emphasis on the use and interpretation of descriptive and inferential techniques. Topics covered include repeated measures ANOVA, power, multiple correlation, and regression, ANCOVA, MANCOVA, Factor Analysis, and selected packaged statistical programs. Open to Phd students only. Prer., Introduction to Statistics or equivalent.

LEAD 7150 - Methods of Qualitative Research

3 Credits
Identify and discuss differing philosophical orientations in respect to knowledge and inquiry among qualitative researchers. Study traditions of qualitative research that have evolved within disciplines of anthropology, sociology, psychology, and organizational theory and critique various qualitative studies. Develop competency in various techniques for gathering, analyzing, and reporting qualitative data. Open to PhD students only. Prer., Introduction to Statistics or equivalent.

LEAD 7300 - Ethical Leadership and Democratic Values in a Multicultural Society

3 Credits
Examine critical elements of the development and maintenance of ethical behavior in organizations and institutions. Analyze the policies and practices of various organizations and institutions and critique alignment of declared corporate values with decisions and behaviors. Develop institutional and individual codes of ethics that align with professed democratic values. Open to PhD students only.

LEAD 7350 - Leadership, Power, and Authority in Educational Policy and Governance

3 Credits
Examine the process of developing policy from perceived need and analyze current educational issues from a policy perspective. Analyze the political relationships among P-16 educational systems, the communities they

serve, and governmental entities representing a larger democratic society. Assess the motivation of various political groups for affecting change in public policy. Develop a tool to evaluate policies relative to organizational goals and needs. Open to PhD students only.

LEAD 7550 - Readings in Leadership

1-3 Credits
Selected readings for advanced study in a specific area of Educational Leadership or Leadership Studies. Prer., Admission to Master's or PhD program or consent of instructor.

LEAD 7600 - Doctoral Research Laboratory in Leadership

3 Credits
Students participate in laboratories organized by professors to engage students in ongoing research projects, being challenged to extend and apply knowledge and skills developed in coursework as they partner with professors as researchers. Laboratories enable students to demonstrate required skills and knowledge, achieve program goals, and demonstrate progress toward candidacy. Open to PhD students only.

LEAD 8100 - Advanced Quantitative Research and Statistics

3 Credits
Students learn and apply advanced methods of developing and analyzing complex data sets through the application of appropriate statistical measures, including time series analysis, SEM, and HLM; and,develop skills to conduct and submit critical analyses of published research studies. Students also design, implement, and conduct research projects followed by the completion of professional-level research reports. Open to PhD students only. Prer., Intermediate Quantitative Research and Statistics or equivalent.

LEAD 8150 - Applications of Qualitative Research

3 Credits
Students apply tools of qualitative inquiry in the design and implementation of research studies and data analysis, including designing a research project, collecting data using various techniques, and demonstrating proficiency in analysis of those data. Students explore and apply appropriate techniques of qualitative data analysis. Open to PhD students only. Prer., Methods of Qualitative Research.

LEAD 8200 - Large-Scale Student Assessment

3 Credits
Assess and critique qualitative and quantitative large-scale student assessment models in the context of learning and assessment theory. Analyze the alignment of various large-scale student assessment programs with established student outcome standards and develop large-scale assessment studies with appropriate statistical models. Open to PhD students only. Prer., Intermediate Quantitative Research and Statistics or equivalent.

LEAD 8250 - Policy Analysis and Evaluation

3 Credits
Students investigate and apply methods of policy and program evaluation. They analyze the role of evaluation in policy and program development and implementation. The students also investigate appropriate methods of needs assessment as a function of policy development, program development, and the evaluation of their effectiveness. Open to PhD students only. Prer., Intermediate Quantitative Research and Statistics or equivalent.

LEAD 8300 - Leadership Excellence in Complex Organizations

3 Credits
Analyzes organizational metaphors and their application to educational organizations. Examines various theories on organizations and the role of process, structure, and communication in organizational effectiveness. Investigates the relationship between and among various systems. Students apply knowledge of adult human development and systems theory to organizational development and strategic planning. Open to PhD students only.

LEAD 8350 - The Economics of Education

3 Credits
Examines theories of economic models related to the relationship between human capital and education. Investigates and analyzes economic state and national policy affecting P-16 education and undertakes international comparisons of education and economic policy. Open to PhD students only.

LEAD 8600 - American and Comparative Foundations of Education

3 Credits
This course discusses the origin, evolution, and role of the American education system. Prospects for reform and the future of the P-20 American education system will be explored in light of international comparisons. The transformative capacities of education will be examined. Prer., Admission to the Leadership, Research, and Policy PhD Program.

LEAD 8990 - Doctoral Dissertation

1-10 Credits
During coursework students will complete 15 dissertation credits. After coursework students must be continuously enrolled with a minimum of 1 dissertation credit per semester during completion of the dissertation. A total of 30 hours of dissertation credit are required for program completion. Open to PhD students only.

LEAD 9500 - Independent Research in Educational Leadership

1-6 Credits
Independent investigation of topics of specific interest completed under guidance of a faculty member. Specifics of the investigation are a joint decision requiring a written research proposal. Used for degree purposes only upon written consent of an advisor. Prer., Consent of instructor.

LEAD 9990 - Candidate for Degree

0 Credits
Used only by students not registered for course work or independent research during the semester in which the student takes the comprehensive examination. Fulfills requirement for registration during the semester in which comprehensive is taken. No credit is earned.

MAE-Mechanical & Aerospace Engineering

MAE 1005 - Introduction to Machine Shop

3 Credits
Provides a general introduction to machine shop safety, tools, and operations.

MAE 1502 - Principles of Engineering

3 Credits
Introduces the field of engineering. Explores various technology systems and manufacturing processes to demonstrate how engineers use math, science and technology in an engineering problem solving process. The course also includes an examination of social and political

implications of technology. Prer., College of Engineering students only.

MAE 1503 - Introduction to Engineering Design

3 Credits
Problem-solving skills using a design development process. Models of product solutions are created, analyzed and communicated using computer-aided design software, including 2D orthographic projections and 3D isometric views, pictorial drawings, technical sketching, dimensioning, sectioning, working drawings, wireframe, and solid modeling. Prer., College of Engineering students only.

MAE 2007 - Introduction to Biology for Engineers

3 Credits
Introduction to cellular and molecular biology for non-biology majors. Topics include structural and functional characteristics of cells, biochemistry and cellular metabolism, cell reproduction, genetics, gene control, cellular communication, genomics and proteomics. Prer., College of Engineering students only.

MAE 2055 - Mech-Etronics I

4 Credits
A variety of methods are introduced for the analysis of simple circuits under both DC and AC operating conditions. Course progresses to advanced topics such as filter circuits and amplifiers. Laboratory sessions introduce common test equipment and reinforce theory. Prer., MAE 1503, MATH 1350, PES 1120; coreq., MATH 1360. College of Engineering students only.

MAE 2103 - Engineering Mechanics I

3 Credits
Force vectors, moments of force, equilibrium of a particle and rigid bodies, structural analysis and trusses, internal forces and shear, friction, center of gravity and mass, moments of inertial, virtual work, and kinematics of particles. Prer., MAE 1502, PES 1110; Coreq., MATH 2350; College of Engineering students only.

MAE 2104 - Engineering Mechanics II

3 Credits
Kinetics of particles, dynamics of systems of particles, dynamics of rigid bodies in two and three dimensions, free and forced vibrations with and without viscous damping. Prer., MAE 2103; Coreq., MATH 3400; College of Engineering students only.

MAE 2200 - Materials Engineering

3 Credits
Introduction to engineering materials emphasizing metals and alloys and including ceramics and plastics. Principles behind material development, selection, and behavior are discussed with special emphasis on relevance to load-bearing applications. The relationship between microscopic characteristics and their effect on macroscopic properties will be explored. The lab component will involve metallurgical testing and analysis of common material processing techniques. Prer., CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), MATH 1350, PES 1110. College of Engineering students only.

MAE 2301 - Engineering Thermodynamics I

3 Credits
First and second laws of thermodynamics. Properties, states, thermodynamic functions, entropy, and probability. Prer., MATH 1320 or MATH 1350; PES 1110; College of Engineering students only.

MAE 2302 - Applied Energy Systems

3 Credits
An applications-based course introducing thermodynamics for non-engineering majors. Concepts are taught through exploration of energy systems such as solar, wind, geothermal, weather, etc. Considers political, economic, environmental, sustainability, and other aspects to energy systems. Emphasizes a basic scientific understanding of energy and global considerations of energy applications. Prer., PES 1000, MATH 1040; College of Engineering students only.

MAE 3005 - Engineering Measurement Lab

3 Credits
Fundamental measurement techniques and processes for a variety of physical systems, including force, displacement and acceleration, stress and strain, temperature, and pressure. Data analysis techniques and the use of software for data capture and analysis. Prer., MAE 2055, MATH 3400, and either MATH 3810 or ECE 3610. College of Engineering students only.

MAE 3130 - Fluid Mechanics

4 Credits
Continuums, velocity and stress fields. Viscous and inviscid flows, laminar and turbulent flows, compressible and incompressible flows, internal and external flows. Hydraulic systems, buoyancy and stability. Stream functions, Navier-Stokes Equations. Experiments in thermodynamics and fluid mechanics. Requires preparation of laboratory reports and presentation of results. Prer., MAE 2104, MAE 2301, MAE 3005, ENGL 2090. College of Engineering students only.

MAE 3131 - Fluid Mechanics Laboratory

1 Credit
Laboratory experiments in thermodynamics and fluid mechanics. Requires preparation of laboratory reports and presentation of results. Prer., Graduate standing or consent of instructor. Prer., MAE 3005; coreq., MAE 3130; College of Engineering students only.

MAE 3201 - Strength of Materials

3 Credits
The theory and application of the fundamental principles of mechanics of materials, including stress, strain, mechanical properties of materials, axial load, torsion, bending, transverse shear, combined loadings, stress transformation, strain transformation, design of beams and shafts, deflections of beams and shafts, buckling of columns, and energy methods. Prer., MAE 2103, MATH 1360. Coreq., MAE 2200. College of Engineering students only.

MAE 3302 - Engineering Thermodynamics II

3 Credits
Applications of classical thermodynamics including analysis of gas and vapor cycles for power production and refrigeration, thermodynamic property relationships, psychrometrics and combustion. Prer., MAE 2301, College of Engineering students only.

MAE 3311 - Heat Transfer Laboratory

1 Credit
Laboratory experiments in thermodynamics and heat transfer. Requires preparation of laboratory reports and presentation of results. Prer., MAE 3005; coreq., MAE 3310; College of Engineering students only.

MAE 3320 - Biomass Energy Analysis

3 Credits
Analyzes energy production from biomass resources. Explores the fundamentals of development, energy yield, economics, production, and processing methods for herbaceous, biological waste and woody crops. Technologies covered include combustion, gasification, pyrolysis, fermentation, and anaerobic digestion. Value-added bio-refining products are also examined along with the environmental impacts of biomass energy. Prer., MAE 2301, College of Engineering students only.

MAE 3342 - Engineering Economy

3 Credits
Economic decision-making, professional ethics, business records, net worth and profit and loss calculation, engineering law and contract agreements. Prer., Junior or Senior standing, College of Engineering students only.

MAE 3401 - Modeling and Simulation of Dynamic Systems

3 Credits
Course presents basic concepts of dynamic behavior, and the analytic and computational techniques for predicting and assessing dynamic behavior. Modeling a basic system, compound system, dynamic stability and natural behavior and response to continuing and abrupt inputs are presented. Prer., MAE 1503, MAE 2055, MAE 2104, CS 1090, MATH 3400, and either MATH 3810 or ECE 3610. College of Engineering students only.

MAE 3501 - Machine Design I

3 Credits
Applied stress analysis and material strength theories for sizing and selecting materials of machine elements, failure and reliability. Selection of fasteners, bearings, gears, springs. Prer., MAE 2104, MAE 3201; College of Engineering students only.

MAE 4000 - Mechanical and Aerospace Engineering Seminar

1 Credit
This course is designed to expose undergraduate students to a wide range of mechanical and aerospace engineering topics, ranging from advanced research topics to student success topics such as technical writing and engineering ethics. The seminar will involve guest speakers from industry, government, and academic institutions discussing topics of interest to undergraduate engineering students. Prer., Junior or Senior standing, College of Engineering students only.

MAE 4020 - Numerical Methods with MATLAB

3 Credits
An introduction to applied numerical methods for engineering problem solving using MATLAB. Topics covered include root finding, optimization, solution of linear systems of equations, curve fitting, numerical integration and differentiation, and numerical solution of ordinary differential equations. Prer., MATH 3130, MATH 3400; College of Engineering students only.. Meets with MAE 5020.

MAE 4120 - Machine Design II

3 Credits
Kinematic theory of planar mechanisms; position, velocity and acceleration analysis, coupler curves, centrodes, analysis and synthesis of 4 bar linkage, engine dynamics. Prer., MAE 3501, MATH 3130; College of Engineering students only.

MAE 4130 - Intermediate Fluid Mechanics

3 Credits
Building off the concepts covered in Fluid Mechanics, introduces new topics including ideal fluid flow, viscous flow, and turbulence. Additionally, provides more in-depth examination of compressible flow and boundary layer theory. Prer., MAE 3130, College of Engineering students only.

MAE 4131 - Computational Fluid Dynamics

3 Credits
An overview of fundamental numerical solution methodsfor fluid flow problems as well as introduces commercial CFD software. Discretization techniques and solution algorithms for solving different equation types important to fluid dynamics will be studied. Prer., MAE 3130, College of Engineering students only. Meets with MAE 5131.

MAE 4135 - Aerodynamics

3 Credits
Airfoil and wing aerodynamics, thin airfoils, finite-span wings, compressible and incompressible flow, nozzle theory. Intro to numerical methods in aerodynamics. Prer., MAE 3130, College of Engineering students only.

MAE 4150 - Mechanical Vibrations

3 Credits
Modeling of a variety of vibrations found in engineering. Students will learn analytic methods, including general solutions to differential equations and eigenvalue methods. Extensive numerical modeling of vibrations will also be covered using MATLAB and Mathematica. Prer., MAE 2104, MAE 3005, MAE 3201, MAE 3401, MATH 3130, MATH 3400. College of Engineering students only.

MAE 4160 - Computational Analysis of Structures

3 Credits
The Finite Element Method will be introduced as a computational approach to both analyze and optimize structures. Students will implement basic FEA components in MATLAB and use a commercial software package for advanced applications. Prer., MAE 3201, MATH 3130, MATH 3400, CS 1090. College of Engineering students only, Graduate standing.

MAE 4210 - Fracture Mechanics

3 Credits
Fundamental concepts of structure failure. Stress intensity, energy criterion, cracking, and damage tolerance. Linear Elastic Fracture Mechanics: stress concentrations, Griffith energy, energy release rates, K/G and J-integrals, crack trip plasticity. Plane stress/strain, and mixed-mode failure. Prer., MAE 2102, MATH 3130, MATH 3400; College of Engineering students only. Meets with MAE 5205.

MAE 4310 - Heat Transfer

4 Credits
The principles of heat transfer: conduction, convection, and radiation. Steady-state and transientt conduction, thermal contact resistance, insulation, heat capacity. Forced and natural convection, velocity and thermal boundary layers, fluid flow. Radiation from blackbodies, surfaces and the sun. Experiments in thermodynamics and heat transfer. Design of experiments, report preparation and presentation. Prer., MAE 3005, MAE 3130, MATH 3130, MATH 3400, ENGL 2090.

MAE 4316 - Propulsion

3 Credits
Basic concepts of aerospace propulsion. Foundational concepts of thermodynamics, compressible flow, and boundary layer theory. Characteristics, operation and analysis of turbine engines. Characteristics, operation and analysis of rocket engines. Prer., MAE 2301,

MATH 3400; College of Engineering students only.

MAE 4320 - Sustainable Energy Systems

3 Credits
Application of energy systems with a focus on sustainability. Fundamentals of sustainability. Principles of sustainable applications in energy production. Energy system designs including (but not limited to) solar, wind, geothermal, and biomass. Fundamentals of economics and political ramifications of sustainable energy applications. Prer., MAE 3130; Coreq., MAE 3302; College of Engineering students only.

MAE 4402 - Intermediate Dynamics

3 Credits
Kinematics, relative motion, and rotation of particles and rigid bodies, including inertia tensors, Euler's angles and equations. Variational principles, work, energy expressions, and Lagrange's equations. Electrical circuits and electromechanical systems. Prer., MAE 2104, MATH 3130, MATH 3400. College of Engineering students only.

MAE 4405 - Human Kinetics

3 Credits
Forces and motion of human activities such as walking, running and sports. Anatomical overview of the musculoskeletal system, including joint classification and modeling. Static analysis of the musculoskeletal system. Forward and inverse dynamic modeling/analysis using rigid body and multi-link models. Prer., CS 1090, MAE 2104, MAE 3201; College of Engineering students only.

MAE 4410 - Fundamentals of Astrodynamics

3 Credits
Development and application of the fundamental principles of astrodynamics to satellite motion. Study of coordinate systems, time keeping, computation of orbits, and introduction to perturbation theory. Prer., MAE 2104, MATH 3130; College of Engineering students only.

MAE 4415 - Flight Dynamics

3 Credits
Advanced treatment of the flight dynamics of atmospheric flight vehicles and spacecraft. Rigorous development of non-linear equations of motion, including environmental and propulsive forces. Linearization via small-perturbation methods - limitations. Transient response, stability, natural modes. Intro to simulation techniques. Prer., MAE 3401; College of Engineering students only. Meets with MAE 5415.

MAE 4421 - Automatic Control of Aerospace and Mechanical Systems

3 Credits
Introduction to the automatic control of aerospace and mechanical systems. Aero/Mech systems modeling,aircraft/spacecraft; computational analysis via Matlab; frequency-domain techniques for analysis and synthesis; root-locus, Bode, Nyquist. Time-and- frequency-domain relationships. Mech/Aero System simulation. Prer., MAE 3401, MATH 3130, MATH 3400; College of Engineering students only.

MAE 4425 - Space Environment

3 Credits
Introduction to properties and effects of the environment in which spacecraft and astronauts must operate. Intensive coverage given to earth-sun-lunar system. Topics include earth's environment, ionosphere, atmosphere chemistry, radiation belts, magnetosphere, aurora, geomagnetic storms, celestial background, and recent bioastronautic effects. Prer., PES 1120, MATH 3400; College of Engineering students only. Meets with MAE 5091.

MAE 4450 - Robotics

3 Credits
Dynamics, kinematics, and automatic control of robotic devices. Force and position control, path planning. Prer., MAE 3401, MAE 4421, MATH 3130, MATH 3400. College of Engineering students only. Meets with MAE 5450.

MAE 4455 - Flight Mechanics

3 Credits
A fundamental study of the trajectory dynamics of aerospace vehicles operating in the atmosphere (aircraft and missiles). Rigid-body equations of motion; vehicle-carried coordinate systems; aerodynamic and propulsive forces; maneuvering flight; introduction to trajectory simulation. Prer., MAE 4135, MAE 4402, MATH 3130, MATH 3400. College of Engineering students only. Meets with MAE 5455.

MAE 4510 - Engineering Design I

2 Credits
Design principles with the realistic constraints of economy, safety, reliability, aesthetics, ethics and social impact. Project and team organization to meet design goals. Professional oral and written communication. Introduction to machining tools and processes. Prer., MAE 3005, ENGL 2090. College of Engineering students only, Senior standing. Meets with MAE 5510.

MAE 4511 - Engineering Design II

3 Credits
Project laboratory for the senior or graduate student for the design of a mechanical or electromechanical component, with emphasis on the identification, selection, design, and simulation or fabrication of the component. A successful project is required for completion of the course. Approved for Compass Curriculum requirement: Summit. Prer., MAE 4510; College of Engineering students only. Meets with MAE 5511.

MAE 4515 - Mechanical Engineering Technology

3 Credits
CAD/CAM in the design and manufacturing process, representation of curves and surfaces mathematically, solid modeling, fundamentals of CNC programming and rapid prototyping. Prer., MAE 1503, MATH 3130; College of Engineering students only. Meets with MAE 5515.

MAE 4610 - Design & Development of Medical Devices

3 Credits
Examines the design and development of medical devices. Topics include: engineering design process, human factors, biomaterials, quality control, clinical studies and regulatory bodies. Case studies illustrate successes and failures. Serves students and professionals interested in medical device related fields. Prer., MAE 3501; College of Engineering students only, Senior standing.

MAE 5011 - Engineering Analysis I

3 Credits
Advanced engineering mathematics, including series solutions for ordinary differential equations (ODEs), Laplace transforms, linear algebra, vector calculus, and Fourier series. Prer., Graduate standing or consent of instructor.

MAE 5012 - Engineering Analysis II

3 Credits
Topics of advanced engineering mathematics, including partial differential equations, complex number theory and analysis, power series, and conformal mapping. Prer., Graduate standing or consent of instructor.

MAE 5020 - Numerical Methods with MATLAB

3 Credits
An introduction to applied numerical methods for engineering problem solving using MATLAB. Topics covered include root finding, optimization, solution of linear systems of equations, curve fitting, numerical integration and differentiation, and numerical solution of ordinary differential equations. Prer., MATH 3130, MATH 3400. Meets with MAE 4020.

MAE 5050 - Product Design: Taking an Idea From Paper to Production

3 Credits
Covers all aspects of creating a consumer product from brainstorming to final packaging and marketing plan.Students will learn how to evaluate ideas from a business perspective to determine ultimate sales feasibility and how to prototype and design theirmarketable product. Prer., Graduate standing; juniors or seniors with permission.

MAE 5085 - Space Communications

3 Credits
Fundamentals of digital data transmission; noise characterizations and calculations; communications link calculations; error probabilities for basic digital modulation schemes - BPSK, QPSK, OQPSK, MSK, serial MSK; system degradations, carrier and clock recovery; multiple access techniques - FDMA, TDMA, CDMA; packet satellite networks; "Orbital" parameters; comparison of satellite communication systems with fiber optic links. Prer., PES 1110, MATH 1350 or equivalent.

MAE 5090 - Space Mission Operations

3 Credits
This course describes the relationship between the operations concept and the other elements of a space mission and covers the various functions associated with a space mission. These functions include mission planning, trajectory analysis, navigation, payload operations, spacecraft operations, data processing, communications, training, and management. Students learn how to translate mission objectives and requirements into a viable operations concept. The course covers key cost, technical, and schedule drivers and develops methods for determining key space mission operations design parameters (dataflow diagrams, orbit maneuvers, communication links, and spacecraft and payload commanding). Prer., MAE 4410/5410.

MAE 5091 - Space Environment

3 Credits
Introduction to properties and effects of the environment in which spacecraft and astronauts must operate. Intensive coverage given to earth-sun-lunar system. Topics include earth's environment, ionosphere, atmospheric chemistry, radiation belts, magnetosphere, aurora, geomagnetic storms, celestial background and recent bioastronautic effects. Prer., PES 1120 or equivalent and MATH 3400. Meets with MAE 4425.

MAE 5100 - Continuum Mechanics

3 Credits
Tensor analysis, index notation, deformation mappings, Eularian/Lagrangian frames, deformation tensors, linearization, body forces, stress tensors, balance laws, variational formulation, optimization, constitutive theory and modeling, thermodynamics, FEM, applications. Prer., MATH 2350, MATH 3130, MATH 3400, MAE 3201, MAE 3130.

MAE 5125 - Advanced Dynamics

3 Credits
Newton-Euler formulation of dynamic systems, including rigid body motion in three dimensions. Analytical dynamics, including Lagrange's and Hamilton's equations. Analysis of linear and nonlinear systems: modal analysis, Floquet theory, Liapunov's direct method, dynamical systems theory, and perturbation theory. Prer., MAE 4402, MATH 4470; Graduate standing in MAE or consent of instructor.

MAE 5130 - Incompressible Flow

3 Credits
This course will review the kinematics of fluid motion, the basic laws governing fluid flow, and the Navier-Stokes equations. Exact solutions to several important incompressible flow problems will be examined. Computational fluid dynamics (CFD) will be introduced. Prer., MAE 2301, MAE 3130, MAE 3302, MAE 3310. Coreq., MAE 5011. Grad standing or consent of instructor.

MAE 5131 - Computational Fluid Dynamics

3 Credits
Computational fluid dynamics (CFD) has become an industry standard, ranging from CFD solvers coupled with CAD packages such as Solidworks, to highly sophisticated standalone packages for advanced engineering applications (Fluent, Star-CCM, etc.). This introductory course provides an overview of the underlying numerical methods used in CFD: e.g., how we can solve the Navier-Stokes equations numerically. Students will utilize MATLAB and a commercially available CFD package: MATLAB to develop/implement a basic CFD program, providing insights and hands-on experience with the underlying methods used in CFD and the resulting limitations of CFD software; commercial software will be used to explore the broad range of enginering applications that can benefit from CFD analysis. Prer., MAE 3130, MATH 3130, MATH 3400, or graduate standing in MAE. Meets with MAE 4131.

MAE 5140 - Compressible Flow

3 Credits
Compressible flow dynamics are investigated including the conservation equations for inviscid and viscous flows. Study of shock and expansion waves including methods for solving scenarios involving high Mach number flows. High temperature gas dynamics will also be introduced. Prer., MAE 2301, MAE 3130, MAE 3302, MAE 3310; coreq., MAE 5011; Graduate students only.

MAE 5145 - Hypersonics

3 Credits
Hypersonic flow features, gas dynamics overview, propulsion system requirements, inviscid and viscous methods for predicting aerodynamic forces and moments, heating and shock-shock interactions, rarefied gas dynamics, hypersonic testing. Prer., MAE 2301, MAE 3310, Graduate standing or permission from instructor.

MAE 5146 - Computational Techniques in Rarefied Gas Dynamics

3 Credits
This course covers particle-based computational simulation methods for rarefied, high-speed flows. Includes molecular collision kinetics, molecular dynamics, Monte Carlo direct simulation, and related techniques. Prer., MAE 3130, MATH 3130, MATH 3400; Graduate standing in MAE.

MAE 5150 - Advanced Vibrations

3 Credits
A second course in vibrations covering the following topics: multiple-degree of freedom systems, undampedand damped, harmonic and forced, numerical solutions, continuous systems, and the finite-element method. Prer., MATH 3130 and MATH 3400; MAE 4150/5190.

MAE 5160 - Finite Element Analysis for Mechanics

3 Credits
An introduction to finite element analysis (FEA) procedures in mechanics, beginning with vectors, matrices and tensors, and continuing with formulation and calculation of FEA for solid mechanics, static and dynamic structural mechanics, heat transfer, electric fields, and incompressible fluid flow analysis. Students will do a significant amount of programming in the language of their choice. Prer., MATH 4470, MAE 4150/MAE 5190, and programming competency.

MAE 5165 - Microelectromechanical Systems (MEMS)

3 Credits
Integration of electrical and mechanical processes to design micromachines. Properties of materials. Structural design: fundamental mechanics, systems,and vibrations. Transducer and actuator principles. Sensor design integration and applications. Prer., MATH 3130, MATH 3400, MAE 4402 or MAE 5493, ECE 2220 or equivalent.

MAE 5167 - Mems Design and Fabrication Lab

3 Credits
Integration of electrical and mechanical design processes to build micro machines. Process design: wet chemical etching, wafer bonding, RIE and CMP. Surface micro machining. Sensor design integration and application. Prer., MAE 5165.

MAE 5201 - Solid Mechanics

3 Credits
Analysis of structures using fundamental concepts of continuum mechanics, theory of elasticity, energy principles, variational methods, and finite element analysis. Prer., Graduate standing or consent of instructor.

MAE 5205 - Fracture Mechanics

3 Credits
Fundamental concepts of structural failure. Stress intensity, energy criterion, cracking, and damage tolerance. Linear Elastic Fracture Mechanics: stress concentrations, Griffith energy, energy release rates, K/G and J-integrals, crack tip plasticity. Plane stress/strain, and mixed-mode failure. Graduate credit requires the solution and presentation of a class project. Prer., MATH 3130, MATH 3400 and MAE 2102. Meets with MAE 4210.

MAE 5210 - Advanced Fracture Mechanics

3 Credits
Review of linear elastic fracture mechanics. Dynamic fracture mechanics: arrest and branching, energy release rates, contour integrals, and examples. Elastic-plastic fracture mechanics, including Dugdale's model, J-integrals, CTOD, and mixed-mode failure. Introduction to computational technique. Prer., MAE 4210 and MATH 4470.

MAE 5301 - Advanced Thermodynamics

3 Credits
First and second laws of thermodynamics including heat transfer, work transfer, property relationships, and maximum entropy. Entropy generation including lost work, mechanisms, and minimization. Power plant, solar power, and refrigeration processes including thermodynamic formulation, maximum power, reversible and irreversible processes, and optimization. Entropy generation minimization. Prer., MAE 2301, MAE 3302, MAE 3130, MAE 3310. Graduate standing or consent of instructor.

MAE 5310 - Intermediate Heat Transfer

3 Credits
Fundamental treatment of conduction, convection, and radiation based on exact and numerical finite-difference/element solutions to the governing partial differential equations. Steady-state and transient conduction, laminar/turbulent boundary layer flows, radiation, and coupling between thethree modes of heat transfer. Prer., Graduate standing or consent of instructor.

MAE 5320 - Principles of Combustion

3 Credits
Fundamentals of combustion science and applications, including thermochemistry, heat and mass transfer, chemical kinetics, laminar premixed and diffusion flames, droplet evaporation and combustion, and associated environmental issues. Prer., MAE 2301, MAE 3130, MAE 3302, MAE 3310, CHEM 1401/1402 (formerly CHEM 1301 or CHEM 1030), MATH 3400.

MAE 5345 - Laser Application in Mechanical and Aerospace Engineering

3 Credits
This course will cover the interaction of atoms, molecules, and light, and how these physical processes are used to enhance mechanical and aerospace applications. Topics include: gaseous diagnostics, scattering, electrorestriction, acousto-optics, combustion analysis, precision positioning, weaponized lasers, and advanced technology. Prer., MAE 3130, MATH 3130, MATH 3400; Graduate standing in MAE or permission of instructor.

MAE 5391 - Rocket Propulsion

3 Credits
Basic theory of rocket propulsion, nozzle performance, propellant characteristics. Primary emphasis on the engine system design process, based on mission requirements. Chemical, as well as nuclear, electric, and advanced propulsion concepts are treated. Prer., MATH 3400 and MAE 2301.

MAE 5402 - System Dynamics

3 Credits
Kinematics, relative motion, and rotation of particles and rigid bodies, including inertia tensors, Euler's angles and equations. Variational principles, work, energy expressions, and Lagrange's equations. Electrical circuits and electromechanical systems. Prer., MAE 4402.

MAE 5410 - Astrodynamics

3 Credits
Rigorous development and application of the fundamental principles of astrodynamics to satellite motion. Study of coordinate systems, time keeping, computation of orbits, introduction to perturbation theory, Kepler's and Lambert's problems, linear orbit theory, patched conics method. Prer., MAE 4402 or consent of instructor.

MAE 5411 - Space Operations Analysis

3 Credits
An advanced class in astrodynamics and space mission operations. The primary goal is to present numerical methods useful in evaluating spacecraft trajectories. This will include

methods of orbit determination, numerical vehicle targeting, and statistical estimation theory. Prer., MAE 4410/5410.

MAE 5412 - Atmospheric Flight Control

3 Credits
Feedback control of aerospace vehicles operating in the atmosphere (aircraft and missiles). Aircraft and missile stability augmentation and autopilots. Frequency-domain analysis and synthesis, Bode/Nyquist, loop shaping. Prer., MAE 3420 and MAE 4415/MAE 5415.

MAE 5415 - Flight Dynamics

3 Credits
Advanced treatment of the flight dynamics of atmospheric flight vehicles and spacecraft. Rigorous development of non-linear equations of motion, including environmental and propulsive forces. Linearization via small-perturbation methods - limitations. Transient response, stability, natural modes. Intro to simulation techniques. Prer., MAE 3401, MAE 4402 recommended by the instructor. Meets with MAE 4415.

MAE 5417 - Modeling and Analysis of Dynamic Systems

3 Credits
Unified approach to dynamic systems analysis; method for development of lumped-parameter analytical models for mechanical and electromechanical systems, vehicles, robots, power systems; energy-based state-space formulations; simulation of linear and non-linear systems; perturbation techniques and neighboring trajectories; controllability concepts; modal analysis. Coreq.: MAE 5012.

MAE 5418 - Multivariable Modeling and Control of Mechanical and Aerospace Systems

3 Credits
Modeling, system representation, and control for multivariable mechanical and aerospace systems. Topics include system representation, observability, controllability, decoupling, and controller design. Prer., MAE 5417.

MAE 5419 - Trajectory Optimization

3 Credits
Optimization of the non-linear dynamics governing trajectories of aerospace vehicles or robots. Calculus of variations and numerical algorithms. Optimal orbit transfer, launch, reentry, and interplanetary trajectories; robot path planning. Treatment of equality and inequality constraints (e.g., heating, loads). Projects in numerical optimization. Prer., MAE 2104, MATH 3130, and MATH 3400.

MAE 5421 - Digital Control of Mechanical and Aerospace Systems

3 Credits
A laboratory-based course addressing the feedback control of aerospace vehicles, with special focus on the fact that the control systems will be implemented digitally. Z-domain systems analysis, discrete loop-shaping synthesis techniques; sample-rate selection; quantization effects. Real-time code generation and implementation. Hardware-in-the-loop testing and validation. Aircraft and missile stability augmentation and autopilots, spacecraft attitude control, and control of flexible systems. Prer., MAE 4421 or ECE 4510.

MAE 5424 - Spacecraft Attitude Dynamics and Control

3 Credits
Three-dimensional rigid body rotational spacecraft kinematics, Euler angle, quaternions, axis/angle. Euler's equations of motion, torque-free and constant torque behavior. Gravity gradient equilibria and stability. Spin stabilization, gyrostats, momentum exchange devices, reaction thrusters, magnetic torquers. Prer., MAE 4421, MAE 5417. Graduate standing or consent of instructor.

MAE 5450 - Robotics

3 Credits
Dynamics, kinematics, and automatic control of robotic devices. Force and position control, path planning. Prer., MATH 3130, MATH 3400, MAE 3401, and MAE 4421. Meets with MAE 4450.

MAE 5455 - Flight Mechanics

3 Credits
A fundamental study of the trajectory dynamics of aerospace vehicles operating in the atmosphere (aircraft and missiles). Rigid-body equations of motion; vehicle-carried coordinate systems; aerodynamic and propulsive forces; maneuvering flight; introduction to trajectory simulation. Prer., MAE 4402/MAE 5493, MATH 3130 and MATH 3400. Meets with MAE 4455.

MAE 5456 - Spacecraft Actuators and Sensors

3 Credits
Modeling of spacecraft actuators, including momentum wheels, reaction wheels, gas jets, and magnetic torque bars. Modeling of spacecraft sensors, including sun sensors, star sensors, earth sensors, magnetometers, gyros, and GPS. Prer., MAE 5402 and MATH 3400.

MAE 5510 - Engineering Design I

1 Credit
Design principles with the realistic constraints of economy, safety, reliability, aesthetics, ethics and social impact. Project and team organization to meet design goals. Professional oral and written communication of the design through presentations, memos, reports, and e-mail. Prer., Senior/Graduate standing. Meets with MAE 4510.

MAE 5511 - Engineering Design II

3 Credits
Project laboratory for the senior or graduate student for the design of a mechanical or electromechanical component, with emphasis on the identification, selection, design, and simulation or fabrication of the component. A successful project is required for completion of the course. Prer., MAE 4510/MAE 5510. Meets with MAE 4511.

MAE 5515 - Mechanical Engineering Technology

3 Credits
CAD/CAM in the design and manufacturing process, representation of curves and surfaces mathematically, solid modeling, fundamentals of CNC programming and rapid prototyping. Prer., Graduate students only, MAE 1503, MATH 3130. Meets with MAE 4515.

MAE 5520 - Operating System Support for Security

3 Credits
Covers the configuration and management of operating systems for security-related applications, OS hardening, access control, security policies, security and protection mechanisms, virtual machines, the exploits related to OS and their defenses, and mandatory access control and multilevel security. Prer., CS 2080, CS 2060.

MAE 5530 - Design and Analysis of Experiments

3 Credits
The application and study of experimentation and statistical design. Topics include design and analysis of single-factor and multi-factor experiments. A valuable course for all science and engineering majors. Prer., MAE 3005, and ECE 3610 or MATH 3100 or MATH 3810.

MAE 5559 - Manufacturing Technology and the Factory of the Future

3 Credits
Engineering and technology issues are integrated with management methods and international interaction to examine future developments in manufacturing. Topics include: computer-integrated manufacturing, robotics, flexible automation, expert systems, integration of design and production through databases and telecommunications, the human-machine interface, and manufacturing management information systems. Prer., MAE 4541/MAE 5574 and MAE 4542/ MAE 5575.

MAE 5560 - Engineering Project Management

3 Credits
Capstone course involving all components of the manufacturing systems engineering curriculum. Focus on mathematical programming, networks, dynamic programming and tools such as PERT/CPM to model projects, systems and timelines. A major portion of the course is a hands-on project. Written and oral reports are required that meet publication standards for completeness, clarity and technical integrity. Prer., Graduate status. Meets with ENGR 5050.

MAE 5570 - Design for Manufacture

3 Credits
Theories and practice for achieving manufacturable designs. Topics include: introduction to manufacturing processes, creativity and design, DFM concepts, design philosophy, company DFM programs,group technology, cost and value analysis, life-cycle engineering, assembly strategies, and human factors. Prer., ENGR 3420 and MAE 2501. Meets with MAE 3560.

MAE 6415 - Robust Multivariable Control

3 Credits
Theory and application for multivariable feedback control systems, limitations of achievable performance and stability robustness in the face of uncertainty in the dynamics of the controlled system. Characterization of uncertainty, and robustness analysis. Multivariable synthesis techniques, applications to control of electromechanical systems and spacecraft. Prer., ECE 5520.

MAE 6430 - Optimal Estimation Theory

3 Credits
Theory of optimal estimation, with applications to aerospace navigation. Kalman filtering, and complementary filters, continuous and discrete formulations. Observability issues, sensor selection, numerical methods. Prer., ECE 4610 or ECE 5610.

MAE 7000 - Master's Thesis

1-12 Credits
For master's thesis in mechanical and aerospace engineering. Prer., Prior agreement with faculty advisor.

MAE 7500 - Master's Research

1-12 Credits
Research credit for master's program in mechanical and aerospace engineering. Prer., Prior agreement with faculty advisor.

MAE 8000 - Doctoral Dissertation

1-10 Credits
For doctoral dissertation in mechanical and aerospaceengineering. Prer., Prior agreement with faculty advisor.

MAE 9110 - Special Topics: Undergraduate

1-3 Credits
An opportunity for students to study special subjectsin mechanical and aerospace engineering, undergraduate level. Prer., Prior agreement with faculty advisor.

MAE 9400 - Independent Study: Undergraduate

1-6 Credits
Provides opportunity for independent study in mechanical and aerospace engineering by one or more students on topics determined by a faculty member. Prer., Prior agreement with faculty advisor.

MAE 9500 - Independent Study: Graduate

1-6 Credits
Provides opportunity for independent study in mechanical and aerospace engineering by one or more graduate students on topics determined by a faculty member. Prer., Prior agreement with faculty advisor.

MAE 9510 - Special Topics: Graduate

1-3 Credits
An opportunity for students to study special subjects in mechanical and aerospace engineering, graduate level. Prer., Prior agreement with faculty advisor.

MAE 9520 - Graduate Seminar

1-3 Credits
Allows graduate students credit for attending department seminars and workshops. Prer., Prior agreement with faculty advisor.

MAE 9990 - Candidate for Degree

0 Credits
Candidate for degree. Prer., Prior agreement with faculty advisor.

MATH-Mathematics

MATH 90 - Algebra I: Fundamentals of Algebra

4 Credits
Graph and solve first-degree equations and inequalities; convert word problems into first-degree problems; add, multiply, and divide polynomials; use scientific notation; factor and solve word problems involving quadratic expressions; use algebra and coordinate geometry to solve problems involving one or more lines; manipulate algebraic fractions. Administered through the Department of Mathematics. Does not count toward BA or BS degree. Prer., Placement exam.

MATH 99 - Algebra II: Intermediate Algebra

4 Credits
Equations and inequalities; graphs and functions; systems of equations and inequalities; polynomials and polynomial functions; rational expressions and equations; roots, radicals, and complex numbers; quadratic functions. Administered through the Department of Mathematics. Does not count toward BA or BS degree. Prer., MATH 90 with a grade of "C" or better, or pass the Math Placement Test for MATH 99.

MATH 1040 - College Algebra

3 Credits
An in-depth study of algebraic equations and

inequalities. Comprehension of the underlying algebraic structure will be stressed as well as appropriate algebraic skills. The study will include polynomials, rational, exponential, and logarithmic functions as well as systems of equations/inequalities. Prer., MATH 99 with a grade of "C" or better, or pass the Math Placement Test for MATH 1040. *** See Mathematics Department prerequisite policy. *** GT-MA1.

MATH 1050 - Elementary Functions of Calculus

4 Credits
An intensive study of the elementary functions required for calculus. These functions will include polynomial, rational, exponential, logarithmic, and trigonometric functions. Emphasis is on their algebraic structure and graphs. Analysis of conic sections and analytic geometry will be included. GT-MA1. Prer., MATH 1040 with a grade of "C" or better, or pass the Math Placement Test for MATH 1050. **see Mathematics Department prerequisite policy. ***

MATH 1110 - Topics in Linear Algebra

3 Credits
For business and economics students. Systems of linear equations, matrix algebra, linear programming, probability, statistics. Prer., MATH 1040 or score 17 or more on algebra diagnostic exam. **see Mathematics Department prerequisite policy**

MATH 1120 - Calculus for Business and Economics

3 Credits
Calculus for business and economics students. Prer., MATH 1040 with a grade of "C" or better, or pass the Math Placement Test for MATH 1120. **see Mathematics Department prerequisite policy**

MATH 1200 - Reasoning About Data

3 Credits
Helps students develop quantitative and qualitative reasoning skills by applying inductive and deductive reasoning, mathematics, and statistics to real world data. This course is one of the means to satisfy the Qualitative and Quantitative Reasoning requirement.

MATH 1310 - Calculus I with Refresher Precalculus Part A.

3 Credits
See MATH 1350 for calculus topics covered. Algebraic and elementary function topics are covered throughout, as needed. MATH 1310 and 1320 together are equivalent to MATH 1350. The sequence MATH 1310 - 1320 is designed for students whose manipulative skills in the techniques of high school algebra and precalculus may be inadequate for MATH 1350. Credit not granted for both this course and MATH 1350. Prer., MATH 1050 with a grade of "C" or better, or pass the Math Placement Test for MATH 1350.

MATH 1320 - Calculus I with Refresher Precalculus Part B

3 Credits
Continuation of MATH 1310. See MATH 1350 for calculus topics covered. Algebraic and trigonometric topics are studied throughout, as needed. Credit not granted for both this course and MATH 1350. Prer., MATH 1310, the equivalents of MATH 1040(College Algebra) and MATH 1050 (Elementary Functions for Calculus) or score 20 or more on the Calculus Readiness exam. Most students with 4 years of high school mathematics (Algebra I or higher) will qualify.

MATH 1330 - Calculus for Life Sciences

4 Credits
A systematic introduction to calculus concepts useful in the life sciences, such as rates of change, limits, differentiation and integration, with emphasis on applications in the life sciences and the areas connected to modeling biological processes, such as differential equations and dynamical systems. Students may not take MATH 1330 and MATH 1350 and receive credit for both. Prer., MATH 1050 with a grade of "C" or better, or pass the Math Placement Test for MATH 1350.

MATH 1350 - Calculus I

4 Credits
Selected topics in analytical geometry and calculus. Rates of change of functions, limits, derivatives of algebraic and transcendental functions, applications of derivatives, and integration. Prer., MATH 1050 with a grade of "C" or better, or pass the Math Placement Test for MATH 1350. *** See Mathematics Department prerequisite policy. ***

MATH 1360 - Calculus II

4 Credits
Continuation of MATH 1350. Transcendental functions, techniques and applications of integration, Taylor's theorem, improper integrals, infinite series, analytic geometry, polar coordinates. Prer., MATH 1320 or MATH 1350 with a grade of "C" or better.

MATH 2150 - Discrete Math

3 Credits
Introduction to most of the important topics of discrete mathematics, including set theory, logic, number theory, recursion, combinatorics, and graph theory. The ideas and methods of mathematical proofs, including induction and contradiction, will be emphasized. Prer., MATH 1320 or MATH 1350 with a grade of "C" or better.

MATH 2350 - Calculus III

4 Credits
Continuation of MATH 1360. Parametric curves, vector functions, partial differentiation, multiple integrals, Green's Theorem and Stoke's Theorem. Prer., MATH 1360 with a grade of "C" or better.

MATH 2650 - Introduction to Computational Mathematics

1 Credit
An introduction to the use of computers in mathematics using the Matlab computer algebra system. Representation of equations and functions using arrays. Visualization of data and functions. Matlab programs, including general program organization, subprograms, files, and built-in mathematical functions. Prer., MATH 2350.

MATH 2810 - Introduction to Basic Statistics

3 Credits
Study of the elementary statistical measures. Introduction to probability, statistical distributions, statistical inference and hypothesis testing. Prer., MATH 1040 or equivalent.

MATH 3010 - Mathematics for Elementary Teachers I

3 Credits
Covers the whole number, integer, and rational number systems that are of prime importance to the elementary teacher. For students planning on elementary teacher certification. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. This course, when taken with MATH 3020, is one of the means to satisfy the LAS

and Compass Curriculum Quantitative and Qualitative Reasoning requirement.

MATH 3020 - Mathematics for Elementary Teachers II

3 Credits
Intuitive and logical development of the fundamental ideas of geometry such as parallelism, congruence, and measurement. Includes study of plane analytical geometry. For students planning on elementary teacher certification. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. This course, when taken with MATH 3010, is one of the means to satisfy the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement.

MATH 3100 - Statistics for the Sciences

3 Credits
Descriptive probability, hypothesis testing, nonparametric methods. Discrete and continuous random variables, mean and variance, confidence limits, correlation and regression. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., MATH 1350.

MATH 3110 - Theory of Numbers

3 Credits
A careful study, with emphasis on proofs, of the following topics associated with the set of integers: divisibility, congruences and modular arithmetic, arithmetic functions, sums of squares, and elementary results on distributions of primes. The history of various developments in the subject, along with biographies of important contributors, will be included. Prer., MATH 1360 and MATH 2150.

MATH 3130 - Introduction to Linear Algebra

3 Credits
Systems of linear equations, matrices, vector spaces, linear independence, basis, dimension, determinants, linear transformations and matrices, eigenvalues and eigenvectors. Prer., MATH 2350 with a grade of "C" or better.

MATH 3210 - Introduction to Geometry

3 Credits
An introduction to the major theorems of Euclidean and non-Euclidean geometries. The role of axiom systems and the history of alternative geometries will be discussed. Students will learn to write, teach, and evaluate rigorous proofs in geometry. Prer., MATH 2350, MATH 2150.

MATH 3400 - Intro to Differential Equations

3 Credits
First order differential equations, linear differential equations. Additional methods selected from the Laplace transform method, power series solutions, numerical solutions, linear systems. Prer., MATH 2350.

MATH 3410 - Introduction to Analysis

3 Credits
An introduction to proofs in analysis. Topics include completeness of the real numbers, sequences and limits, infinite series, and continuous functions. Prer., MATH 2150 and MATH 2350.

MATH 3480 - Functions and Modeling

3 Credits
Data collection and exploration of a variety of situations that can be modeled using linear, exponential, polynomial, and trigonometric functions. Use of technology in teaching, connections between various areas of mathematics, non-routine problem solving, problem-based learning, and applications for mathematics. Meets with UTLS 2040. Prer., MATH 2350.

MATH 3500 - Graph Theory

3 Credits
Standard material on the theory of both directed and undirected graphs, including the concepts of isomorphism, connectivity, trees, traversability, planar graphs, coloring problems, relations and matrices. Prer., MATH 2150.

MATH 3510 - Topics in Combinatorial Analysis

3 Credits
A survey of important areas of combinatorics. Topics may include enumeration techniques, recurrence relations, combinatorial designs, graph theory, machining and optimization. Prer., MATH 2150.

MATH 3650 - Advanced Computational Math

2 Credits
Advanced computational techniques with applications in mathematics, science and engineering. Topics include numerical linear algebra, dynamical systems and stability, calculus in the complex plane and elements of Fourier analysis, the DFT and FFT method, Monte Carlo Simulations, other applications in science and engineering. Prer., MATH 2650, MATH 3130, MATH 3400.

MATH 3670 - Intro to Scientific Computation

3 Credits
This is the 3-credit-hour alternative to MATH 2650 (1 credit) and MATH 3650 (2 credits). Introduction to computational math (see course description for MATH 2650) and advanced computational techniques (see course description for MATH 3650). Prer., MATH 3130, MATH 3400.

MATH 3810 - Introduction to Probability and Statistics

3 Credits
The axioms of probability and conditional probability will be studied as well as the development, applications and simulation of discrete and continuous probability distributions. Also, expectation, variance, correlation, sum and joint distributions of random variables will be studied. The Law of Large Numbers and the Central Limit Theorem will be developed. Applications to statistics will include regression, confidence intervals, and hypothesis testing. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., MATH 2350.

MATH 4040 - Senior Math Seminar

1 Credit
This is a capstone experience for the students in the mathematics program. Students will give oral presentations on mathematical topics, and will actively participate in peer presentations. Approved for LAS Oral Communication area requirement. Approved for Compass Curriculum requirement: Summit. Prer., Senior standing.

MATH 4050 - Topics in Mathematics Secondary Classroom

1-3 Credits
The topics covered will vary from one offering to the next. Topics will be chosen to meet the needs of secondary mathematics teachers for additional training to teach to the Colorado Model Content Standards. Prer., One semester of calculus, or instructor approval. Meets with MATH 5050.

MATH 4100 - Technology in Mathematics Teaching and Curriculum

3 Credits
Methodology for using technology as a teaching/learning tool for high school and college math courses. Use of graphing calculators, computer algebra systems, computer geometry systems and the internet will be emphasized. Students are required to develop and present a portfolio of in-depth projects. Prer., MATH 1360. Meets with MATH 5100.

MATH 4130 - Linear Algebra I

3 Credits
Proof-based treatment of vector spaces, linear transformations and matrices, determinants, eigenvalues, similarity transformations, orthogonal and unitary transformations, normal matrices and quadratic forms. Prer., MATH 3130. Meets with MATH 5130.

MATH 4140 - Modern Algebra I

3 Credits
A careful study of the elementary theory of groups, rings, and fields. Mappings such as homomorphisms and isomorphisms are considered. The student will be expected to prove theorems. Prer., MATH 2150 and MATH 3130. One of MATH 3110, MATH 3500, or MATH 3510 (preferably MATH 3110) is strongly recommended.

MATH 4150 - Modern Algebra II

3 Credits
Continuation of MATH 4140. The relationship between groups and fields is explored via a thorough investigation of Galois theory. Prer., MATH 4140. Meets with MATH 4150.

MATH 4210 - Differential Geometry

3 Credits
Presents topics in geometry suitable for advanced undergraduates, such as differential geometry of curves and surfaces, geometry of manifolds, or more in-depth exploration of non-Euclidean geometries. Prer., MATH 3130, MATH 3410. Meets with MATH 5210.

MATH 4230 - Fractal Geometry

3 Credits
Introduction to iterated function systems and mathematical aspects of fractal sets. Includes metric spaces and the space fractals live in, transformations, contraction mapping and Collage Theorem, chaotic dynamics, shadowing theorem, fractal dimension, fractal interpolation, and measures on fractals. Prer., MATH 2350 and MATH 3130. Meets with MATH 5230.

MATH 4250 - Introduction to Chaotic Dynamical Systems

3 Credits
Introduction to dynamical systems or processes in motion, that are defined in discrete time by iteration of simple functions, or in continuous time by differential equations. Emphasis on understanding chaotic behavior that occurs when a simple non-linear function is iterated. Topics include orbits, graphical analysis, fixed and periodic points, bifurcations, symbolic dynamics, chaos, fractals, and Julia sets. Prer., MATH 2350. Meets with MATH 5250.

MATH 4310 - Modern Analysis I

3 Credits
Rigorous treatment of calculus. Topics include differentiation, integration, Taylor's Theorem, uniform convergence of sequences of functions, and power series. Prer., MATH 3410.

MATH 4320 - Modern Analysis II

3 Credits
Careful theoretical study of topology of Euclidean space, metric spaces, sequences and series of functions, calculus of several variables. Prer., MATH 4310. Meets with MATH 5320.

MATH 4420 - Optimization

3 Credits
Topics selected from linear and nonlinear programming, the simplex algorithm and other approaches to linear optimization, minimax theorems, convex functions, introduction to calculus of variations. Prer., MATH 3130 and MATH 3400. Meets with MATH 5420.

MATH 4430 - Ordinary Differential Equations

3 Credits
Existence and uniqueness theorem, linear equations, linear systems with periodic coefficients (Floquet theory), stability analysis of planar systems, series solutions at regular singular points, Strum-Lioville problems. Prer., MATH 3130 and MATH 3400. Meets with MATH 5430.

MATH 4450 - Complex Variables

3 Credits
Theory of functions of one complex variable including integrals, power series, residues, conformal mapping and special functions. Prer., MATH 2350. Meets with MATH 5450.

MATH 4470 - Methods of Applied Mathematics

3 Credits
Boundary value problems for the wave, heat, and Laplace equations, separation of variables methods, eigenvalue problems, Fourier series, orthogonal systems. Prer., MATH 2350, MATH 3130 and MATH 3400. Meets with MATH 5470.

MATH 4480 - Mathematical Modeling

3 Credits
The use of diverse mathematical techniques to analyze and solve problems from science and engineering, particular problems likely to arise in nonacademic settings such as industry or government. Converting a problem to a mathematical model. Commonly encountered classes of mathematical models, including optimization problems, dynamical systems, probability models and computer simulations. Communication of results of mathematical analysis. Prer., MATH 3130, MATH 3400, and MATH 3100 or MATH 3810 or ECE 3610. MATH 2650 or adequate experience with computer programming. Meets with MATH 5480.

MATH 4510 - Topology

3 Credits
An introduction to Point-set topology and elements of geometric or algebraic topology. Prer., MATH 4310. Meets with MATH 5510.

MATH 4650 - Numerical Analysis

3 Credits
Error analysis, root finding, numerical integration and differentiation, numerical methods for ordinary differential equations, numerical linear algebra and eigenvalue problems. Prer., CS 1150, MATH 3130, and MATH 3400. Meets with MATH 5650.

MATH 4670 - Scientific Computation I

3 Credits
Numerical solutions of initial-value problems, two-point boundary-value problems for ordinary differential equations, and applications. Numerical methods for solving linear partial differential equations, including finite difference and finite element method. Laplace, heat, and wave equation. Prer., MATH 3670 or MATH 4650/5650, and MATH 4470/5470. Meets with MATH 5670.

MATH 4810 - Mathematical Statistics I

3 Credits
Exponential, Beta, Gamma, Student, Fisher and Chi-square distributions are covered in this course, along with joint and conditional distributions, moment generating techniques, transformations of random variables and vectors. Prer., MATH 2350 and MATH 3130. Meets with MATH 5810.

MATH 4820 - Mathematical Statistics II

3 Credits
Point and confidence interval estimation, principles of maximum likelihood, sufficiency and completeness; tests of simple and composite hypotheses. Linear models and multiple regression analysis. Other topics will be included. Prer., MATH 3810 or MATH 3100. Meets with MATH 5820.

MATH 4830 - Linear Statistical Models

3 Credits
Methods and results of linear algebra are developed to formulate and study a fundamental and widely applied area of statistics. Topics include generalized inverses, multivariate normal distribution and the general linear model. Applications focus on model building, design models and computing methods. The "Statistical Analysis System" (software) is introduced as a tool for doing computation. Prer., MATH 3810 or ECE 3610, or MATH 3100 and MATH 3130. Meets with MATH 5830.

MATH 4850 - Stochastic Modeling

3 Credits
Mathematical development of continuous and discrete time Markov chains, queuing theory, reliability theory, and Brownian motion with applications to engineering and computer science. Prer., MATH 3810 or ECE 3610. MATH 2650 or adequate experience with computer programming. Meets with MATH 5850.

MATH 4900 - Advanced Topics Seminar

1-3 Credits
Various advanced topics in mathematics. Prer., Vary depending on course content. Consent of instructor required. Meets with MATH 5900.

MATH 5050 - Topics in Mathematics for the Secondary Classroom

0.5-3 Credits
The topics covered will vary from one offering to the next. Topics will be chosen to meet the needs of secondary mathematics teachers for additional training to teach to the Colorado Model Content Standards. Prer., One semester of calculus, or instructor approval. Meets with MATH 4050.

MATH 5100 - Technology in Mathematics Teaching and Curriculum

3 Credits
Methodology for using technology as a teaching/learning tool for high school and college math courses. Use of graphing calculators, computer algebra systems, computer geometry systems and the internet will be emphasized. Students are required to develop and present a portfolio of in-depth projects. Prer., MATH 1360. Meets with MATH 4100.

MATH 5110 - Technology in Math Education Seminar

1-3 Credits
A follow-up to MATH 4100/5100. Students will present demonstrations, projects and/or laboratories they have developed for use in their math courses. Extended in-depth coverage of computer algebra or geometry systems and/or graphing calculators and internet. Basic familiarity with computer algebra or geometry systems and/or graphing calculators is required. Prer., MATH 5100 or consent of instructor.

MATH 5130 - Linear Algebra I

3 Credits
Proof-based treatment of vector spaces, linear transformations and matrices, determinants, eigenvalues, similarity transformations, orthogonal and unitary transformations, normal matrices and quadratic forms. Prer., MATH 3130. Meets with MATH 4130.

MATH 5150 - Modern Algebra II

3 Credits
Continuation of MATH 4140. The relationship between groups and fields is explored via a thorough investigation of Galois theory. Prer., MATH 4140. Meets with MATH 4150.

MATH 5170 - Rings and Modules I

3 Credits
Fundamentals of ring and module theory, including simple and semisimple rings and modules, projective and injective modules, chain conditions on ideals, Jacobson radical, von Neumann regular rings, group rings. Meets with MATH 6170. Prer., MATH 4140.

MATH 5210 - Differential Geometry

3 Credits
Presents topics in geometry suitable for advanced undergraduates, such as differential geometry of curves and surfaces, geometry of manifolds, or more in-depth exploration of non-Euclidean geometries. Prer., MATH 3130, MATH 3410. Meets with MATH 4210.

MATH 5230 - Fractal Geometry

3 Credits
Introduction to iterated function systems and mathematical aspects of fractal sets. Includes metric spaces and the space fractals live in, transformations, contraction mapping and collage theorem, chaotic dynamics, shadowing theorem, fractal dimension, fractal interpolation, and measures on fractals. Prer., MATH 2350 and MATH 3130. Meets with MATH 4230.

MATH 5250 - Introduction to Chaotic Dynamical Systems

3 Credits
Introduction to dynamical systems or processes in motion, defined in discrete time by iteration of simple functions, or in continuous time by differential equations. Emphasis on chaotic behavior of an iterated simple nonlinear function. Orbits, graphical analysis, fixed and periodic points, bifurcations, symbolic dynamics, chaos, fractals, and Julia sets. Prer., MATH 2350. Meets with MATH 4250.

MATH 5270 - Algebraic Coding Theory

3 Credits
The basic ideas, examples, and applications of the theory of error-correcting codes are presented, including linear codes and cyclic codes. These codes are important for the digi-

tal transmission of data. Finite fields, polynomial rings, and ideals play central roles. Prer., MATH 4140.

MATH 5320 - Modern Analysis II

3 Credits
Careful theoretical study of topology of Euclidean space, metric spaces, sequences and series of functions, calculus of several variables. Prer., MATH 4310. Meets with MATH 4320.

MATH 5330 - Real Analysis I

3 Credits
Lebesgue measure, measurable and nonmeasurable sets, sigma algebras. Lebesgue integral, comparison with Riemann integration, Monotone and Dominated Convergence Theorems, Fatou's Lemma. Differentiation, functions of bounded variation, absolute continuity integration in product spaces, Fubini's Theorem. Prer., MATH 4320/5320. Meets with MATH 6330. Graduate students only.

MATH 5350 - Applied Functional Analysis

3 Credits
Basic concepts, methods, and applications of functional analysis. Complete metric spaces, contraction mapping, and applications. Banach spaces and linear operators. Inner product and Hilbert spaces, orthonormal bases and expansions, approximation, and applications. Spectral theory of compact operators, including self adjoint and normal operators. Prer., MATH 4320 or MATH 5320. Meets with MATH 6350. Graduate students only.

MATH 5420 - Optimization

3 Credits
Topics selected from linear and nonlinear programming, the simplex algorithm and other approaches to linear optimization, minimax theorems, convex functions, introduction to calculus of variations. Meets with MATH 4420.

MATH 5430 - Ordinary Differential Equations

3 Credits
Existence and uniqueness theorem, linear systems, linear systems with periodic coefficients (Floquet theory), stability analysis of planar systems, series solutions at regular singular points, Sturm-Liouville problems. Prer., MATH 3130, MATH 3400. Meets with MATH 4430.

MATH 5440 - Approximation Methods in Applied Mathematics

3 Credits
Approximate solutions of differential equations by asymptotic expansions, asymptotic expansion of integrals, regular and singular perturbation methods, boundary layer analysis, WKB methods, and multiple-scale techniques. Prer., MATH 5430/6430 and MATH 5610/6610. Graduate students only. Meets with MATH 6440.

MATH 5450 - Complex Variables

3 Credits
Theory of functions of one complex variable, including integrals, powering series, residues, conformal mapping and special functions. Meets with MATH 4450.

MATH 5470 - Methods of Applied Mathematics

3 Credits
Boundary value problems for the wave, heat, and Laplace equations, separation of variables methods, eigenvalue problems, Fourier series, orthogonal systems. Prer., MATH 2350, MATH 3130 and MATH 3400. Meets with MATH 4470.

MATH 5480 - Mathematical Modeling

3 Credits
The use of diverse mathematical techniques to analyze and solve problems from science and engineering, particularly problems likely to arise in a nonacademic setting such as industry or government. Converting a problem to a mathematical model. Commonly encountered classes of mathematical models, including optimization problems, dynamical systems, probability models, and computer simulations. Communication of results of mathematical analysis. Prer., MATH 3130, MATH 3400, and MATH 3100 or MATH 3810 or ECE 3610. MATH 2650 or adequate experience in computer programming. Meets with MATH 4480.

MATH 5510 - Topology

3 Credits
Point-set topology and elements of geometric or algebraic topology. Prer., MATH 4310. Meets with MATH 4510.

MATH 5520 - Perturbation Theory in Astrodynamics

3 Credits
Perturbation methods including Lagrange and Hamiltonian mechanics and the generalized method of averaging. Gravitational and atmosphere modeling. Prer., MAE 4410/5410 or PHYS 5510.

MATH 5610 - Complex Analysis I

3 Credits
Complex numbers, Cauchy-Reimann equations, harmonic functions. Elementary functions and conformal mapping. Contour integrals, Cauchy integral representation. Uniform convergence and power series. Residues. Prer., MATH 4310/5310. Graduate students only. Meets with MATH 6610.

MATH 5620 - Complex Analysis II

3 Credits
Argument principle, Rouche's Theorem. Homotopy and countour integrals. Compact sets of functions and uniform convergence. Conformal mappings and the Riemann Mapping Theorem. Infinite products, analytic continuation, special topics. Prer., MATH 5610/6610. Graduate students only. Meets with MATH 6620.

MATH 5650 - Numerical Analysis

3 Credits
Error analysis, root finding, numerical integration and differentiation, numerical methods for ordinary differential equations, numerical linear algebra and eigenvalue problems. Meets with MATH 4650.

MATH 5670 - Scientific Computation I

3 Credits
Numerical solutions of initial-value problems, two-point boundary-value problems for ordinary differential equations, and applications. Numerical methods for solving linear partial differential equations, including finite difference and finite element method. Laplace, heat, and wave equation. Prer., MATH 3670 or MATH 4650/5650, and MATH 4470/5470. Meets with MATH 4670.

MATH 5680 - Scientific Computation II

3 Credits
Advanced numerical methods for solving linear and nonlinear partial differential equations, including spectral and pseudo-spectral methods. Iterative methods for solving large linear systems. Prer., MATH 4670 or MATH 5670. Graduate students only. Meets with MATH 6680.

MATH 5810 - Mathematical Statistics I

3 Credits
Exponential, Beta, Gamma, Student, Fisher and Chi-square distributions are covered in this course, along with joint and conditional distributions, moment generating techniques, transformations of random variables and vectors. Prer., MATH 2350 and MATH 3130. Meets with MATH 4810.

MATH 5820 - Mathematical Statistics II

3 Credits
Point and confidence interval estimation, principles of maximum likelihood, sufficiency and completeness; tests of simple and composite hypotheses. Linear models, and multiple regression analysis. Other topics will be included. Prer., MATH 3100 or MATH 3810. Meets with MATH 4820.

MATH 5830 - Linear Statistical Models

3 Credits
Methods and results of linear algebra are developed to formulate and study a fundamental and widely applied area of statistics. Topics include generalized inverses, multivariate normal distribution and the general linear model. Applications focus on model building, design models and computing methods. The "Statistical Analysis System" (software) is introduced as a tool for doing computations. Prer., MATH 3810 or ECE 3610, or MATH 3100 and MATH 3130. Meets with MATH 4830.

MATH 5840 - Computer Vision

3 Credits
Representation and manipulation of digital images; Fourier analysis of images; enhancement techniques in spatial and frequency domain; segmentation procedures; digital geometry, region and boundary representation; texture processing; pattern recognition and application to robotics. Prer., Graduate standing in mathematics, engineering or computer science. Meets with C S 5840.

MATH 5850 - Stochastic Modeling

3 Credits
Mathematical development of continuous and discrete time Markov chains, queuing theory, reliability theory and Brownian motion with applications to engineering and computer science. Prer., MATH 3810 or ECE 3610. MATH 2650 or adequate experience with computer programming. Meets with MATH 4850.

MATH 5900 - Graduate Seminar

1-3 Credits
Various topics in mathematics at the graduate level. Prer., Consent of instructor. Meets with MATH 4900.

MATH 5910 - Theory of Probability I

3 Credits
Measure theory is given form within a large body of probabilistic examples, ideas, and applications. Weak and strong laws of large numbers, central limit theory, and random walk in the context of independent random variables. Prer., MATH 4310. Graduate students only. Meets with MATH 6910.

MATH 5920 - Theory of Probability II

3 Credits
Probability theory for sequences of dependent random variables, with the major focus on martingale theory and its applications. Prer., MATH 5910/6910. Graduate students only. Meets with MATH 6920.

MATH 6170 - Rings and Modules I

3 Credits
Fundamentals of ring and module theory, including simple and semisimple rings and modules, projective and injective modules, chain conditions on ideals, Jacobson radical, von Neumann regular rings, group rings. Meets with MATH 5170. Prer., MATH 4140.

MATH 6180 - Rings and Modules II

3 Credits
Further topics in ring and module theory, including division rings, perfect and semiperfect rings. Prer., MATH 5170 or MATH 6170.

MATH 6210 - Mathematics Teachers' Circle Academy

2 Credits
Designed to help secondary school mathematics teachers present and facilitate mathematical problem-solving activities with their students. Mathematical approaches to problem-oriented questions will be discussed, as well as teaching methodologies regarding optimal use of such classroom activities.

MATH 6220 - Mathematics Teachers' Circle Seminar

1 Credit
Designed to help secondary math teachers follow up on the educational and pedagogical benefits and issues of using a problem-solving approach to teaching mathematics in their classrooms. Prer., MATH 6210.

MATH 6270 - Algebraic Coding Theory

3 Credits
The basic ideas, examples, and applications of the theory of error-correcting codes are presented, including linear codes and cyclic codes. These codes are important for the digital transmission of data. Finite fields, polynomial rings, and ideals play central roles. Meets with MATH 5270. Prer., MATH 4140.

MATH 6310 - Mathematics and Economics for K-12 Teachers

0.5-3 Credits
Designed to provide K-12 teachers with various methods and concepts from mathematics and economics which can be incorporated into K-12 mathematics or economics curricula. Not an option for MATH majors or graduate students. Meets with ECON 6310.

MATH 6330 - Real Analysis I

3 Credits
Lebesgue measure, measurable and nonmeasurable sets, sigma algebras. Lebesgue integral, comparison with Riemann integration, Monotone and Dominated Convergence Theorems, Fatou's Lemma. Differentiation, functions of bounded variation, absolute continuity integration in product spaces, Fubini's Theorem. Prer., MATH 4320/5320. Meets with MATH 5330. Graduate students only.

MATH 6350 - Applied Functional Analysis

3 Credits
Basic concepts, methods, and applications of functional analysis. Complete metric spaces, contraction mapping, and applications. Banach spaces and linear operators. Inner product and Hilbert spaces, orthonormal bases and expansions, approximation, and applications. Spectral theory of compact operators, including self adjoint and normal operators. Prer., MATH 4320 or MATH 5320. Meets with MATH 5350. Graduate students only.

MATH 6440 - Approximation Methods in Applied Mathematics

3 Credits
Approximate solutions of differential equations by asymptotic expansions, asymptotic expansion of integrals, regular and singular perturbation methods, boundary layer analysis, WKB methods, and multiple-scale techniques. Prer., MATH 5430/6430 and MATH 5610/6610. Graduate students only. Meets with MATH 5440.

MATH 6610 - Complex Analysis I

3 Credits
Complex numbers, Cauchy-Reimann equations, harmonic functions. Elementary functions and conformal mapping. Contour integrals, Cauchy integral representation. Uniform convergence and power series. Residues. Prer., MATH 4310/5310. Graduate students only. Meets with MATH 5610.

MATH 6620 - Complex Analysis II

3 Credits
Argument principle, Rouche's Theorem. Homotopy and countour integrals. Compact sets of functions and uniform convergence. Conformal mappings and the Riemann Mapping Theorem. Infinite products, analytic continuation, special topics. Prer., MATH 5610/6610. Graduate students only. Meets with MATH 5620.

MATH 6680 - Scientific Computation II

3 Credits
Advanced numerical methods for solving linear and nonlinear partial differential equations, including spectral and pseudo-spectral methods. Iterative methods for solving large linear systems. Prer., MATH 4670 or MATH 5670. Graduate students only. Meets with MATH 5680.

MATH 6910 - Theory of Probability I

3 Credits
Measure theory is given form within a large body of probabilistic examples, ideas, and applications. Weak and strong laws of large numbers, central limit theory, and random walk in the context of independent random variables. Prer., MATH 4310. Graduate students only. Meets with MATH 5910.

MATH 6920 - Theory of Probability II

3 Credits
Probability theory for sequences of dependent random variables, with the major focus on martingale theory and its applications. Prer., MATH 5910/6910. Graduate students only. Meets with MATH 5920.

MATH 7000 - Masters Thesis

1-6 Credits
Masters Thesis

MATH 8000 - Ph.D Dissertation

1-10 Credits
Enrollment is limited to those students who are in the PhD program in Engineering, and have primary thesis advisor in the Department of Mathematics. Prer., Consent of instructor.

MATH 9000 - Fundamentals of Algebra

2 Credits
A review of basic algebra and arithmetic, including algebra of polynomials, factorization of simple polynomials, arithmetic operations on fractions and rational expressions, laws of exponents, linear equations and inequalities in one variable, quadratic equations using factoring. Administered through the Department of Mathematics. Pass/fail grading only. Does not count toward BA or BS degree.

MATH 9200 - Independent Study Math Undergraduate

1-4 Credits
Independent Study Math Undergraduate

MATH 9400 - Independent Study Math Undergraduate

1-3 Credits
Independent Study Math Undergraduate

MATH 9500 - Independent Study Math, Graduate

1-3 Credits
Independent Study Math, Graduate

MATH 9990 - Candidate for Degree

0 Credits
Candidate for Degree

MEIA - Information Assurance

MEIA 5030 - Security and Privacy in Clouds

3 Credits
Explores current state of security and privacy in the cloud, including confidentiality, integrity, and availability. It will also explore authentication as well as identity and access management in the cloud. Current state of cloud security and privacy research will be intensively discussed in this course. Prer., MEIA 5220, MEIA 5520, and MEIA 5910; Graduate students only.

MEIA 5200 - Computer Architecture I

3 Credits
Course covers fundamentals of computer design, instruction set principles and examples, pipelining, advanced pipelining and instruction-level parallelism, memory-hierarchy design and survey of design issues in storage, interconnection network and multiprocessor systems. Prer., CS 2160. Meets with CS 4200.

MEIA 5220 - Computer Communication

3 Credits
The subject of transmitting information between processors is described in detail. The student is expected to have maturity with hardware and/or real-time concepts. Communication systems, from simple to asynchronous point-to-point links, to those based on complex network architectures will be studied. Material will be oriented toward the computer scientist as a user, designer and evaluator of such systems. Terminology and concepts will be emphasized rather than detailed electronic or physical theory. Prer., CS 2060, CS 2080; and ECE 3610 or MATH 3810.

MEIA 5350 - Software Project Management

3 Credits
Planning, scheduling, costing of projects. Measuring progress, predicting success, controlling failure. Management tools and their use. Effectiveness and efficiency of software engineering environments. Distributed software development. Quality control standards and practices. Prer., Knowledge of modern programming, NG language, data structures and algorithms, and discrete structures.

MEIA 5360 - Software Product Assurance

3 Credits
Principles, techniques and tools for producing quality software systems. The first half of this course focuses on software product assurance processes. The second half covers a variety of software testing techniques. Prer., CS 5310.

MEIA 5520 - Operating System Support for Security

3 Credits
Covers the configuration and management of operating systems for security-related applications, OS hardening, access control, security policies, security and protection mechanisms, virtual machines, the exploits related to operating systems and their defenses, and mandatory access control and multilevel security. Prer., CS 2060, CS 2080.

MEIA 5910 - Fundamentals of Computer/ Network Security

3 Credits
Introduction to the study of computer and network security from the view of information warfare. Topics include information system threats, vulnerabilities and defensive mechanisms (cryptography, authentication digital signatures, PKI, etc.). Prer., CS 2080 and MATH 2150.

MEIA 5920 - Applied Cryptography for Secure Communication

3 Credits
Basic security issues in computer communication, classical cryptographic algorithms, symmetric-key cryptography, public-key cryptography, authentication, and digital signatures. Prer., MATH 2150, MATH 3810, CS 3160, CS 5220, or instructor consent.

MEIA 5990 - Information Assurance Capstone Project Laboratory

3 Credits
Students participate in information assurance projects involving the vulnerability analysis and hardening of software systems. Students are evaluated based on their project work, how they integrate what they have learned in the required information assurance core courses, and an oral presentation at the end of the course. Prer., CS 5200, CS 5220, CS 5520, CS 5910, CS 5920; Graduate students only.

MGMT - Management

MGMT 3000 - Integrated Skills for Management

3 Credits
Required for the core business courses. Students focus on three skill areas: refine communication for management (interpersonal, writing, and presentation); learn principles and practice of teamwork in a lab setting; learn project management in completing two complex projects focusing on outside groups and an ethics study. Students may take this course as a second-semester sophomore. Approved for Compass Curriculum requirement: Writing Intensive. Prer., ENGL 2080, ENGL 2090, or INOV 2100. Business students only; completion of 45 hours.

MGMT 3300 - Introduction to Management and Organization

3 Credits
An introductory study of management fundamentals and organizational behavior. How individuals adapt to organizations; how managers motivate and lead in work situations; how organizations are designed and managed. Students are urged to complete PSY 1000 and SOC 1110 before taking this course. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Prer., Junior standing.

MGMT 3900 - Improving Personal and Team Creativity

3 Credits
Covers the concepts and theories of creativity, but devotes most of the course time to specific, proven approaches to unlock and surface the student's innate creativity. Examples of creative approaches in business and industry are illustrated. Both individual and group creativity techniques are reviewed and practiced, with emphasis on how to form a creative work team. Prer., Junior standing.

MGMT 4110 - Experiences in Leadership

3 Credits
Through lectures, videos exercises, case studies, and a major project, students learn the needed skills to become effective leaders. Topics covered include building relationships, dealing with conflict, planning, change, teams and the major leadership theories that have been developed. Prer., MGMT 3300. Junior standing; Business students only.

MGMT 4370 - Organizational Development and Change

3 Credits
Introduction to the field of organization development. Provides practical skills for managers and human resource professionals in understanding, developing and changing individuals, teams and whole organizations. Students will also learn how to manage organization changes and increase the probability of successful change. Prer., MGMT 3300. Junior standing; Business students only.

MGMT 4500 - Principles of Negotiation and Conflict Management

3 Credits
Through a combination of study and hands-on practice, this course introduces students to distributive and integrative negotiation, third-party and multi-party dynamics, and dispute resolution. With a focus on preparation, strategy, interpersonal relationships, and ethics, students will build skills and confidence to become more effective in personal and professional negotiations. Attendance is mandatory. Prer., MGMT 3300, Business students only.

MGMT 4960 - Internship in Management

1-3 Credits
Undergraduate internship in Management or Human Resources Management. Approved for Compass Curriculum requirement: Navigate. Prer., Junior/Senior business students only.

MGMT 6000 - Leading and Managing in Changing Times

3 Credits
This course is designed to help students succeed personally and professionally in a rapidly changing, global world. The course begins with a focus on our changing environment and the need for personal and organizational excellence. The remainder of the course focuses on developing leadership and management skills and applying them to bringing out the best in individuals, groups, and organizations. Graduate business students only.

MGMT 6090 - Leading and Managing in Changing Times

3 Credits
Designed to help students succeed personally and professionally in a rapidly changing global world. Focuses first on our changing environment and the need for personal and organizational excellence, then on developing leadership and management skills and applying them to bringing out the best in individuals, groups, and organizations. Online graduate course. Tuition schedule differs from on-campus courses. Graduate business students only.

MGMT 6100 - Development of Groups and Organizations

3 Credits
An introductory study of the dynamics involved in managing and facilitating change in groups and organizations by application of behavioral science knowledge. Emphasis is

placed on both cognitive and experiential learning. Graduate business students only.

MGMT 6200 - Managing Organization Development, Change, and Transformation

3 Credits
In an environment of dynamic, non-stop change and increasing competition, organizations that have the best skills in developing healthy, high-performance organizations and managing change will have a competitive advantage. People who are trained in these skills can significantly increase their value to organizations. Course provides sound theory and practical training in how to successfully manage change, develop high-performing individuals, teams, and organizations, and transform organizations. Prer., MGMT 6000. Graduate business students only.

MGMT 6290 - Managing Organization Development, Change, and Transformation

3 Credits
In an environment of dynamic, non-stop change and increasing competition, organizations that have the best skills in developing healthy, high-performance organizations and managing change will have a competitive advantage. People who are trained in these skills can significantly increase their value to organizations. Course provides sound theory and practical training in how to successfully manage change, develop high-performing individuals, teams, and organizations, and transform organizations. Online graduate course. Tuition schedule differs from on-campus courses. Prer., MGMT 6090. Graduate business students only.

MGMT 6300 - Managing Human Resources for Competitive Advantage

3 Credits
Presents an overview of contemporary human resource management issues with an emphasis on conflict resolution and negotiation skills to enhance strategic organizational goals. Topics include the eight conflict resolution approaches, various negotiation approaches, employee recruitment, performance appraisal, employee development, reward systems, labor unions, and ethics. Req., Graduate students only.

MGMT 6390 - Managing Human Resources for Competitive Advantage

3 Credits
Presents an overview of contemporary human resource management issues with an emphasis on conflict resolution and negotiation skills to enhance strategic organizational goals. Topics include the eight conflict resolution approaches, various negotiation approaches, employee recruitment, performance appraisal, employee development, reward systems, labor unions, and ethics. Prer., Graduate business students only. Online graduate course. Tuition schedule differs from on-campus courses.

MGMT 6400 - Legal Issues in Managing Human Resources

3 Credits
Examines the profusion of legal, social, and ethical issues confronting human resource managers, though the course is appropriate for all majors. Emphasis is on equal employment opportunity, affirmative action, and safety and health. Other topics include sexual harassment, drug testing programs, employing the disabled, employee privacy rights, wrongful termination, and honesty testing. Application of principles are emphasized with in-class cases and exercises. The overall objective for the course is to explain how organizations can manage employees legally and ethically, while still maintaining a productive work force. Graduate business students only.

MGMT 6490 - Legal Issues in Managing Human Resources

3 Credits
Examines the legal, social, and ethical issues confronting human resource managers, though the course is appropriate for all majors. Emphasis is on equal employment opportunity, affirmative action, and safety and health. Other topics: sexual harassment, drug testing programs, employing the disabled, employee privacy rights, wrongful termination, and honesty testing. Explains how organizations can manage employees legally and ethically, while still maintaining a productive work force. Distance MBA course. Tuition differs from on-campus courses. Prer., Open to admitted MBA students only.

MGMT 6500 - Labor Relations and Negotiation

3 Credits
Examines the dynamic relationships between labor unions and employers. Topics include the history of labor relations in the United States, labor laws, organizing campaigns, collective bargaining, and conflict resolution. A major focus of this course is the development of students' negotiation skills, a key competency that is necessary for success in the world of business. Legal and ethical practices are emphasized. Meets with HRMG 4340.

MGMT 6550 - Applied Principles of Negotiation and Conflict Management

3 Credits
Students will build skills and confidence through simulations of real-world negotiations. Topics include basic principles of negotiation and dispute resolution, focusing on preparation and interpersonal relationships. Familiarity with Microsoft Excel and business concepts such as net present value is encouraged. Prer., MBA and Graduate Business Certificate students only.

MGMT 6960 - Internship in Management

1-3 Credits
Graduate internship for business students. Prer., Admitted MBA students only. Instructor and Dean approval.

MGMT 9400 - Independent Study in Management

1-3 Credits
Independent study with the consent of the instructor, who directs the study, and the dean.

MGMT 9500 - Independent Study in Management

1-3 Credits
Independent Study in Management-Graduate. With the consent of both the instructor who directs the study and the dean.

MKTG - Marketing

MKTG 3000 - Principles of Marketing

3 Credits
Analytical survey of issues involved with the development and exchange of goods and services. Takes a marketing management approach in attacking problems related to product planning, channels of distribution, pricing and promotion. Emphasizes the role of marketing in responding to changing environmental conditions. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., ENGL 1310 and second semester sophomore standing.

MKTG 3300 - Marketing Research

3 Credits
Course emphasizes marketing research as a decision-making tool for marketing managers. A variety of methodologies is explored. Course project provides students with hands-on experience in planning an investigation, data collection design, sampling, experimentation, interpretation of results, and report preparation. Prer., MATH 1120, QUAN 2010, and MKTG 3000. Junior standing; Business students only.

MKTG 3400 - Personal Selling and Sales Management

3 Credits
The development of effective personal selling skills is the focus of this course. The relationship between personal selling and the other elements of marketing strategy are analyzed. Concepts from the behavioral sciences are explored to show their application in sales situations including the psychology of selling and the importance of relationship building. Attention is focused on the development and demonstration of effective sales presentation techniques for retail, business-to-business, services and nonprofit selling. Each step in the selling process (the pre-approach, the approach and presentation, an analysis of possible objections, the closing and follow-up) will be extensively analyzed, discussed and applied. Social, ethical and legal issues in selling awareness will be examined. Prer., MKTG 3000; Business students only.

MKTG 3550 - Brand Management

3 Credits
Brand management focuses on understanding the concepts associated with building customer-based brand equity and managing brand identity and positioning. This course will analyze all aspects of a brands and brand management. The course concepts apply to both for-profit and non-profit organizations. While brand managers are responsible for sales and profitability for their brands, they are also entrusted with building brand equity and value over time. Students will learn how organizations create a competitive advantage by incorporating consumer insight into an effective branding strategy. Social, ethical and legal issues of brand management will be examined. Prer., MKTG 3000, Business students only.

MKTG 4400 - Service Management and Marketing

3 Credits
This course builds and expands on the introductory marketing course by showing adaptations and applications of marketing ideas to the service setting. The service component of business requires a distinctive approach to marketing strategy both in development and execution. In addition, quality service cannot be delivered without understanding and developing the organizational and human resources of the firm. Designed for those students who are interested in working in either traditional service industries or in the service areas of manufacturing industries. Prer., MKTG 3000. Junior standing. Completion of all skills courses or COB Undergraduate Director permission.

MKTG 4500 - Retailing Strategy

3 Credits
Prepares students to manage a successful retailing operation. Topics include retail strategy, marketing, finance, store operations, human resource management, buying, and supply chain issues. Prer., MKTG 3000; Business students only, Junior standing.

MKTG 4510 - Sport Marketing

3 Credits
Prepares students to market sports and entertainment products, events, services, and activities. Topics include the practical and legal aspects of sport event planning, promotion, and operations. Involves the development of a creative marketing plan for a community sporting event. Prer., MKTG 3000, College of Business students only.

MKTG 4550 - Contemporary Issues in Marketing

3 Credits
Course provides a comprehensive review of one or more marketing issues. The topics vary between semesters. Course uses a seminar format allowing in-depth discussion and exploration of topics. Prer., MKTG 3000. Junior standing. Completion of all skills courses or COB Director permission.

MKTG 4600 - Business to Business Marketing

3 Credits
Examines the major differences between business-to-business marketing and consumer marketing. Implications of these differences to the practice of marketing management are discussed. Special emphasis on the importance of customer relationships, personal selling, and sales management. Prer., MKTG 3000. Junior standing, Business students only.

MKTG 4650 - Promotion Management and Strategy

3 Credits
Emphasizes the coordinated usage of the promotions mix elements in order to synergize marketing efforts. Topics include advertising, direct marketing, internet and interactive marketing, sales promotions, public relations, and personal selling. The impact of buyer behavior on promotional strategy is examined and several communication models are analyzed. Prer., MKTG 3000. Junior standing, Business students only.

MKTG 4700 - Digital & Social Media Marketing

3 Credits
Provides a foundation and introduction into the strategy and tactics required for marketing in digital environments. The course focuses on key aspects of digital marketing currently used by professionals with particular attention given to the newest tools and techniques. Students apply concepts on a final project for real-world application in one of the most quickly changing business landscapes. Prer., MKTG 3000, Junior standing. Completion of all skills courses or COB Director permission.

MKTG 4800 - Marketing Planning & Strategies

3 Credits
Detailed consideration of the process of formulating and implementing marketing policies. Major emphasis on market analysis, product/brand management, promotion, distribution and pricing. Case analyses used to develop analytical abilities and to integrate all major areas of marketing. It is recommended that students take two required marketing courses in addition to MKTG 3000 before enrolling in this course. Prer., MKTG 3000. Junior standing. Completion of all skills courses or COB Director permission.

MKTG 4850 - Marketing Analysis and Planning Project

3 Credits
A comprehensive marketing research and planning project. Students work with a local business, under the supervision of the course instructor, to analyze a marketing opportunity and to develop a comprehensive plan to exploit that opportunity. Prer., MKTG 3000, MKTG 3300, MKTG 4650 and departmental approval.

MKTG 4900 - International Marketing

3 Credits
Provides an overview of marketing issues related to international markets. Major topics covered are description of major world markets, market analysis including cultural and political assessment, target market selection, market entry modes, marketing strategy, program management and implementation issues. INTB 3600 is recommended before or concurrently with the class. Prer., MKTG 3000. Junior standing. Completion of all skills courses or COB Director permission.

MKTG 4960 - Internship in Marketing

1-3 Credits
Undergraduate internship in marketing. Prer., Junior/senior business students only.

MKTG 6000 - Marketing Strategy

3 Credits
This course introduces the function and role of marketing in the firm, emphasizing the application of a broad range of marketing concepts. Marketing decisions are linked to business strategy using an integrated approach. Graduate business students only.

MKTG 6090 - Marketing Strategy

3 Credits
This course introduces the function and role of marketing in the firm, emphasizing the application of a broad range of marketing concepts. Marketing decisions are linked to business strategy using an integrated approach. Online graduate course. Tuition schedule differs from on-campus courses.

MKTG 6100 - MBA Seminar in Contemporary Topics in Marketing

3 Credits
An in-depth examination of selected topics in marketing. Course topics are chosen based on their current importance to the theory and practice of marketing. This study of advanced marketing material is accomplished through various activities including presentation, discussion groups, and experiential learning activities.

MKTG 6300 - Marketing Analytics

3 Credits
Emphasis on hands-on experience using statistical models to address marketing and other business problems. Open to admitted MBA students only. Prer., QUAN 5500, and MKTG 6000 or OPTM 6000.

MKTG 6390 - Marketing Analytics

3 Credits
Emphasis on hands-on experience using statistical models to address marketing and other business problems. Open to admitted MBA students only. Online graduate course. Tuition schedule differs from on-campus courses. Prer., QUAN 5500, and MKTG 6000 or OPTM 6000.

MKTG 6400 - Service Marketing

3 Credits
This course builds and expands on the introductory marketing course by showing adaptations and applications of marketing ideas to the service setting. The service component of business requires a distinct approach to marketing strategy in both design and execution. This course focuses on the drivers of customer value and the unique challenges presented by services. Topics include the services marketing mix, customer expectations and satisfaction, service quality dimensions, service design, internal marketing and planning for services. Graduate business students only.

MKTG 6500 - Integrated Marketing Communications

3 Credits
Theories of communication and buyer behavior are applied to the process of communicating with critical constituencies. Emphasis is on the practical aspects of creating and managing effective marketing communication programs with special attention being placed on integrated marketing communications. Open to admitted MBA students only. Prer., MKTG 6000.

MKTG 6590 - Integrated Marketing Communications

3 Credits
Theories of communication and buyer behavior are applied to the process of communicating with critical constituencies. Emphasis is on the practical aspects of creating and managing effective marketing communication programs with special attention being placed on integrated marketing communications. Online graduate course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only. Prer., MKTG 6090.

MKTG 6700 - Digital Marketing and Social Media Strategy

3 Credits
Provides a foundation and introduction into the strategy and tactics required for marketing in digital environments. The course focuses on key aspects of digital marketing currently used by professionals with particular attention given to the newest tools and techniques. Students apply concepts on a final project for real-world application in one of the most quickly changing business landscapes.

MKTG 6790 - Digital Marketing and Social Media Strategy

3 Credits
This course is an applied overview of digital marketing and social media strategy. Students utilize industry-standard digital marketing tools and business cases to learn how to create, manage, and execute a real-world digital marketing strategy. Online graduate course. Tuition schedule differs from on-campus courses. Prer., MBA, MSA, and Business Graduate Certificate students only.

MKTG 6900 - International Marketing and Export Management

3 Credits
Provides an overview of international marketing issues. Provides detailed analysis of each marketing mix element from a global perspective. Special emphasis is placed on managing the export function, how cultural differences impact marketing strategies and tactics, and on international marketing ethics. Open to admitted MBA studentsonly. Prer., MKTG 6000.

MKTG 6960 - Internship in Marketing

1-3 Credits
Graduate internship in marketing. Prer., Instructor and Dean approval.

MKTG 6990 - International Marketing and Export Management

3 Credits
Provides an overview of international marketing issues. Provides detailed analysis of each marketing mix element from a global perspective. Special emphasis is placed on managing the export function, how cultural differences impact marketing strategies and tactics, and on international marketing ethics. Online graduate course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only. Prer., MKTG 6090.

MKTG 9400 - Independent Study in Marketing - Undergraduate

1-3 Credits
With the consent of the instructor who directs the study and the dean. Prer., Junior standing.

MKTG 9500 - Independent Study in Marketing - Graduate

1-3 Credits
Independent study in Marketing at the graduate level given with the consent of the instructor who directsthe study and the dean. Prer., Consent of instructor and dean.

MSGP - Museum Studies & Gallery Pract.

MSGP 2000 - Introduction to Museum Studies and Gallery Management

3 Credits
Introduces students to the basic principles and methods of museum and gallery work. Explores the origin and history of museums, their role in society, and the core museum functions of collection, preservation, education and exhibition.

MSGP 4030 - Museum Studies and Gallery Management: Internship

1-6 Credits
Supervised opportunities for students in museum studies and gallery management to apply relevant knowledge and skills in professional situations. Prer., MSGP 2000 or consent of instructor.

MSGP 4040 - Gallery Management I

3 Credits
Seminar and practical hands-on experience in administration, fundraising, curatorial selection, publicity, and installation of contemporary exhibits. Organization and research of programs at the gallery for contemporary art will be the focus of activities in addition to case studies and evaluation of pertinent off-campus exhibits. Prer., MSGP 2000 or consent of instructor.

MSGP 4050 - Gallery Management II

3 Credits
Continuation of MSGP 4040 with emphasis on development of concepts of gallery management and exhibition organization. Prer., MSGP 2000 or consent of instructor.

MSGP 4060 - Exhibit Design and Development

3 Credits
Introduces general principles of planning, development, production, and evaluation of museum and gallery exhibits. Students will have the opportunity to do exhibit mockups and exhibit evaluation. The team approach is emphasized. Prer., MSGP 2000 or consent of instructor.

MSGP 4070 - Collections Management

3 Credits
Deals specifically with curation and data management. Covers the principles and methods regarding acquisition, documentation, conservation, and accessibility of collections. Also discussed: Laws, registration methods, computerization, policy development, ethics, and preventative conservation. Prer., MSGP 2000 or consent of instructor.

MSGP 4080 - Museum and Gallery Education

3 Credits
Comprehensive introduction to museum and gallery education and skill development. Examines informal education, learning theories, interactive education, exhibits and programs. Principles and methods of evaluation will also be covered. Prer., MSGP 2000 or consent of instructor.

MSGP 4090 - Museum Administration

3 Credits
Covers theory of organizations and how it applies to museums, application of small business management and nonprofit organization to museums, marketing and development, and grant-writing and funding strategies. Prer., MSGP 2000 or consent of instructor.

MSGP 4100 - Native American Perspectives on Museums

3 Credits
Explores the history of the museum enterprise vis-a-vis Native Americans: development of museum collections; poetics and politics of representation; the Native American Graves Protection and Repatriation Act (NAGPRA); and the reinterpretation of museology from indigenous perspectives, looking especially at the National Museum of the American Indian. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement - Explore-Society, Health and Behavior. Prer., Junior or Senior standing. Meets with WEST 4100.

MSGP 4200 - Special Topics in Museum Studies and Gallery Management

3 Credits
Intensive study of selected topics in Museum Studies and Gallery Management. Prer., MSGP 2000 or consent of instructor.

MSGP 9400 - Independent Study in Museum Studies and Gallery Management

1-4 Credits
Independent study in museum studies and gallery management to be arranged with director.

MUS - Music

MUS 1000 - Introduction to Music

3 Credits
A music appreciation course. The content is oriented toward classical music which is taught in an historical chronology. Excursions into non-western music and American jazz will supplement the course content. Attending concerts is required. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 1010 - Music Theory I

3 Credits
Covers the basic building blocks of music, including overtones, rhythm and meter, scales, chords, harmonic progression and beginning four-voice part writing. The development of written and aural skills is the highest priority. Required for the music minor. Students must be concurrently enrolled in MUS 1030.

MUS 1030 - Sight Singing and Ear Training I

1 Credit
First semester course in a two-semester sequence. Students will develop the skills of sight reading, melodic and harmonic dictation, and rhythm reading, interpretation, and execution.

MUS 1040 - Class Piano

1 Credit
Designed for students who have little or no musical background and few or no piano skills. Students will learn the fundamentals of piano playing, as well as the basics of music notation, theory and musicianship. Students will

also be exposed to a performance environment, and work to develop strong practice habits.

MUS 1310 - University Choir

1 Credit
Study and performance of choral music. Open to all qualified students. May be repeated three times for a total of 6 hours of credit.

MUS 1510 - Private Music Instruction

1 Credit
This course is a practicum in applied music practice (instrumental or vocal lessons). Students take weekly private lessons on their major instrument or vocal type (lab) through Extended Studies in conjunction with this course.

MUS 1600 - Applied Music - Private Instruction

1 Credit
Private instrument and voice instruction - for all instruments and voice types - open to all students regardless of musical background. Twelve 45-minute lessons (or the equivalent) are offered with the meeting time and place to be arranged with the instructor. Lessons will cover technique, interpretation and musical style. Students are required to attend music program seminars held the first Friday of each month and must perform before a jury at the end of the semester.

MUS 1601 - Applied Music - Private Instruction (Flute)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style.

MUS 1602 - Applied Music - Private Instruction (Clarinet)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1603 - Applied Music - Private Instruction (Oboe)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1604 - Applied Music - Private Instruction (Saxophone)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1610 - Applied Music - Private Instruction (Trumpet)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1611 - Applied Music - Private Instruction (Trombone)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1620 - Applied Music - Private Instruction (Violin)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1621 - Applied Music - Private Instruction (Viola)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1622 - Applied Music - Private Instruction (Cello)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1623 - Applied Music - Private Instruction (Bass)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1624 - Applied Music - Private Instruction (Guitar)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1630 - Applied Music - Private Instruction (Piano)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1631 - Applied Music - Private Instruction (Jazz Piano)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor.

Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1640 - Applied Music - Private Instruction (Drumset)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1641 - Applied Music - Private Instruction (Orchestral Percussion)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1650 - Applied Music - Private Instruction (Voice)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 1660 - Applied Music - Private Instruction (Composition)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style.

MUS 2010 - Advanced Music Theory

3 Credits
Continuation of Music Theory I. Topics of study are advanced four-part writing, change of key, preparation and resolution of dissonance, chromatic harmonies and working with free rhythmic textures. Advanced Music Theory is required for the minor in music. Prer., MUS 1010 or consent of instructor. Students must be concurrently enrolled in MUS 2030.

MUS 2030 - Sight Singing and Ear Training II

1 Credit
Focuses on advanced sight singing and ear training skills. Continues perfecting solfege using musical examples from the texts that feature modulations, key changes, and enharmonic situations. Students will learn to read compound meter as well as transcribe melodic and harmonic musical examples. Prer., MUS 1030.

MUS 2050 - Jazz History

3 Credits
Examines the history of Jazz music and culture. Starting with the mid-1800s, this class explores the influences and developments of this American art form throughout the twentieth century. Learn about the main contributors, developing musical styles, and how Jazz engaged with social and political issues throughout the course of history. Approved for LAS Humanities area and Cultural Diversity requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-AH1.

MUS 2100 - Rock and Roll Music

3 Credits
This introductory level history and music appreciation course will survey the major musical, social and economic trends in Rock and Roll music from its roots in the popular music of the late 1800's to the present. Students will sharpen their musical analysis skills through listening and active participation. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2150 - The Computer in Music

3 Credits
Students will explore the history of computer music, including its development, methods, techniques, and applications. Students will then learn a variety of present day widely used software and complete a project of computer music creation which will result in a demonstration/performance. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2200 - Balinese Gamelan Ensemble

1 Credit
An introduction to the Balinese Gamelan Gong Kebyar orchestral tradition. Students will develop skills and techniques, study music history, and learn pieces from the Gamelan Gong Kebyar repertory. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2210 - Mountain Lion Pep/Concert Band

1 Credit
The Mountain Lion Pep Band Ensemble performs for campus functions, athletic events, and in concert. Performs a wide range of musical styles from concert band music to soul, R&B, and popular music. A scholarship is available by audition. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2250 - Jazz and Improvisation Ensemble

1 Credit
A rehearsal and performance based ensemble class whose main objective will be to develop a new repertoire every semester representing different styles and periods from the jazz idiom. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2300 - Electronic Acoustic Ensemble

2 Credits
Utilizes any combination of electronic instruments and computer music with any traditional acoustic instrumentation. The process of musical creation is generated through the study of improvised music, composition, and multimedia forms. Is inclusive to all traditional genres and can accommodate musicians from all styles and individuals with solid musical background. Prer., Consent of instructor.

MUS 2310 - VAPA Vocal Ensemble

2 Credits
Ensemble will study, rehearse and perform from a wide range of vocal music traditions including folk and ethnic, western classical, gospel, jazz and 20th century experimental avant-garde. It will encompass music that is from composed, oral and improvised music traditions.

MUS 2350 - Vocal Jazz Ensemble

1 Credit
Practical and performing experience in vocal jazz. Includes music from the 1920's through the present. Requires participation in various performances on campus and in the community throughout the semester. Prer., Audition.

MUS 2400 - Chamber Music Ensemble

2 Credits
The Ensemble will rehearse and perform literature from western classical chamber music. The repertoire will range from the baroque, classical and 20th century contemporary music periods. All instruments from strings, woodwind, brass, and percussion are welcome. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 2450 - Music Theatre Performance and Practice

1-3 Credits
Focuses on the developing musical skills and a historical context of the genre of musical theatre. Topics include vocal techniques, music theatre repertoire, audition and rehearsal techniques, role preparation, as well as acting and dancing basics. Meets with THTR 2450.

MUS 2600 - Private Instruction: Advanced

1 Credit
Private instrument and voice instruction, for all instruments and voice types. Open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1600 or instructor permission.

MUS 2601 - Applied Music - Private Instruction (Flute)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1601 or equivalent (instructor approval required).

MUS 2602 - Applied Music - Private Instruction (Clarinet)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style. Prer., MUS 1602 or equivalent (instructor approval required).

MUS 2603 - Applied Music - Private Instruction (Oboe)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1603 or equivalent (instructor approval required).

MUS 2604 - Applied Music - Private Instruction (Saxophone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1604 or equivalent (instructor approval required).

MUS 2610 - Applied Music - Private Instruction (Trumpet)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1610 or equivalent (instructor approval required).

MUS 2611 - Applied Music - Private Instruction (Trombone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1611 or equivalent (instructor approval required).

MUS 2620 - Applied Music - Private Instruction (Violin)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1620 or equivalent (instructor approval required).

MUS 2621 - Applied Music - Private Instruction (Viola)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1621 or equivalent (instructor approval required).

MUS 2622 - Applied Music - Private Instruction (Cello)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1622 or equivalent (instructor approval required).

MUS 2623 - Applied Music - Private Instruction (Bass)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1623 or equivalent (instructor approval required).

MUS 2624 - Applied Music - Private Instruction (Guitar)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1624 or equivalent (instructor approval required).

MUS 2630 - Applied Music - Private Instruction (Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1630 or equivalent (instructor approval required).

MUS 2631 - Applied Music - Private Instruction (Jazz Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1631 or equivalent (instructor approval required).

MUS 2640 - Applied Music - Private Instruction (Drumset)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1640 or equivalent (instructor approval required).

MUS 2641 - Applied Music - Private Instruction (Orchestral Percussion)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1641 or equivalent (instructor approval required).

MUS 2650 - Applied Music - Private Instruction (Voice)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1650 or equivalent (instructor approval required).

MUS 2660 - Applied Music - Private Instruction (Composition)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 1660 or equivalent (instructor approval required).

MUS 2850 - Topics in Music History and Research I

3 Credits
Selected topics within European art music, including formal and stylistic developments from Antiquity through the late Baroque/early Classical transition. Development of critical thinking and writing skills by comparing cultural artistic aesthetics within various musical traditions, as well as research methodologies. Approved for LAS Humanities area requirement.

MUS 2950 - Introduction to Sound and Audio Recording

3 Credits
A foundation course that provides an introduction to sound and audio recording principles and techniques. Students will gain an understanding of sound control, room acoustics, microphone, mixing, set-up, recording systems, vocal and instrument recording, and audio and music post-production.

MUS 3010 - Music Theory III: Form & Analysis

3 Credits
A continuation and complement of MUS 101 and 201. Modes, keys, rhythms, meters, harmonies and non-harmonic tones will be analyzed within the context of forms in music. Content will be presented in and historical context from the medieval period to modernism, including contemporary music, jazz, and song forms throughout the 20th century. Prer., MUS 1010 and MUS 2010. Students must be concurrently enrolled in MUS 3030.

MUS 3030 - Sight Singing and Ear Training III

1 Credit
Focuses on advanced sight singing and ear-training skills, lifting off from Ear Training II with distant modulations, key changes, compound meter, and enharmonic dictation. Prer., MUS 1030 and MUS 2030.

MUS 3150 - Introduction to Ethnomusicology

3 Credits
An introduction to the music of various non-western cultures, including those of Africa, Asia, and the Americas. Examines relationships between music and culture, based on interpretation and critical analysis through readings, recordings, and film. Beginning fieldwork projects. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

MUS 3200 - Adv Computer Music Composition

3 Credits
A continuation of MUS 2150 - the Computer in Music. Covers more specialized software and computer music applications. Prer., MUS 2150.

MUS 3320 - The Business of Music: Individual Career Design and Professional Skills

3 Credits
The focus of this course is to develop music career strategies, skills, and knowledge in performance, teaching studios, music technology, law, event production and management, publishing, small business operation and principles of entrepreneurship. Prer., Junior or Senior standing.

MUS 3410 - Sonic Landscapes: Ecoacoustic Music, Geography, and Environment

3 Credits
This is a cross-disciplinary course bridging creative sound art and music practices with geography, naturalism, and environmentalism through the exploration of local geographies, landscapes, and the natural world. Approved for Compass Curriculum requirement: Navigate. Meets with GES 3410.

MUS 3450 - Advanced Musical Theatre: Performance and Practice

3 Credits
Continuation of beginning musical theatre course (MUS 2450 or THTR 2060). Intense scene study, vocal training and coaching lead to a final showcase. Prer., MUS 2450 or THTR 2060. Meets with THTR 3060.

MUS 3600 - Private Instruction: Junior Recital

1 Credit
MUS 3600 should be taken in the junior year.

The main requirement is for the student to develop the junior recital repertoire, creative work, and/or compositions/sound designs. Students are required to perform 30 minutes of music. Prer., MUS 2600.

MUS 3601 - Applied Music - Private Instruction (Flute)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2601 or equivalent (instructor approval required).

MUS 3602 - Applied Music - Private Instruction (Clarinet)

1 Credit
Private instruction - open to all students regardless of major. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation and musical style. Prer., MUS 2602 or equivalent (instructor approval required).

MUS 3603 - Applied Music - Private Instruction (Oboe)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2603 or equivalent (instructor approval required).

MUS 3604 - Applied Music - Private Instruction (Saxophone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2604 or equivalent (instructor approval required).

MUS 3610 - Applied Music - Private Instruction (Trumpet)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2610 or equivalent (instructor approval required).

MUS 3611 - Applied Music - Private Instruction (Trombone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2611 or equivalent (instructor approval required).

MUS 3620 - Applied Music - Private Instruction (Violin)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2620 or equivalent (instructor approval required).

MUS 3621 - Applied Music - Private Instruction (Viola)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2621 or equivalent (instructor approval required).

MUS 3622 - Applied Music - Private Instruction (Cello)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2622 or equivalent (instructor approval required).

MUS 3623 - Applied Music - Private Instruction (Bass)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2623 or equivalent (instructor approval required).

MUS 3624 - Applied Music - Private Instruction (Guitar)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2624 or equivalent (instructor approval required).

MUS 3630 - Applied Music - Private Instruction (Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2630 or equivalent (instructor approval required).

MUS 3631 - Applied Music - Private Instruction (Jazz Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2631 or equivalent (instructor approval required).

MUS 3640 - Applied Music - Private Instruction (Drumset)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the in-

structor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2640 or equivalent (instructor approval required).

MUS 3641 - Applied Music - Private Instruction (Orchestral Percussion)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2641 or equivalent (instructor approval required).

MUS 3650 - Applied Music - Private Instruction (Voice)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2650 or equivalent (instructor approval required).

MUS 3660 - Applied Music - Private Instruction (Composition)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 2660 or equivalent (instructor approval required).

MUS 3700 - Film Scoring & Music Composition

3 Credits
This course will provide students with an understanding of the tools, crafts, methods and history of the art of film music scoring and composition. Prer., MUS 1010, MUS 2010, and MUS 2150. Meets with FILM 3700.

MUS 3850 - Topics in Music History and Research II

3 Credits
Selected topics within European art music, including formal and stylistic developments from the early Classical period (ca. 1760) through 1960. Continued development of critical thinking and writing skills by comparing cultural artistic aesthetics within various musical traditions, as well as research methodologies. Prer., MUS 2850.

MUS 4010 - Music Theory IV: Jazz and Contemporary Music Theory

3 Credits
Covers the developments of theory and harmony that bridge classical western music theory to contemporary styles of jazz, contemporary classical and popular music traditions. Prer., MUS 1010, MUS 2010, and MUS 3010.

MUS 4030 - Internship in Music

1-3 Credits
Designed musical experience involving specific application of relevant concepts and skills in supervised professional situations. Pass/Fail only. Prer., Permission of Program Director.

MUS 4250 - The Business of Music: Entrepreneurship and Creative Enterprise

3 Credits
This course partners musicians with individuals from other disciplines towards a real-world model that is essential for artistic and business success. Via engaging in long-term and meaningful group projects, students address industry-specific topics as well as crucial "soft" skills. Approved for Compass Curriculum requirement: Navigate.

MUS 4300 - Creative Music Ensemble: The Score and Composition

2 Credits
The Creative Music Ensemble will rehearse and perform repertoire from a range of contemporary music and participate in an in-depth study and analysis of scores and extended musical notation. In addition, students will rehearse and perform student compositions. Prer., MUS 2300, VAPA 3950.

MUS 4600 - Private Instruction: Senior Recital

1 Credit
MUS 4600 should be taken in the senior year, and students should be concurrently enrolled in MUS 4980 Music Capstone. The main requirement is for the student to work with the private instructor to develop, rehearse, and prepare the senior recital. This work will overlap somewhat with the Capstone course as the senior Thesis will be required to address senior recital material ? repertoire, creative work, compositions/sound designs. Ten instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Prer., MUS 3600 or instructor permission.

MUS 4601 - Applied Music - Private Instruction (Flute)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3601 or equivalent (instructor approval required).

MUS 4602 - Applied Music - Private Instruction (Clarinet)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3602 or equivalent (instructor approval required).

MUS 4603 - Applied Music - Private Instruction (Oboe)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3603 or equivalent (instructor approval required).

MUS 4604 - Applied Music - Private Instruction (Saxophone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3604 or equivalent (instructor approval required).

MUS 4610 - Applied Music - Private Instruction (Trumpet)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3610 or equivalent (instructor approval required).

MUS 4611 - Applied Music - Private Instruction (Trombone)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3611 or equivalent (instructor approval required).

MUS 4620 - Applied Music - Private Instruction (Violin)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3620 or equivalent (instructor approval required).

MUS 4621 - Applied Music - Private Instruction (Viola)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3621 or equivalent (instructor approval required).

MUS 4622 - Applied Music - Private Instruction (Cello)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3622 or equivalent (instructor approval required).

MUS 4623 - Applied Music - Private Instruction (Bass)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3623 or equivalent (instructor approval required).

MUS 4624 - Applied Music - Private Instruction (Guitar)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3624 or equivalent (instructor approval required).

MUS 4630 - Applied Music - Private Instruction (Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3630 or equivalent (instructor approval required).

MUS 4631 - Applied Music - Private Instruction (Jazz Piano)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3631 or equivalent (instructor approval required).

MUS 4640 - Applied Music - Private Instruction (Drumset)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3640 or equivalent (instructor approval required).

MUS 4641 - Applied Music - Private Instruction (Percussion)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3641 or equivalent (instructor approval required).

MUS 4650 - Applied Music - Private Instruction (Voice)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3650 or equivalent (instructor approval required).

MUS 4660 - Applied Music - Private Instruction (Composition)

1 Credit
Private instruction. Open to all students regardless of major. Ten (10) instructional hours per semester are offered with the meeting time and place to be arranged with the instructor. Lessons will cover more advanced issues of technique, interpretation, and musical style. Prer., MUS 3660 or equivalent (instructor approval required).

MUS 4750 - Contemporary Music: Cultures, Designs, and Aesthetics

3 Credits
This course will focus on the history of contemporary ?art? music from a variety of music traditions. From a non-chronicle perspective, this course will highlight how sound, environment, technology, aesthetics and more play an important role in the development of musical genres and forms from the 20th century to

the present. Prer., MUS 1010/1020 or consent of instructor. Meets with MUS 5750.

MUS 4900 - Spec Tpcs in Music and Dance:

3 Credits
Through the study of historical and contemporary convergences across music, sound, dance and movement, students will develop collaborative languages and methods in order to build and articulate original works. Topics will vary each semester. Meets with DNCE 4900.

MUS 4950 - Special Topics

1-3 Credits
Special topics are usually taught on a one-time basis. Subjects offered will respond to special interest or rapidly changing topics.

MUS 4960 - Advanced Special Topics

1-3 Credits
Special topics usually taught on a one-time basis. Subjects offered will respond to special interest or rapidly changing topics. Can be taken twice for credit but not more than 6 hours may apply toward graduation. Prer., MUS 1010 or consent of instructor.

MUS 4980 - Music Capstone: Senior Thesis

3 Credits
A lecture and practicum in the development of music creation skills that integrates current trends in composition, improvisation, and performance practices in acoustic, electro acoustic, and interdisciplinary settings. Approved for Compass Curriculum requirement: Summit. Prer., VAPA 3900 or VAPA 3950, Senior standing.

MUS 5410 - Sonic Landscapes: Ecoacoustic Music, Geography, and Environment

3 Credits
This is a cross-disciplinary course bridging creative sound art and music practices with naturalism and environmentalism by exploring the sonic environments of local/regional geographies. Students will learn high-level music technology applications for field recording, soundscape creation, geography, geotechnology, and music performance practices. Meets with MUS 3410 and GES 3410.

MUS 5750 - Contemporary Music: Cultures, Designs, and Aesthetics

3 Credits
This course will focus on the history of contemporary ?art? music from a variety of music traditions. From a non-chronicle perspective, this course will highlight how sound, environment, technology, aesthetics and more play an important role in the development of musical genres and forms from the 20th century to the present. Prer., MUS 1010/1020 or consent of instructor. Prer., MUS 3850. Meets with MUS 4750.

MUS 9400 - Independent Study in Music

1-4 Credits
Undergraduate independent study in music with a full time professor by arrangement.

NAVI - Navigate

NAVI 3202 - Business,Government, & Society

3 Credits
An examination of interrelationships between business, society, and government. Explores the legal and ethical significance of transactions in the business decision-making processes. Approved for Compass Curriculum requirements: Sustainability; Navigate. Prer., Junior standing. Meets with BGSO 4000.

NAVI 3903 - Energy, Energy Systems, and Energy Policy

3 Credits
The topic of energy is explored from perspectives representing the traditional disciplines of hard science, engineering, and business/policy. A focus on interdisciplinary interaction, the analysis of existing ventures, and the proposal of a new venture will provide real-world relevant experience. Approved for Compass Curriculum requirements: Navigate; Sustainability; Writing Intensive. Prer., MATH 1040.

NURS - Nursing

NURS 1010 - Pharmacological Math

1 Credit
A prerequisite course for medication administration. Prepares the student to work with common drug calculations applicable to concepts of measurement, conversions, and calculation of oral, parenteral, and intravenous drug dosages. Prer., Nursing majors only.

NURS 1160 - Therapeutic Communications

1 Credit
Emphasizes communication skills as a foundation for human caring and therapeutic relationships. Personal effectiveness is enhanced by participating in and critiquing video role plays. Coreq., NURS 2080. Nursing majors only.

NURS 1230 - Foundations of Nursing Practice

3 Credits
Introduces students to the profession including a survey of the knowledge necessary to the discipline, the context of practice, and the societal foundations for practice. Course content and activities provide beginning socialization as a member of the profession including socialization to professional education and the curriculum of Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences. Professional values and personal knowing are examined. Trends in health care legislation, economics, policy, and the Institute of Medicine core competencies for health care professionals are explored. A beginning personal philosophy of nursing is developed. Prer., Nursing majors only.

NURS 2010 - Introduction to Correctional Health Care Systems

3 Credits
Correctional health is the practice of providing patient care within the unique environment of the criminal justice system which includes jail, prisons, and juvenile detention centers. Provides an overview of the social and political conditions facing health providers. Meets with NURS 5010.

NURS 2020 - Correctional Health Ethics and Law

3 Credits
Correctional issues and specific state laws will be described as they relate to preexisting conditions and self-inflicted injury. Accreditation process and national standards will provide a framework for discussion. Meets with NURS 5020.

NURS 2030 - Mental Health Issues in Correctional Institutions

3 Credits
This course will provide an overview of the prevalence of mental health issues being addressed within correctional institutions. Specific mental health diagnoses and associated

respective behaviors will be described that require frequent attention by correctional professionals.

NURS 2040 - Correctional Health Care of the Older Adult

3 Credits
Overview of developmental issues facing elderly incarcerated individuals. Chronic disease management and compliance through assessment are emphasized as they affect health status. The course addresses health-seeking behaviors and ineffective individual coping to facilitate assessment by correctional officers.

NURS 2050 - Pharmacology

3 Credits
Provides foundation for understanding pharmacodynamics and drug administration. Therapeutic interventions are emphasized, including patient teaching, safety considerations, and legal/ethical issues. Prer., BIOL 2010 and BIOL 2020. Nursing majors only.

NURS 2060 - Statistics for Nurses

3 Credits
Introduction to the practical and theoretical fundamentals of the statistics essential to the interpretation of nursing and medical research. Includes descriptive statics (frequency distribution, measures of central tendency and variability) and inferential statistics (correlation, t-tests and analysis of variance). Prer., Nursing majors, RN-BSN and/or Dual Enrollment Students only.

NURS 2080 - Health Promotion

3 Credits
Provides the theoretical underpinnings for health promotion and disease prevention as a foundation for nursing practice. Delineates interventions and maintenance strategies for encouraging healthy lifestyles, creating supportive environments, strengthening community action and building healthy public policy. Approved for Compass Curriculum requirement: Sustainability; Inclusiveness (Global/Diversity). Coreq., Nurs 1160. Nursing majors only.

NURS 2100 - Basic Health Assessment

4 Credits
Focuses on the empirics and esthetics of health assessment. Develops knowledge and skills integral to the acquisition of health assessment in clinical practice lab. Prer., BIOL 2010, BIOL 2020, and BIOL 2050 or consent of lead of faculty. Nursing majors only.

NURS 2200 - Fundamentals of Nursing Practice

6 Credits
Presents the empirical fundamental knowledge of basic nursing care. Clinical practice labs and seminars provide the student the opportunity to develop psychomotor skills and recognize the impact of personal, esthetic and ethical knowing on caring in beginning nursing practice. (Theory and clinical laboratory.) Approved for Compass Curriculum requirement: Writing Intensive. Prer., NURS 1230, NURS 2080, NURS 2100, NURS 1010 or HSCI 1010 and NURS 2050 or HSCI 2050.

NURS 2400 - Mental Illness in the Movies

3 Credits
Focuses on portrayals of mental illness in films. This course explores these portrayals of psychopathology in the context of society: individual and public perceptions of mental illness, how perception shapes public policy and influences society and the effects on professional attitudes, education, and behavior. Active student participation in discussions and activities is required. Prer., Sophomore standing and introductory psychology course, or permission of instructor.

NURS 2470 - Spanish for Healthcare Providers

3 Credits
A basic Spanish class designed to enhance communication between healthcare providers and their Spanish speaking patients.

NURS 2500 -Patient Simulation & Performance

3 Credits
An introduction to medical acting including learning common signs and symptoms of illness. Learners will practice the role of the patient and give feedback to healthcare students regarding skills and communication.

NURS 2610 - Changes Across the Lifespan: Oral Motor/Feeding and Development

3 Credits
The incidence of feeding and swallowing issues in this course will outline typical feedings/swallowing development and diagnoses and/or life experiences that may impact the acquisition of oral feeding skills as well as disease processes that impact swallowing later in life. Appropriate nursing supports, interventions and community resources will be identified.

NURS 2990 - Basic Clinical Practicum

1 Credit
Offers a clinical laboratory experience in settings that increase proficiency in technical skills, communication, health assessment and the nursing process. Prer., NURS 2100 and NURS 2200. Meets with NURS 3990.

NURS 3010 - Pathophysiology

3 Credits
Pathophysiological concepts build on previous principles from anatomy, physiology, chemistry, and microbiology. This course correlates underlying genomics and pathophysiological processes at the system level to manifestations in individuals as signs, symptoms, laboratory findings to enable critical thinking and decision making. As the basis for the empirical pattern of knowing, it provides an understanding of selected complex disease processes to facilitate interdisciplinary interventions. Prer., BIOL 2010, BIOL 2020, and either CHEM 1201 and CHEM 1211 or CHEM 1221. Coreq., NURS 2100. Nursing Majors Only.

NURS 3040 - Patterns of Knowing (RN)

3 Credits
An overview of concepts of professional nursing practice for the registered nurse student. Includes history and trends of professional nursing, universal theories and various theorists, professional roles, Beth-El College philosophy and conceptual framework, nursing process and socialization into nursing. Prer., RN status.

NURS 3050 - Health Assessment (RN)

3 Credits
Focuses on the empirics and esthetics of health assessment. Enhances further development of health assessment skills in laboratory. Prer., RN Status, BIOL 2010 and BIOL 2020, or consent of lead faculty.

NURS 3100 - Mental Health Nursing

6 Credits
Focuses on the practice of mental health nursing. Students develop critical thinking skills to

create the environment for exploring the human health experience. (Theory and clinical laboratory) Prer., All second year courses.

NURS 3200 - Nursing Care of Adults I

6 Credits
Emphasizes the art and science of nursing care for the adult. Explores medical-surgical nursing concepts using a scientific problem-solving approach. Clinical laboratory experiences are in the acute care setting. (Theory and clinical laboratory) Prer., All second year courses; prior or concurrent enrollment in HSCI 301.

NURS 3210 - Nursing Care of Adults II

6 Credits
Applying fundamental patterns of knowing, student continues to explore adult medical-surgical alterations. Clinical laboratory experiences primarily in acute care setting. Further refinement of organizational skills and competency and continued development of critical thinking and decision making. Prereq., NURS 2200. Coreq., NURS 3200. Nursing majors only.

NURS 3570 - Therapeutic Touch and Health

3 Credits
Provides an opportunity to explore and experience energy based healing methods. Other selected healing modalities will include stress reduction techniques, meditation, centering, creative visualization, use of color and other energy techniques.

NURS 3580 -Palliative Care & End of Life Care

3 Credits
Focus is on nursing care for the chronically and terminally ill. Principles of palliative and end of life care using an interdisciplinary and holistic approach are applied across all practice settings.

NURS 3600 - Clinical Decisions

3 Credits
This course is designed for students to practice clinical reasoning and judgement. Content will focus on learning how to think like a nurse using case studies, videos, simulation, role play and prioritization using multiple patient scenarios. Prer., NURS 1090 or NURS 2200

NURS 3610 - Interpersonal & Family Violence

3 Credits
This course examines the causes and consequences of interpersonal and family violence as well as the influence of culture and community. Current topics and issues related to violence prevention, intervention, and policy will be discussed from an interdisciplinary perspective. Subtypes of violence covered include child abuse, dating violence, domestic violence, and elder abuse. Prer., Sophomore level or above. Meets with NURS 5110.

NURS 3700 - Partners in Practice I

1-3 Credits
Provides nursing students the opportunity to refine nursing skills in actual practice situations. Provided through a collaborative agreement with acute care delivery settings and therefore credit to contact hours may vary dependent on the educational/work relationship established. Prer., NURS 210 and NURS 220, and of instructor.

NURS 3850 - Nursing Externship

2-3 Credits
Externs, under the preceptorship of a registered nurse, provide direct patient care in selected clinical areas. Enhances competency and critical decision making in the reality of the practice setting. Prer., All third year courses.

NURS 3990 - Clinical Practicum

1 Credit
Offers a clinical laboratory experience in settings that increase proficiency in technical skills, communication, health assessment and the nursing process. Prer., NURS 2200 and NURS 3200 or consent of lead faculty. Meets with NURS 2990.

NURS 4000 - Complementary Healing Methods

3 Credits
This survey course will present an overview of the history, theoretical bases, applications, resources, and trends of complementary healing methods. Western scientific thought and Eastern medical theories will be examined for understanding current health perspectives and treatment modalities.

NURS 4010 - Nursing Research

3 Credits
Develops a fundamental understanding of the research process. Enables students to critically analyze the merit of published nursing research. Prer., Nursing majors only; all second year courses must be completed. PSY 2100 or may be taken concurrently.

NURS 4015 - Nursing Research: RN-BSN and Dual Enrollment

3 Credits
Through this course students will attain a basic understanding of the elements and processes of research and evidence-based practice. Knowledge gained from research contributes directly to students' patterns of knowing. Students begin to derive a theoretical and research-based knowledge of the therapeutic nursing interventions that underpin the roles of a competent baccalaureate-prepared nurse. Prer., NURS 3040, NURS 3050; RN-BSN and Dual Enrollment students only.

NURS 4020 - Practice Paradigms in Forensic Nursing

3 Credits
A critical, in-depth introduction to forensic nursing practice. Discusses historical perspectives framing forensic nursing, analyzes concepts of forensic nursing, and synthesizes theory and practice. Identifies the roles and challenges in forensic nursing, as well as needs and issues within different forensic communities. Explores assessment tools, diagnosis and treatment, and management of forensic populations. Meets with NURS 6020.

NURS 4030 - Healthcare Policy, Ethics and Legal Aspects of Forensic Nursing Practice

3 Credits
Addresses issues faced by the practicing nurse in the forensic healthcare setting from a forensic nursing perspective. An interdisciplinary approach is used to explore the interactions between nursing and the criminal justice system, the effect of policy on the forensic healthcare population and the challenges faced by the practicing forensic nurse in the delivery of the human healthcare experience. Meets with NURS 6030.

NURS 4040 - Substance Abuse: Implications for the Forensic Nurse

3 Credits
Addresses the implications of substance abuse on the role of the forensic nurse. Describes the interdisciplinary process for recognition and treatment of substance abuse. Covers types of substances and their effects on the

abuser. Addresses the psychological component of substance abuse and the psychosocial impact of substance abuse on the abuser and their support system. Meets with NURS 6040.

NURS 4060 - Multi-Facets of Child Maltreatment

3 Credits
Explores the multifaceted manifestations of child maltreatment to include medical and nursing diagnosis, treatment, documentation, and legal implications from a forensic nursing perspective. Prer., Junior or Senior nursing students or registered nurses. Meets with NURS 6060.

NURS 4070 - The Epidemic of Sexual Assault, Abuse, and Exploitation

3 Credits
Reviews sexual assault, abuse, and exploitation from a forensic nursing perspective. An interdisciplinary approach explores the dynamics of sexual violence in society and the interface of sexual assault, interpersonal violence (IPV), and child maltreatment. Roles for the forensic nurse will be reviewed. Prer., Junior or Senior nursing students or registered nurses only. Meets with NURS 6070.

NURS 4100 - Nursing Care of Children

6 Credits
Explores the holistic care of children from infancy to adolescence, and their families in ambulatory, outpatient and acute care settings. (Theory and clinical laboratory) Prer., All third year courses.

NURS 4110 - Legal and Ethical Health Care Issues from Admission to Discharge

3 Credits
This course presents an overview of the legal issues facing the health care industry, specifically for nurses. It follows relevant legal issues for patients from admission through discharge. It provides students with a basic working knowledge of health law, taught entirely through case law and real fact patterns. It is a comprehensive and inclusive review of a wide variety of health care legal issues. Students are provided with a realistic knowledge of health law and its application to the real world. Prer., Sophomore status.

NURS 4120 - Perioperative Nursing Practicum

2 Credits
Elective course in selected clinical placement, focuses on the practice of various perioperative nursing from pre-op to post-op. Students will experience the Perioperative Nursing role, Circulating Nursing role and the recovery and discharge of patients. Req., NURS 3200 and NURS 3210. Open to juniors and seniors only.

NURS 4150 - Death and Dying

3 Credits
A comprehensive introduction to the study of death and dying with integration of a wide range of interdisciplinary approaches. Providing a theoretical basis and current research on the topic. The course also allows for the opportunity to apply theory to life situations and personal experiential discovery.

NURS 4200 - Nursing Care of the Childbearing Family

6 Credits
Provides an opportunity to explore family dynamics and the health care experience during the childbearing process. Expands critical thinking skills specific to the childbearing arena. (Theory and clinical laboratory) Prer., All third year courses.

NURS 4250 - Professional Nursing Practice

3 Credits
Focuses on selected nursing practice topics that build upon the student's personal knowledge. Opportunities are provided to enhance principles of teaching, utilize critical thinking and further explore nursing roles. Prer., RN to BSN or RN Dual Enrollment students only.

NURS 4280 - International Nursing

3 Credits
Provides an overview of global perspectives on health care, including economics,, policy, culture, infectious and chronic disease, complementary and alternative medicine. Concepts of international and global health will be applied in structured international communities. Prer., Senior standing.

NURS 4290 - Medical/Surgical Nursing Capstone

6 Credits
Synthesizes nursing content necessary for therapeutic interventions for the care of complex adult patients in the acute and critical care settings. Emphasis on prioritization of care and management of groups of complex patients. (Theory and clinical laboratory.) Approved for Compass Curriculum requirement: Writing Intensive. Prer., All third year courses.

NURS 4300 - Leadership and Management

3 Credits
Prepares the baccalaureate generalist graduate for the professional leadership role through the exploration and application of leadership and management principles in the areas of healthcare systems, information systems and technology, quality and safety principles, and inter-professional communication within the healthcare team. Healthcare policy, legislation and legal issues related to the practice of nursing are analyzed. Students engage in activities to prepare for transition into the professional nursing role. Prereq., NURS 2200. Coreq., NURS 3200, NURS 3210. Nursing majors only.

NURS 4350 - Nursing Management

3 Credits
Develops management theories and professional issues and trends. Emphasizes organizational and financial principles. Clinical preceptors provide the student with opportunities to explore application of management skills. Prer., RN to BSN or RN Dual Enrollment students only.

NURS 4400 - Community Health Nursing

6 Credits
Focuses on health promotion and prevention in the delivery of nursing care to aggregates. Studies high risk individuals, families and groups. Develops community health nursing competencies. (Theory and clinical laboratory). Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Summit. Prer., All third year courses. Meets with NURS 4450.

NURS 4450 - Community Health Nursing

6 Credits
The focus of this course is the delivery of nursing care to populations of community-based aggregates. Community/public health concepts and competencies are presented and guide nursing intervention and evaluation in clinical experiences with assigned target populations. Prer., NURS 3040, NURS 3050, NURS 4350. Coreq., NURS 4010 or NURS 4015. RN to BSN or RN Dual Enrollment students only.

NURS 4480 - Capstone Project - RN

3 Credits
Provides the student the opportunity to integrate and synthesize theory, research, and clinical concepts from all prior courses in a student-selected setting. Prer., NURS 3040, NURS 3050, NURS 4010 or NURS 4015, NURS 4250, NURS 4350, NURS 4450. RN-BSN Students Only - RN license required.

NURS 4490 - Clinical Capstone

3 Credits
Provides an opportunity to integrate and synthesize theory and clinical from all prior courses in a student selected setting. Seminar allows student to explore professional issues encountered in clinical.

NURS 4530 - Creativity and Critical Thinking

3 Credits
Creativity will be explored experientially and conceptually through innovative processes of art andliterature, whole brain learning, imagery. Critical thinking will be theoretically analyzed as well as practiced.

NURS 4540 - Images of British Nursing: Past and Present

3 Credits
A study of the life, work and times of Florence Nightingale and exploration of the current status of nursing in England. Both historical and contemporary perspectives on nursing will be explored. The setting for the course is in London, England. Prer., Consent of lead faculty.

NURS 4550 - Partners in Nursing Practice II

1-3 Credits
Provides nursing students the opportunity to enhance nursing skills in actual practice situations. Assigned expert clinicians will facilitate learning in an identified clinical setting. Provided through a collaborative agreement with acute care delivery settings. Credit to contact hours may vary dependent on the educational/work relationship established. Prer., NURS 2100, NURS 2200 and NURS 3200.

NURS 4560 - Lactation Counselor

3 Credits
Prepares nurses to be Lactation counselors in a clinical setting. Upon completion students will be able to counsel women pre- and postnatally and will have the technical knowledge and skills necessary to support lactating women within the students' clinical scope of practice. Prer., NURS 2200. Nursing majors only.

NURS 4570 - Emergency Nursing

3 Credits
Incorporates theoretical and didactic learning in the specialty area of emergency care including assessment, diagnosis, triage, and treatment of both emergent and non-emergent conditions. Integration of the professional roles of provider of care, educator, researcher, case manager, and change agent are facilitated. Prer., NURS 2200 and Nursing major, or RN-BSN students..

NURS 4580 - Basic EKG Interpretation

3 Credits
Provides students with the skills necessary for basic electrocardiogram (EKG) interpretation. All basic dysrhythmias will be covered. Therapeutic modalities specific to each dysrhythmia will be reviewed as well as pertinent physical assessment findings. Prer., NURS 3200, NURS 3210. Admission to Nursing major, juniors and seniors only.

NURS 4590 - Advanced Practicum: Clinical

2 Credits
Elective course in selected clinical placements. Promotes synthesis of nursing skills and advanced clinical concepts. Clinical experience develops increased depth of practice in specific clinical settings. Prer., All first and second year courses, NURS 429, or by permission of the instructor.

NURS 4600 - Critical Care Nursing

3 Credits
Provides students with critical care concepts and theory to better prepare the student to work with acutely ill clients. Nursing care of the critically ill client will be addressed by systems. Basic dysrhythmias will also be reviewed. Open to juniors and seniors only. Prer., All 2000 level nursing courses, NURS 3200 and NURS 3210.

NURS 4620 - Dynamics of Unity

3 Credits
Explores the scientific and cultural underpinnings of holistic thought. The evolution of Western Science,the essential unity of diverse spiritual traditions, and the development of society from industrialism and isolation to the age of information and global economy. Prer: RN status. Meets with NURS 6420.

NURS 4890 - Special Topics

1-3 Credits
Investigations into selected topics related to Nursing not included in the regular curriculum.

NURS 5010 - Introduction to Correctional Health Care Systems

3 Credits
Correctional health is the practice of providing patient care wihtin the unique environment of the criminal justice system which includes jail, prisons, and juvenile detention centers. Provides an overview of the social and political conditions facing health providers. Meets with NURS 2010.

NURS 5020 - Correctional Health Ethics & Law

3 Credits
Correctional issues and specific state laws will be described as they relate to preexisting conditions and self-inflicted injury. Accreditation process and national standards will provide a framework for discussion. Meets with NURS 2020.

NURS 5030 - Mental Health Issues in Correctional Institutions

3 Credits
This course will provide an overview of the prevalence of mental health issues being addressed within correctional institutions. Specific mental health diagnosis and associated respective behaviors will be described that require frequent attention by correctional professionals.

NURS 5040 - Correctional Health Care of the Older Adult

3 Credits
Overview of developmental issues facing elderly incarcerated individuals. Chronic disease management and compliance through assessment are emphasized as they affect health status. The course addresses health-seeking behaviors and ineffective individual coping to facilitate assessment by correctional officers.

NURS 5110 - Interpersonal & Family Violence

3 Credits
This course examines the causes and consequences of interpersonal and family violence as well as the influence of culture and community. Current topics and issues related to violence prevention, intervention, and policy will be discussed from an interdisciplinary perspective. Subtypes of violence covered include child abuse, dating violence, domestic violence, and elder abuse. Prer., BSN and RN license. Meets with NURS 3610.

NURS 5400 - Nurse as Healer

3 Credits
An integrated synthesis course applying holistic nursing principles to self-care and care of others. Course includes preparation for certification exam in holistic nursing.

NURS 6010 - Models of Clinical Supervision

3 Credits
Identifies major models of clinical supervision, examines models which have been empirically validated. Explores how these models can be applied in variety of settings. Issues and factors related to clinical supervision will be delineated.

NURS 6020 - Practice Paradigms in Forensic Nursing

3 Credits
A critical, in-depth introduction to forensic nursing practice. Discusses historical perspectives framing forensic nursing, analyzes concepts of forensic nursing, and synthesizes theory and practice. Identifies the roles and challenges in forensic nursing, as well as needs and issues within different forensic communities. Explores assessment tools, diagnosis and treatment, and management of forensic populations. Meets with NURS 4020.

NURS 6030 - Healthcare Policy, Ethics, and Legal Aspects of Forensic Nursing Practice

3 Credits
Addresses issues faced by the advanced practice nurse in the forensic healthcare setting from a forensic nursing perspective. A multidisciplinary approach is used to explore the interactions between nursing and the criminal justice system, the influence of policy on the forensic healthcare population and the ethical challenges faced by the advanced practice forensic nurse. Meets with NURS 4030.

NURS 6040 - Substance Abuse: Implications for the Forensic Nurse

3 Credits
Addresses the implications of substance abuse on the role of the forensic nurse. Describes the interdisciplinary process for recognition and treatment of substance abuse. Covers types of substances and their effects on the abuser. Addresses the psychological component of substance abuse and the psychosocial impact of substance abuse on the abuser and their support system. Meets with NURS 4040.

NURS 6060 - Multi-Facets of Child Maltreatment

3 Credits
Explores the multifaceted manifestations of child maltreatment to include medical and nursing diagnosis, treatment, documentation, and legal implications from a forensic nursing perspective. Prer., Graduate students only. Meets with NURS 4060.

NURS 6070 - The Epidemic of Sexual Assault, Abuse, and Exploitation

3 Credits
Reviews sexual assault, abuse, and exploitation from a forensic nursing perspective. An interdisciplinary approach explores the dynamics of sexual violence in society and the interface of sexual assault, interpersonal violence (IPV), and child maltreatment. Roles for the forensic nurse will be reviewed. Prer., Graduate or Doctoral nursing students or registered nurses only. Meets with NURS 4070.

NURS 6080 - Injury Investigation Throughout the Life Span

3 Credits
Provides enhanced knowledge concerning injury and its investigation. A major focus is fatal injuries, death investigation. A major focus is fatal injuries, death investigation systems in the United States, and techniques employed to ascertain the cause and manner of death. Prevention strategies and opportunities for forensic APN role development will also be reviewed. Prer., NURS 4020 or NURS 6020. Graduate or doctoral students in Nursing.

NURS 6100 - Philosophical Foundations of Advanced Nursing Practice

3 Credits
Explores theoretical and philosophic foundations of human caring and nursing's epidemiology and ontology. Introduces patterns of knowing and advanced roles of artist, ethicist, carer, citizen, and scientist. Integrates theoretical, ethical, socio-political, family, and philosophic perspectives. Prer., Graduate students in Nursing only.

NURS 6110 - Advanced Nursing Practice in Healthcare

3 Credits
Introduces knowledge to effect change in health care policy and delivery. Advanced nursing practice is explored in the health care system, focusing on regulatory issues and legal/ethical parameters. Emphasis is placed on leadership skills within the social/political arena. Prer., Graduate students in Nursing only.

NURS 6120 - Research and Knowledge Translation in Nursing

3 Credits
Explores the basis for research in advanced practice nursing. Emphasis is placed on the research process and critiquing published research. Prer., introductory statistics course. Prer., Graduate students in Nursing only.

NURS 6170 - Geropharmacology: Concepts and Practical Applications in Advanced Practice Nursing

2 Credits
Reviews pharmacology concepts in the context of the physiology of aging. Applies concepts learned in advanced health assessment to the comprehensive history component of medication review. Discusses polypharmacy and drug classes that may be problematic for older adults. Explores collaborations between advanced practice nurses and pharmacists to reduce medication errors and enhance adherence through education. Prer., NURS 6280, NURS 6730, NURS 6740.

NURS 6180 - Technology for Teaching

3 Credits
This course provides the nurse educator with the necessary knowledge and skills to facilitate teaching in a dynamic, technological professional environment. Online teaching and learning along with laboratory simulation will be explored. Prer., Graduate students in Nursing only.

NURS 6190 - Educational Measurement and Evaluation in Nursing

3 Credits
Theories of measurement and evaluation are analyzed as they relate to various aspects of

instruction in nursing. Students study and use a variety of measurement and evaluation techniques. Opportunities are provided for students to analyze ethical, legal, and social issues involving measurement and evaluation, as well as uses and limitations of evaluation instruments in a variety of instructional situations. Methods of curriculum and program evaluation will also be addressed. Prer., Graduate students in Nursing only.

NURS 6200 - Curriculum Development in Nursing

3 Credits
Introduces the process of curriculum development and the procedures of structuring and evaluating curriculum experiences and outcomes. Prer., Graduate students in Nursing only.

NURS 6210 - Transformational Teaching Strategies

3 Credits
Promotes understanding of the political, philosophical and personal tenets of a caring curriculum. Explores advanced concepts of teaching and learning and examines learning theory. Studies the art and science of effective teaching strategies. Includes techniques of media production. Prer., Graduate students in Nursing only.

NURS 6220 - Collaborative Health Care Management with the Elderly

3 Credits
Provides students with empirical knowledge needed to manage care of elderly individuals. Sets foundation for an advanced practice role in providing primary care to older adults and their families within a framework of collaborative practice. Prer., NURS 6120 (Recommended).

NURS 6225 - The Roles of the Nurse Educator

3 Credits
This course examines the roles and responsibilities of the nurse educator related to teaching, service, scholarship, and practice. Current issues and trends impacting nurse educators as well as role preparation and career development will be explored. Prer., Graduate students in Nursing only.

NURS 6230 - Physiological Problems of Aging

3 Credits
Explores the various aspects of aging from a physiological perspective. Health promotion of mature and aging families will be addressed. Management of minor acute health problems will be systematically covered. Cultural and ethnic differences are elucidated.

NURS 6280 - Clinical Pharmacotherapeutics

3 Credits
Provides knowledge of cellular mechanisms and the clinical application of therapeutic drugs by practitioners in primary and acute health care settings. Educates Advanced Practice Nursing students about common drug uses, drug categories, and integrative health therapies. Prer., Graduate students in Nursing only.

NURS 6300 - Sexual Assault: Implications for Nursing Practice

3 Credits
Focuses on sexual violence and expands personal knowledge of medicolegal aspects of health care. The alliance of nursing, law enforcement and forensic sciences is explored. Models for preventive strategies and public education are investigated. Meets with HSCI 6300.

NURS 6310 - Forensic Nursing

3 Credits
Introduces clinical forensic nursing with an emphasison emergency room and community health forensic issues. Explores principles and philosophy of clinical forensic nursing and the role of the forensic nurse in advanced nursing practice in clinical and/or community based settings. Meets with HSCI 6310.

NURS 6320 - Injury and Death Investigation

3 Credits
Explores principles related to investigation of injury and death. Forensic pathology and forensic autopsy procedures are included. Explores topics medicolegal evidence, violence injury and environmental pathology. Meets with HSCI 4320 and HSCI 6320.

NURS 6330 - Crime Scene & Crime Lab

3 Credits
Introduces the student to the areas of crime scene preservation, investigation and development and to the scientific tactics, procedures, and techniques employed by forensic experts and sophisticated scientific techniques by forensic nurses. Meets with HSCI 4330 and HSCI 6330.

NURS 6340 - Psychosocial/Legal Aspects of Forensic Science

3 Credits
Introduces the psychological, neurocognitive, sociological and legal dimensions of forensic nursing, assessment and diagnosis of mental disorders, and the interface between the psychosocial effects of injury and illness and the judicial system. Explores criminal, civil and family law applications. Meets with HSCI 4340 and HSCI 6340.

NURS 6360 - Legal Aspects of Forensics: Civil and Criminal

3 Credits
Criminal, civil and family law will be discussed as they relate to forensic issues. Meets with HSCI 4290 and HSCI 6360.

NURS 6370 - Violence & Human Rights Issues

3 Credits
Provides the opportunity to explore the impact of violence in relation to the responsibilities of the investigator, assessor, evaluator, and therapist. Includes strategies of care for individual family and community survivors. Principles and philosophies of victimology, traumatology and domestic violence.Meets with HSCI 4370 and HSCI 6370.

NURS 6380 - Evaluation and Management of Adult, Adolescent and Pediatric Sexual Assault Patients

3 Credits
Provides advanced preparation for experienced nurses interested in practicing sexual assault nurse examiners or expanding knowledge in forensic healthcare. Topics include: medical forensic examination, evidence collection and the role of the advanced practitioner in the criminal justice process. Prer., Graduate School Admission.

NURS 6410 - Complementary Healing Methods

3 Credits
Presents an overview of the history, theoretical bases, applications, resources, and trends of complementary healing methods. The evolution of Western scientific thought and East-

ern medical theories will be examined as a basis for understanding current health perspectives and treatment modalities.

NURS 6420 - Dynamics of Unity

3 Credits
Explores the scientific and cultural underpinnings of holistic thought. The evolution of Western Science, the essential unity of diverse spiritual traditions, and the development of society from industrialism and isolation to the age of information and global economy. Meets with NURS 4620.

NURS 6460 - Shamanism: Healer & Visionary

3 Credits
Applies the philosophy and practice of shamanism; specifically imagery, memory, reflection, dreams and the creative healing process in nursing practice. The focus is on the nurse's role and practical application of theories and techniques of shamanism in various clinical situations. Intuitive and analytical thinking are emphasized. Prer., Admission to nursing program required.

NURS 6500 - Forensic Photography

3 Credits
Designed to assist professionals in forensic science and health care in the basic principles and techniques associated with forensic photography at the crime scene, in the hospital setting, or in autopsy laboratory. Meets with HSCI 4390 and HSCI 6380.

NURS 6570 - Role Transitions

2-3 Credits
Designed for certificate nurse practitioners who have completed advanced practice core degree requirements. Facilitates the integration of graduate advanced practice theoretical and conceptual knowledge intoclinical practice. Prer., NURS 6100, NURS 6110, NURS 6120, NURS 6270.

NURS 6600 - Palliative Care and Advanced Practice Nursing

3 Credits
Analyzes principles of palliative care in chronic progressive disease and end-of-life care. Integrates concepts across the lifespan and with various specialty populations, as well as implementation in various clinical settings.

NURS 6660 - Health Promotion & Disease Management for Clinical Nurse Specialist

3 Credits
Provides a basis for advanced practice nursing through the exploration of the human health experience of clients across health care settings. Emphasizes health promotion, acute episodic and community care within a human caring framework. Prer., NURS 6730, NURS 6740, and NURS 6280.

NURS 6730 - Advanced Health Assessment

3 Credits
Explores the foundation and techniques of advanced health assessment across the life span. This course requires 45 contact hours of precepted assessments. Prer., Graduate students in Nursing only.

NURS 6740 - Advanced Pathophysiology

3 Credits
Synthesis of pathophysiologic concepts for therapeutic assessment, diagnosis, management, and intervention fundamental to advanced practice nursing across the life span in a variety of health care settings. Prer., Graduate students in Nursing only.

NURS 6900 - Primary Care of Pediatric Patients and Families

5 Credits
Explores acute and chronic health care of children and families. Focuses on comprehensive assessment, intervention, and preventive care. This course requires completion of 90 contact hours of practicum. Prer., Graduate students in Nursing only.

NURS 6910 - Primary Care of Adults and Families with Acute Health Conditions

6 Credits
Explores the preventive and acute health needs of adults and families across the life span. This course requires 90 contact hours of practicum. Prer., Graduate students in Nursing only.

NURS 6920 - Primary Care of Adults and Families with Chronic Health Conditions

6 Credits
Provides a foundation for exploration of chronic health conditions of adults and families across the life span. Focuses on assessment, prevention, and management, incorporating concepts from pathophysiology, psycho/social, cultural, political, theory, evidence-based practice, and spiritual frameworks. This course requires 90 contact hours of practicum. Prer., Graduate students in Nursing only.

NURS 6930 - Foundational Principles for Care of Older Adults

2 Credits
Provides foundational knowledge needed for primary care of the older adult across health care settings. Prer., Graduate students in Nursing only; all MSN core classes, APN core classes, completion of NURS 6910, NURS 6920.

NURS 6940 - Geriatric Clinical Syndromes

4 Credits
Explores common physical and psychosocial clinical syndromes that impact the quality of life of older adults. Prer., Graduate students in Nursing only; completion of all MSN core classes, APN core classes, NURS 6910, NURS 6920, NURS 6930.

NURS 6980 - Synthesis Practicum

2-8 Credits
Provides the opportunity to practice the skills and knowledge related to Advanced Practice in the provision of Primary Care. Practicum hours are arranged with a preceptor and select populations in a variety of clinical settings. 1 credit hour of practicum is equal to 45 contact hours. Prer., Graduate students in Nursing only. All core courses and all primary care courses for option must be successfully completed. All immunizations, licensure, CPR must be submitted and current prior to course beginning date.

NURS 6990 - Advanced Forensic Nursing

3 Credits
Provides a theoretical basis for forensic nursing practice, to include skills and experience in assessment, identifcation, management, and referral of patients and families exposed to violence and trauma. A population-based, client-centered approach and community-based services will be emphasized. Prer., NURS 4020 or NURS 6020. Graduate doctoral students in Nursing.

NURS 7000 - Research Thesis

1-5 Credits
Provides an opportunity for graduate students to participate in the research process under the direction of an advisory committee. Synthesis of knowledge and skill in selected areas of the research process necessary to organize and conduct a research study. Prer., NURS 6120; and the satisfactory completion of a minimum of 20 credit hours the MSN program. Graduate students in Nursing only.

NURS 7010 - Theoretical Foundations of Reflective Practice

3 Credits
Explore theoretical foundations of reflective practice. Provides an overview of the principles of reflective practice, advanced practice skills, holistic therapies, and theoretical models for care delivery. Prer., Graduate students in Nursing only.

NURS 7020 - Clinical Research Application

3 Credits
Offers the opportunity to develop and/or revise nursing clinical protocols derived from scientifically rigorous empirical and qualitative evidence. Includes a program evaluation and a brief review of research process and research critique. Prer., NURS 6100, NURS 6110, and NURS 6120; Graduate students in Nursing only..

NURS 7024 - Research Analysis & Application

4 Credits
Provides the skills and knowledge to analyze and synthesize research evidence in a selected area of practice. Promotes clinical leadership by integrating theory, research, and practice into a scholarly proposal for practice change to ensure safe and effective care. Prer., NURS 6100, NURS 6110, NURS 6120, NURS 6280, NURS 6730, NURS 6740, and a minimum of 3 additional credit hours in the MSN program with a grade of "B" or higher.

NURS 7030 - Advanced Healthcare Policy, Ethics, and Law

4 Credits
Synthesizes the concepts of ethics, law and policy impacting health care delivery systems both locally and globally. Reflectively uses the advanced practice role to influence healthcare policy change. Prer., Graduate students in Nursing only.

NURS 7070 - Population-based Health Care for Improving the Nation's Health

4 Credits
Explore theoretical foundations of reflective practice within population-based health care. Provide overview of principles, practices and influences of epidemiology, biostatistics, culture, and socioeconomics on health and health care delivery. Analyze environmental/occupational health concepts. Prer., Graduate students in Nursing only.

NURS 7080 - Clinical Nursing Scholarship for Evidence-based Practice

3 Credits
Critically analyzes healthcare issues within a population. Appraises literature related to the healthcare problem and proposes an evidence-based practice change. Emphasis is placed on the design, implementation and evaluation of outcomes/programs. Prer., Graduate students in Nursing only and successful completion of NURS 7010, NURS 7100, NURS 7030, and NURS 7070 - can be taken concurrently.

NURS 7090 - Business, Finance, and Entrepreneurship

4 Credits
Explores theoretical foundations of business, finance, and entrepreneurship of advanced practice. Provides overview of principles of business, finance, and information technology related to clinical care delivery. Prer., Graduate students in Nursing only.

NURS 7100 - Organizational System Leadership and Quality Improvement

4 Credits
Lecture with practicum. Explores theoretical foundations of reflective practice within organizational and leadership perspectives. Provides an overview of principles of organizational systems/culture, quality improvement/risk management. Concepts within informatic/technologic systems, consultation, inter-professional dimensions of healthcare/organizations within advanced practice will be analyzed. Prer., Graduate students in Nursing only.

NURS 7110 - Inferential Statistics

3 Credits
Provides an overview of inferential statistical techniques most commonly used to analyze nursing and healthcare research. Prer., Graduate students in Nursing only.

NURS 7710 - Clinical Practicum in Nursing Education

3 Credits
Designed to assist prospective nursing educators to operationalize the elements of instruction in nursing clinical education. Students will work with a faculty preceptor in a clinical area relevant to their expertise and interest. Philosophical and experiential issues specific to clinical instruction are discussed in seminar format. Prer., NURS 6190, NURS 6200, and NURS 6210.

NURS 7720 - Classroom Practicum in Nursing Education

1-5 Credits
Assists prospective nursing educators to operationalize the elements of instruction in the classroom setting. Students will work with a faculty preceptor in an area relevant to their expertise and interests. Philosophical and experiential issues specific to classroom instruction are discussed in seminar format. Prer., NURS 6190, NURS 6200, and NURS 6210; Graduate students in Nursing only..

NURS 7830 - Community Assessment Practicum

1 Credit
Application of a selected model of population based assessment to a specific community and/or rural aggregate population. Collaboration with health providers is expected to manage health related data and form the foundation for community based advanced practice. Prer., NURS 6100, NURS 6110, NURS 6120, NURS 6150. Meets with NURS 7820.

NURS 8000 - DNP Clinical Residency

1 Credit
Affords the DNP student the opportunity to develop a personal philosophy/theory of reflective practice, develop a role transition model for practice and develop a vision for future clinical practice. Provides guidance for the development of DNP practice. Prer., Admission to the DNP program.

NURS 8010 - Doctorate of Nursing Practice (DNP) Capstone Proposal

3 Credits
Affords Doctorate of Nursing Practice (DNP) students opportunities to develop capstone projects demonstrating knowledge application from coursework and clinical practice. Specific project areas are identified and developed with guidance of select faculty and community or advanced practice nurses. Project proposals reveal interface between advanced

practice nursing and research. Prer., NURS 7010, NURS 7030, NURS 7070, NURS 7090, NURS 7100, NURS 8000. Open to DNP students only.

NURS 8020 - Doctorate of Nursing Practice (DNP) Capstone Project

3 Credits
Affords Doctorate of Nursing Practice (DNP) students opportunities to implement capstone proposals in specific clinical settings. Provides guidance for implementation of research projects demonstrating integrated knowledge of advanced practice nursing and research. Clinical project areas are identified and developed with mentorship of faculty advanced practice nurses. Prer., NURS 7010, NURS 7030, NURS 7070, NURS 7090, NURS 7100, NURS 8000, NURS 8010. Open to DNP students only.

NURS 8030 - DNP Capstone

1-5 Credits
Affords DNP students the opportunity to develop and implement a capstone proposal/project in specific clinical settings. Provides guidance for implementation of projects demonstrating integrated knowledge of advanced practice nursing and evaluation. Clinical project areas are identified and developed with mentorship of faculty. Prer., NURS 7010, NURS 7030, NURS 7070, NURS 7080, NURS 7090, and NURS 7100. Open to admitted DNP students only.

NURS 9300 - Independent Study

1-3 Credits
Undergraduate independent study is arranged with a specific faculty member in an area of interest. Independent study can fulfill elective or core course requirements. Prer., Permission of instructor required.

NURS 9400 - Independent Study

1-3 Credits
Undergraduate independent study is arranged with a specific faculty member in an area of interest. Independent study can fulfill elective or core course requirements. Prer., Permission of instructor required.

NURS 9500 - Independent Study

1-6 Credits
Graduate students investigate an area of interest in the field of health care with the guidance of a faulty member in nursing. Prer., Graduate students in Nursing only.

NURS 9600 - Independent Study

1-6 Credits
Graduate students investigate an area of interest in the field of health care with the guidance of a faulty member in nursing. Prer., Graduate students in Nursing only.

NURS 9990 - Candidate for Degree

0 Credits
Candidate for Degree

OLPD - Organizational Leadership & Professional Development

OLPD 1010 - Intro to the Army and Critical Thinking

3 Credits
Introduces students to the Army and critical thinking skills that are critical for effective leadership. Students learn personal development of life skills such as critical thinking, time management, goal setting, stress management and comprehensive fitness related to leadership and the Army profession.

OLPD 1020 - Intro to the Profession of Arms

3 Credits
Introduction to the personal challenges and competencies critical for adaptive leadership. Students learn the essential skills to effectively communicate in the Army. Students will examine the Army Profession and what it means to be a professional in the U.S. Army.

OLPD 2010 - Leadership and Decision Making

3 Credits
Introduces students to the Foundations of Leadership and the application of critical thinking skills that are paramount for success in the Army. Students learn how to implement technical skills learned throughout the course and apply them during critical thinking exercises that are practical and pertain to leadership challenges within the Army.

OLPD 2020 - Army Doctrine and Team Development

3 Credits
Examines the challenges of leading tactical teams in the complex contemporary operating environment. Highlights terrain analysis, patrolling, and operations orders. Includes advanced study of the theoretical basis of Army leadership and explores dynamics of adaptive leadership in the context of military operations.

OLPD 2030 - Cadet Initial Entry Training (CIET)

3 Credits
CIET is the Army's two-year ROTC Program entry point. Through CIET, students without ROTC Basic Course experience can qualify for Advanced Course entry. The Army observes these students and determines their officer potential in a leadership-oriented, challenging, and motivating 5-week training program at Fort Knox, Kentucky. Effective Summer 2016, this will be a pre-commissioning requirement for all cadets who have not completed a military Basic Training equivalent.

OLPD 3010 - Training Management and the Warfighting Functions

3 Credits
Challenges students to study, practice, and evaluate adaptive leadership skills as presented in scenarios related to squad tactical operations. Students receive systematic and specific feedback on their leadership attributes and actions, which they use to develop their leadership and critical thinking abilities. Open to Junior/Senior/Graduate students only. Prer., MS 1010, MS 1020, MS 2010, MS 2020 or Basic Course Credit.

OLPD 3020 - Applied Leadership in Small Unit Operations

3 Credits
Employs increasingly intense leadership challenges to build awareness and skills in leading tactical operations at the squad and platoon levels. Students learn basics of stability and support operations and conduct military briefings. Open to Junior/Senior/Graduate students only. Prer., MS 3010 or instructor permission.

OLPD 3030 - Cadet Leadership Course (CLC)

3 Credits
Mandatory 5-week practicum conducted at Fort Knox, Kentucky for all advanced course Army ROTC students. Students are assigned leadership positions at various levels of responsibility and in varied environments. Students are mentored and assessed on their ability to function and lead within the Army team.

Contract Army ROTC students only. Prer., MS 3010 and MS 3020.

OLPD 3040 - Military Science and Leadership Army ROTC Nurse Summer Training Program (NSTP)

3 Credits
This course is a three-week, 120-hour clinical assignment with an Army Nurse Corps preceptor at an Army hospital in the United States or overseas. Improved clinical skills and self-confidence that comes with this experience will enhance performance in nursing curriculum and Military Science. Students receive travel pay and a salary stipend through Military Science. Prer., MS 3010, MS 3020, MS 3030. Restricted to Army ROTC Nurse Juniors/Seniors only.

OLPD 4010 - The Army Officer

3 Credits
Develop proficiency in Mission Command and the Army profession by planning, executing, and assessing complex operations by functioning as staff. Develop self and subordinate leaders by receiving and providing performance feedback. Learn basics of ethical decision-making, risk management, and military justice. Open to Junior/Senior/Graduate students only. Must pass the Army Physical Fitness Test and meet height-weight requirements each semester. Prer., MS 3010 and MS 3020.

OLPD 4020 - Company Grade Leaderships

3 Credits
This course explores the dynamics of leading in complex situations, examining the art of command, how to properly communicate with your NCOs and soldiers, and how ethical decisions impact personnel and the unit's mission. Prer., MS 3010, MS 3020, and MS 4010 or Department Head permission.

OLPD 4980 - Special Studies in Leadership

3 Credits
Course is for the student participating in the Army ROTC Advanced Course who wants to pursue further studies in the application of leadership principles and group dynamics. This course is by arrangement with the Professor of Military Science only. Students must be Army ROTC Advanced Course participants. May be repeated once for credit. Prer., MS 4020.

OPTM - Operations Management

OPTM 3000 - Fundamentals of Operations Management

3 Credits
This course introduces theories, principles and analytical models which guide and facilitate decision making in the operating system for both manufacturing and service organizations. The topics move from strategic choices in operations management to tactical decisions. Students will be exposed to in-depth discussions on operations strategy, supply chain management, process analysis and design, production planning, inventory management, quality management, and project management. Besides classroom lecture, this course provides active learning opportunities such as case analysis, experimental exercises, and group projects. Prer., ACCT 2020, QUAN 2020, College of Business students only.

OPTM 3390 - Managing Projects for Competitive Advantage

3 Credits
Covers the fundamental project management topics necessary for implementation of and excellence in project management. Emphasis will be from a management perspective that addresses the basic nature of managing projects for business, information systems and the public. Students will deal with the problems of selecting projects, initiating them, operating them and controlling them. Also covered are the issues associated with terminating a project and with conducting a project that involves what project managers like to call the "real world." Prer., ACCT 2010, QUAN 2010; Business students only.

OPTM 4100 - Managing Service Operations

3 Credits
Prepares students for operations management opportunities in service industries such as financial services, entertainment, hospitality, logistics services, and health care. Focusing on the management of service operations, this course will explore topics in three modules: 1) understanding services, 2) designing the service enterprises, and 3) managing service operations. Sample topics include service strategy, new service development, service quality, service facility location, managing capacity and demand for services, managing waiting line and queuing models, and managing service projects. Equips students with the concepts and tools necessary to effectively manage a service operation, and should provide entrepreneurially-inclined students with the foundation to open their own service businesses. Prer., QUAN 2010 and QUAN 2020. Business students only, Junior standing.

OPTM 4490 - Organizational Skills for Project Management

3 Credits
Through a team experience, students learn both theory and practice of teamwork, with an emphasis on negotiation and mediation. Students learn how to adapt communication media to achieve management goals both inside and outside the team. Additionally, the course emphasizes the need to develop human resources as capital and intellectual assets to effectively manage projects within a dynamic organization.Prer., OPTM 3390.

OPTM 4590 - Project Estimation and Risk Management

3 Credits
Management of successful projects includes estimation and proactive risk management in areas of project scope, cost, resource allocation, schedule, and financial planning. Uncertainty is reduced when project risks, both technical and non-technical, are identified, quantified, and mitigation strategies implemented. Included will be tools, techniques, and methodologies commonly used by successful project managers. Prer., OPTM 3390.

OPTM 4690 - Bridging Strategy and Tactics in Project Management

3 Credits
Managers of project managers operate in the broad context of a business, unlike project managers who generally need to complete a project on time, within budget and within quality constraints. This course covers a broad range of topics including managing multiple projects, motivating project managers, make-vs.-buy decisions, outsourcing, project assessment, portfolio management, running project offices, maturity monitoring, and communication. Prer., OPTM 3390.

OPTM 6000 - Operations: Competing Through Capabilities

3 Credits
Operations management focuses on the strategies and processes involved in providing goods and services to customers. This course will provide students with the ability to evaluate key factors in the design of an effective operations system and to align an operations system with an organization's business strategy.

The course provides the tools to effectively design, analyze, and manage operations systems in manufacturing, service, and public entities. Prer., ACCT 5500 and QUAN 5500.

OPTM 6090 - Operations: Competing Through Capabilities

3 Credits
Operations management focuses on the strategies and processes involved in providing goods and services to customers. This course will provide students with the ability to evaluate key factors in the design of an effective operations system and to align an operations system with an organization's business strategy. The course provides the tools to effectively design, analyze, and manage operations systems in manufacturing, service, and public entities. Online graduate course. Tuition schedule differs from on-campus courses. Prer., ACCT 5590 and QUAN 5590.

OPTM 6100 - Customer Focused Processes: Quality Management and Metrics

3 Credits
Customer satisfaction provides the critical link of operations to the marketplace. This course examines service and manufacturing processes and their impact on quality. Students are provided with tools to document processes, diagnose problems, develop innovative process improvement solutions, and design metrics for process analysis. Through strategic quality management programs and techniques, students will develop an understanding of the critical link between productive systems and success in the marketplace. Prer., OPTM 6000.

OPTM 6200 - Global Supply Chain Management

3 Credits
With the increasing pace of technological development and globalization of our economy, global supply chains are becoming increasingly critical to competitive success. Competition is more often between supply chain networks rather than between individual companies. Companies must carefully consider their core competencies and develop collaborative relationships with upstream suppliers and downstream customers to deliver value to the ultimate consumer. We consider the supply chain from a strategic and global perspective: to provide a strategic understanding of the supply chain and the global issues critical to supply chain development and management which will enable managers to understand, develop, and implement world-class supply chains. This course is designed as a graduate seminar utilizing a combination of text, article readings, and cases with heavy emphasis on class discussion and cooperative learning. Prer., OPTM 6000/6090.

OPTM 6300 - Managing Projects for Competitive Advantage

3 Credits
Covers the fundamental project management topics necessary for implementation of and excellence in project management. Emphasis will be from a management perspective that addresses the basic nature of managing projects for business, information systems and the public. Students will deal with the problems of selecting projects, initiating them, operating them and controlling them. Also covered are the issues associated with terminating a project and with conducting a project that involves what project managers like to call the 'real world'. Prer., ACCT 5500; coreq., QUAN 5500. Graduate business students only.

OPTM 6390 - Managing Projects for Competitive Advantage

3 Credits
Covers the fundamental project management topics necessary for implementation of and excellence in project management. Emphasis will be from a management perspective that addresses the basic nature of managing projects for business, information systems and the public. Students will deal with the problems of selecting projects and initiating them and operating and controlling them. Also covered are the issues associated with terminating a project and with conducting a project that involves what project managers like to call the 'real world'. Online graduate course. Tuition schedule differs from on-campus courses. Prer., ACCT 5500; coreq., QUAN 5500.

OPTM 6490 - Managing Virtual Teams: Strategies and Development

3 Credits
Covers both theory and practice of virtual teamwork and how to adapt communication media to achieve management goals inside and outside the team. Also emphasizes the need to develop human resources as capital and intellectual assets to effectively manage projects in a dynamic organization. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Any 6000 level MBA course, or instructor's approval.

OPTM 6590 - Project Estimation and Risk Management

3 Credits
Management of successful projects includes estimation and proactive risk management in areas of project scope, cost, resource allocation, schedule, and financial planning. Uncertainty is reduced when project risks, both technical and non-technical, are identified, quantified, and mitigation strategies implemented. Included will be tools, techniques, and methodologies commonly used by successful project managers. Online graduate course. Tuition schedule differs from on-campus courses. Prer., OPTM 6390.

OPTM 6690 - Bridging Strategy and Tactics in Project Management

3 Credits
Managers of project managers operate in the broad context of a business, unlike project managers who need to complete a project on time, within budget, and within quality constraints. Topics include strategic projects, multiple projects, motivating project managers, project assessment, portfolio management, project offices, and maturity monitoring. Online graduate course. Tuition schedule differs from on-campus courses. Prer., OPTM 6390.

OPTM 6960 - Internship in Operations

1-3 Credits
Graduate Internship for Business Students in operations. Prer., Admitted MBA students only. Instructor and Dean Approval.

OPTM 9500 - Independent Study in Operations and Technology Management

1-3 Credits
With the consent of both the instructor who directs the study and the dean. Prer., Instructor consent.

PAD - Public Administration

PAD 3210 - Contemporary Issues in Crime and Criminal Justice Policy

3 Credits
A survey of contemporary issues in American crime policy, designed to introduce students to the process by which criminal law and criminal justice policies are crafted and implemented in the American political process. Covers basic concepts about public policymaking across local, state, and national governments. Examines a variety of areas of crime policy and criminal punishment, including but not limited to guns, violent crime, drugs, family

violence, and hate crimes. Students will learn the complex nature of the policy process as well as the unique challenges, financial implications, and wider consequences of developing effective crime control policies. Also considers the relative efficacy of different policy approaches to controlling crime from the perspective of social scientific as well as empirical evidence. Prer., Sophomore Standing.

PAD 3268 - Contemporary Issues in Social and Public Policy

3 Credits
Examines a number of social policy issues and the social, economic, and political factors that influence policymaking and implementation. Provides an overview of the American system of social and public policy with emphasis on social welfare policy including health, education, welfare (income security policy), and criminal justice. Provides theoretically based models for analysis and presentation of social policy in legislative, administrative, and agency arenas. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., Sophomore Standing.

PAD 3400 - Public Administration and Homeland Security

3 Credits
Examines the role of administration in government, general trends in American public administration, problems in organization, and techniques in management. Emphasis will be on homeland security, including the importance of homeland defense and U.S. Northern Command, its mission, and other government organizations with which it interacts. Participants will gain an understanding of homeland security and homeland defense from the perspective of the primary national-level players: Department of Defense, U.S. Northern Command and the Department of Homeland Security. Prer., Sophomore Standing.

PAD 4400 - Understanding Terrorism

3 Credits
Understanding the sources of terrorism can help in dealing with terrorists and others who could threaten our homeland. Attendees will be provided with an understanding of the source of threats that may help them in developing effective methods of deterring, preventing, and defeating those threats. Topics may include the history of terrorism, psychology of terrorists, terrorist organizations and support, counter-terrorism organizations, weapons of mass destruction, and asymmetric threats. Prer., Sophomore Standing.

PAD 4401 - Introduction to First Responder Organizations

3 Credits
Students will analyze the policies and practices of agencies commonly referred to as local "first responders," including emergency management, fire and emergency medical, and police organizations. Emphasis will be on homeland security, including the formal and informal relationships between first responder agencies and the manner in which local first responders interact with the state and federal agencies involved in homeland security. Topics may include historical evolution of these agencies; current and future challenges in the fields; services and operations. Prer., Sophomore Standing.

PAD 4600 - Special Topics in Public Administration

1-6 Credits
Covers a variety of special topics relevant to public or nonprofit administration. Course may be taken for credit more than once, provided subject matter is not repeated. Prer., Sophomore Standing.

PAD 5001 - Introduction to Public Administration and Public Service

3 Credits
It is a time of rapid change, resource limitations, and questioning of the roles of public service organizations and professionals in American society. In such a time, it is essential for practitioners and citizens to understand the history, nature, and scope of public service. This course explores the creation of American public and nonprofit institutions, the ways organizations are structured and managed, and the role of the public service practitioner in the challenging contemporary setting.

PAD 5002 - Organizational Management and Behavior

3 Credits
Covers topics such as organization theory and design, managing human capital, group development and performance, inter- and intra-group communication, information management, and ethical decision making. Topics are presented within the framework of how to organize people to enhance the delivery of public services.

PAD 5003 - Research and Analytic Methods

3 Credits
This course examines research methods used to answer questions and test hypotheses in public and non-profit settings. Methods covered include identifying and reviewing scholarly literature; formulating research questions; selecting appropriate design, data collection, and sampling strategies; and analyzing data. Topics include causal and descriptive designs, interviews and surveys, and statistics such as t-test, chi square, regression, and the Statistical Package for Social Sciences (SPSS). Meets with CJ 5003.

PAD 5004 - Economics and Public Finance

3 Credits
Uses economics to explore public and private sector roles, and the allocation of resources in the public sector. Introduces the concepts of public goods, market failure, and externalities. The effects of taxation and subsidies on consumer and firm behavior are analyzed. Also covers cost benefit analysis and national, state, and local budgeting methods.

PAD 5005 - The Policy Process and Democracy

3 Credits
An introduction to theoretical and applied studies of the policy process. This process includes the manner in which 1) issues are conceptualized and brought to the government as problems needing action; 2) policies are designed and selected; and 3) the enacted policies are implemented, monitored, evaluated, and revised. The policy process also includes the study of politics, especially how government and non-government actors interact and exercise power in allocating societal benefits and burdens.

PAD 5006 - Ethics and Leadership

3 Credits
Examines theories of leadership applied to the public and nonprofit sectors and the skills and processes employed by effective leaders. Also considers ethical theories as applied to problems in the public and nonprofit sectors; emphasizes critical thinking to address value conflicts, notably in the context of a pluralistic society; and teaches moral reasoning as a practical professional skill.

PAD 5007 - Qualitative Research Methods

3 Credits
This seminar 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. Prer., PAD 5003.

PAD 5008 - Gender, Race, Ethnicity & Social Class: Implications for Criminology, CJ, & Public Service

3 Credits
This seminar bridges individual experiences and social structure by analyzing contemporary United States policies in respect to gender, race/ethnicity, and social class. Specific attention will be paid to the social, economic, and political factors that led to the development and administration of public and/or crime policies. The implications of such policies in regards to social stratification and inequality will be discussed. Possible substantive areas may include crime and violence, criminal justice systems, immigration, social welfare, education, health and human services, family issues, and drug policies. Graduate and nondegree graduate students only. Meets with CJ 5008.

PAD 5009 - Crime and Violence Prevention and Intervention

3 Credits
The course will draw on criminological, social and behavioral science, and public health theories and methods, to examine prevention and intervention development, evaluation paradigms, and methods of process and outcome evaluations. Drawing on major theories and research pertinent to crime and violence, including characteristics of violence and relevant risk factors, reporting and treatment protocols, and current/potential intervention efforts and prevention initiatives, emphasis is on interdisciplinary contributions to violence prevention and control. Students will be exposed to randomized designs, such as community trials, and evaluation of non-randomized interventions, such as policies and legislation. Special attention is given to the implications of process evaluation in modifying criminal justice policy-making and decision-making. Prer., Graduate students only; to include non-degree grads. Meets with CJ 5009.

PAD 5110 - Seminar in Nonprofit Management

3 Credits
This course provides students with an overview of the principles and concepts that are unique to nonprofit management. Topics include funding diversity, human resource management, program planning and evaluation, marketing, volunteer management, and ethics. Students are also given an introduction to the history and the importance of the nonprofit sector.

PAD 5120 - Nonprofits and Public Policy

3 Credits
Examines the intersection of public policy and the nonprofit world and the ways in which each affects the other. Looks at 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 roll of nonprofits to devolution and privatization of government services, tax exemptions, "Charitable choice," donor control and governance, and the future of the sector. Also investigates 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.

PAD 5125 - Civil Society and Nongovernmental Organizations

3 Credits
Designed for students interested in the international nonprofit sector. 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.

PAD 5130 - Collaboration Across Sectors

3 Credits
The blurring of the three economic sectors, government, business and nonprofits, continues to increase as more partnerships are developed across sectors. Focuses on collaboration and partnerships involving public, nonprofit and for-profit organizations. 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. Meets with CJ 5130.

PAD 5140 - Nonprofit Financial Management

3 Credits
Financial management is one of the core competencies of effective nonprofit managers. Every nonprofit organization needs money to sustain or advance its mission. This course 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.

PAD 5150 - Understanding and Achieving Funding Diversity

3 Credits
This class is designed to provide a comprehensive overview of the range of funding sources available to nonprofit organizations (e.g. foundation and governmental grants, individual and corporate donations, entrepreneurial sources of revenue, events, etc.), 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 fundraising and why it is important to diversify an organization's revenue streams.

PAD 5160 - Nonprofit Boards and Executive Leadership

3 Credits
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 advisory boards, achieving effective board meetings, the realm of liability, using committees, and the board's role in fundraising, among other special subject matter.

PAD 5170 - Strategic Management for Nonprofit and Public Managers

3 Credits
This survey course is designed to train public and nonprofit managers in the effective use of strategic management tools and techniques. Strategic management tools and skills, although traditionally used by business, should not be seen as the exclusive domain of the private sector. The course teaches students how to adapt traditional strategic management capabilities to the particular conditions of public and nonprofit organizations.

PAD 5180 - Social Entrepreneurship

3 Credits
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 in the course of building viable social enterprises. 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.

PAD 5220 - Human Resource Management in Public Service Organizations

3 Credits
Study and practice of human resource management to build effective organizations. Reviews the process of staffing, motivating and managing employees from the initial steps of describing a position and determining compensation to recruiting qualified and diverse applicants; screening and selecting good employees; hiring, training, motivating, developing and providing feedback to employees; and layoffs and promotions. Contemporary issues concerning managerial flexibility and merit pay will be reviewed.

PAD 5250 - Intergovernmental Management

3 Credits
Surveys the basic literature of intergovernmental management and examines the interactive role of managers at federal, state, and local levels of government. Emphasis is on current intergovernmental issues. Prer., Graduate students or students with bachelor's degree.

PAD 5260 - Managing in a Multicultural Society

3 Credits
Using a systems approach, diversity within organizations is examined through the construction and review of theories in private, public and nonprofit organizations. Existing modes of managing diversity are examined and analyzed.

PAD 5262 - Leadership Workshop

3 Credits
This skill building workshop focuses on issues of effective leadership in the organizational setting and enables participants to examine their own leadership style(s) and how those styles influence others. Models of effective leadership are examined and applied to the specific work settings of those participating, with distinctions between leadership and management being developed.

PAD 5265 - Group Dynamics

3 Credits
Explores small group processes and the theories that strive to explain them, with particular attention focused on workplace teams. The course provides an introduction to theories, studies, and empirical findings pertaining to groups and teams, with an emphasis on managerial and organizational implications and applications. Topics include stages of group development, team processes, conflict, power and influence in groups, decision-making, leadership, diversity, problem-solving, virtual teams, and the impact of organizational culture.

PAD 5270 - Management Development

3 Credits
With a focus on the balance between one's personal and professional life, this course seeks to identify and apply principles out of which public managers can increase their effectiveness. Considering such issues as stress management, creative problem solving, time management, cooperative work strategies, effective listening, decision-making, and mechanisms for increasing power, this course has a strong focus on enabling students to personally apply the concepts considered.

PAD 5271 - Managing Conflict and Change

3 Credits
Explores the process of change in organizations, communities and society and the conflicts that arise within those organizations. 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.

PAD 5310 - Public Policy Formulation and Implementation

3 Credits
Building on PAD 5005, students learn how policy is developed and implemented in several levels of government - local, state, federal - and within organizations themselves. Case studies are used to explore the intricacies of developing and implementing policy and the political, economic, and institutional contexts that affect these two stages of policy development. Students also consider different criteria that can be used to judge the effectiveness of programs and policies. Prer., PAD 5005.

PAD 5320 - Public Policy Analysis

3 Credits
Provides training in the systematic analysis of policy and program initiatives. The course also covers benefit cost analysis, cost-effectiveness analysis and present values. Prer., PAD 5004 or ECON 1010; Graduate and non-degree graduate students only.

PAD 5350 - Program Evaluation

3 Credits
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. Meets with CJ 6105.

PAD 5361 - Capstone Seminar

3 Credits
Students demonstrate their mastery of MPA core competencies through conducting a client-based project. Students also make a juried oral presentation of the professional paper that reports project findings. This is the opportunity to apply concepts, theories, and research skills gained in the program to professional practice. Course is taken in the final semester of student's program. Prer., Completion of all core courses; MPA Graduate students only.

PAD 5370 - Media and Public Policy

3 Credits
Explores the conventions and practices of the print and electronic media in the United States. Students will 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.

PAD 5380 - Citizen Participation: Theory and Practice

3 Credits
Tackles the issues of citizen participation and community involvement in theory and practice. Students will work in class on understanding the theoretical foundations that are relevant to citizen participation. Students will also engage in significant out-of-class projects to ground them in the practice of public involvement.

PAD 5390 - Rethinking Social Policy

3 Credits
Focuses on United States social welfare policy. Designed to provide students with an overview of social welfare policies and programs beginning with the New Deal and progressing to study of major social welfare issues, the political and social contexts in which social policies and programs are developed and implemented, and the conflicts and reform efforts that arise.

PAD 5410 - Administrative Law

3 Credits
This course examines the legal aspects of policy implementation, particularly the relationship between courts and administrative agencies. Students will cover 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.

PAD 5440 - Negotiation and Conflict Resolution

3 Credits
Focuses on the concepts and skills necessary to negotiate policy and management decisions and manage internal conflicts. It is designed to help students understand the dynamics that affect negotiations and to apply the principles and strategies of negotiations in a variety of decision-making and dispute resolution contexts.

PAD 5460 - Political Advocacy

3 Credits
This course is designed to address advocacy and lobbying issues for graduate students, in the general area of public policy issues and government problems. Special attention is given to how the advocacy process works in the public sector and policy-making bodies and how lobbying techniques and processes can be understood. The general focus of the class is on practical applications at all levels of government with primary attention given to state and local government. It is anticipated that guest speakers will be invited to attend some of the classes and will have the opportunity to utilize their own academic and professional backgrounds and experiences. Meets with CJ 5460.

PAD 5502 - Public Financial Management and Policy

3 Credits
The use of financial resources is at the heart of governing; policy decisions are meaningful only when resources are provided to implement them. This course examines American public sector finance in relation to other nations; the national government and fiscal well-being; types of budgeting systems and their uses; creation of the national budget; structure of the local government budget; and selected topics such as debt and cash management, accounting for resource use, and forecasting financial condition.

PAD 5503 - Governmental Budgeting

3 Credits
Introduces students to the theories, concepts, and practice of government budgeting and discusses the current issues and challenges in this field. Topics include budget cycles and formats, political considerations, costing and analytical tasks, and fiscal management issues. The role of budgets and budget processes in determining and implementing public policies is also considered. Prer., Graduate students only.

PAD 5540 - Organization Development

3 Credits
A study of 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 recommended.

PAD 5615 - Health Policy

3 Credits
Health is one of the more important policy issues facing America today. This course examines the nature of health policy and how it is impacted by politics, with a focus on the federal government's major programs for purchasing health care, Medicare and Medicaid, and their evolution over time. The course also reviews the impact of socio-cultural context and federalism on program structure, the effects of managed care on the health care system and the state's role in providing health care. Attention is also given to health care issues in Colorado.

PAD 5625 - Local Government Management

3 Credits
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.

PAD 5626 - Local Government Politics & Policy

3 Credits
The perspective of politics and public policy making is essential to understanding local governance. This course focuses on local government political structures, policy analysis and formulation, political forces in administrative decision making, and relationships between professional administrations and elected officials.

PAD 5628 - Urban Social Problems

3 Credits
Examines local government from the perspective of sociology and group dynamics. 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.

PAD 5630 - Executive Local Governance I

3 Credits
A symposium-style course emphasizing the effects governance structure has on local policy implementation outcomes. Students will engage with public sector practitioners and faculty in service-learning projects that allow them to apply foundational local government concepts and produce policy products such as a citizen participation plan or a community

needs assessment. Special case topics and projects will include but are not limited to Colorado state and local government, intergovernmental relationships, community governance, collaboration strategies, citizen engagement and municipal law challenges and opportunities. Prer., PAD 5625 or PAD 5626, and PAD 5503. Graduate students only, to include nondegree grads.

PAD 5631 - Executive Local Governance II

3 Credits
A course emphasizing student competence and creative work on a timely, substantive issue. Students will engage with public sector practitioners and faculty in community-based case studies that focus on local government policy making. Students will demonstrate their ability to integrate multiple approaches to decision making and organizational management with an extended knowledge base of local government issues such as economic development or crisis management. Special case topics and projects will include but are not limited to economic development, fundamentals of emergency crisis, human service challenges, housing, and other local public service areas. Prer., PAD 5625 or PAD 5626, and PAD 5503. Graduate students only, to include nondegree grads.

PAD 5650 - Disaster and Emergency Management

3 Credits
Examines policies for the management of hazards, emergencies and disasters. Focuses on a series of case studies concerning major disasters and on management principles drawn from those cases. Examines the role of institution processes, government organizations and nongovernmental organizations in emergency management. Meets with CJ 5650.

PAD 5710 - Public Sector Technology

3 Credits
Introduces participants to innovative and cutting-edge technology in the public sector. Emphasizes current information technology concepts, issues and practices, systems, self-service kiosks, groupware, simulations, imaging systems, data warehousing, and the Internet/World Wide Web.

PAD 5930 - Battered Women and the Legal System

3 Credits
Provides a practical understanding of how the following relate to battered women and their children: a) major developments in federal, state, tribal, administrative, statutory, and case law; b) the role and responses of law enforcement, judges, attorneys, victim assistance providers, and other legal system agents; and c) the role and process of victim advocacy. Meets with CJ 5930.

PAD 5950 - Major Issues in National and Homeland Security

3 Credits
This course covers historical developments of the national security apparatus in the United States since the end of World War II, its role during the Cold War, and developments after the Cold War and in the aftermath of 9/11. Students will be exposed to the discussions about new challenges to the national and homeland security apparatus such as radical religious ideology, proliferation of failed states and non-state actors, 4th generation warfare and issues such as climate change and cybercrime proliferation and their impact on national and homeland security. Meets with CJ 5950. Prer., Graduate and nondegree graduate students only.

PAD 5960 - Introduction to Homeland Security and All Hazards

3 Credits
This course covers general themes related to the introduction to the field of homeland security and understanding of all hazards. It will analyze shortcomings in response to great natural and manmade disasters in recent U.S. history such as Hurricane Katrina, Waldo Canyon fire, Black Forest fire, Hurricane Sandy, Fukushima nuclear incidents, etc. The course is designed to expose and bring students to the discussion about great disasters in the past, but also to the discussion about issues that are representing threat to the country in the futujre such as climate change, cyber security, non-state actors operating in the territories of failed states, etc. Meets with CJ 5960. Prer., Graduate and nondegree graduate students only.

PAD 5965 - International Relations and U.S. Foreign Policy

3 Credits
This course relates to the international relations system that has been established since the Peace of Westphalia and establishment of sovereign states. The course will offer insights into concepts like diplomacy, balance of power and international organizations (League of Nations, United Nations, NATO, OSCE, etc.). Students will be exposed to the discussions about U.S. foreign policy primarily since the Monroe Doctrine, and the role of the U.S. in the international theatre especially during the Cold War, post-Cold War and post-9/11 periods. Prer., Graduate and nondegree graduate students only. Meets with CJ 5965.

PAD 5970 - Intelligence and Security Policymaking

3 Credits
This course will survey the roles and functions of intelligence agencies in support of American policymakers and operations, including an introduction to the "intelligence cycle." The course begins with a review of national-level intelligence entities, their evolution since 9/11, and the policymakers and departments they serve, before moving to intelligence, policymakers and executive agencies at the state and local levels. Intelligence support functions across a range of policy sectors will be examined, from tactical to strategic levels and current intelligence to long-term needs. Navigating the relationships and distance between intelligence agencies and policymakers to optimize the efficacy and integrity of intelligence support is a central topic, including oversight of intelligence. The course will also look at intelligence liaison and comparative intelligence systems. Prer., Graduate and nondegree graduate students only. Meets with CJ 5970.

PAD 5980 - Security and Emergency Management Leadership

3 Credits
Understanding the critical role a leader plays in security and emergency management is vital to successful operations. This course will seek to identify and develop the leadership requirements during times of crisis while identifying a strategic plan that is characterized by strengths, weaknesses, opportunities, and threats. The student will learn how to best organize preventive measures and use valuable resources that include the Incident Command System (ICS) to minimize the effect of catastrophic events. The class will also introduce the need for homeland security in the fight against both international and domestic terrorism along with natural disasters for a well-rounded approach to successful operations. Prer., Graduate and nondegree graduate students only. Meets with CJ 5980.

PAD 5985 - U.S. Intelligence Analysis in the 21st Century

3 Credits
This course will provide students with a broad survey of intelligence analysis issues and research, beginning with an examination of the role intelligence analysis plays in support of policymakers and security operations. This will include the various types of intelligence analysis required and the different kinds of relations that characterize the analyst-policymaker dynamic. Students will learn about cognitive biases and analytic pathologies, as well as the role of critical thinking skills and social science methodology in intelligence analysis. The Structured Analytic Techniques (or SATs) devised and used by the U.S. Intelligence Community are also introduced. Key issues include the analytic reforms of the last decade (and the efficacy of those reforms), measuring analytic performance and techniques, emerging intelligence challenges such as climate change, intelligence politicization, and the management of intelligence analysts, analytic groups, and the analytic process. Prer., Graduate and graduate nondegree students only. Meets with CJ 5985.

PAD 6115 - Grant Writing

3 Credits
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 find a funding source among various public and private sources and how to plan and write a proposal. Meets with CJ 6115.

PAD 6125 - Grant Management

3 Credits
Designed for grant management for public and nonprofit agencies. Provides students with knowledge regarding the procedures required for proposal processing within organizations and the processes and policies entailed in managing grant awards. Addresses programmatic and financial aspects from project development including proposal and budget development, partnership/relationship building, implementation, accepting and managing grant and contract awards, grants-management system(s), reporting, record keeping, accountability, audit requirements, ethics in the grants environment, audits and monitoring, through closeout procedures, and program evaluation. Course content also includes federal OMB circulars, basic human resource issues, project management strategies, and reporting obligations. Prer., Graduate students only; to include non-degree grads. Meets with CJ 6125.

PAD 6135 - Advanced Program Evaluation

3 Credits
Students design and carry out an evaluation of a program that incorporates current evaluation methods and principles derived from research, theory, practice wisdom, and their own experience. These occur within a field placement agency or their own workplace agency. Topics include purposes and types of evaluations at the program and direct practice levels, instrument design, data analysis, ethical issues, and organizational, political, social, and cultural factors affecting evaluation in diverse human contexts. Evaluation methods covered include single-system designs; client-focused evaluations; practitioner-focused evaluations; program (group-level) evaluations, including input, process, outcome evaluations; standardized and self-constructed instruments, data analysis and reporting. Prer., PAD 5350 or CJ 6105. Graduate students only; to include nondegree grads. Meets with CJ 6135.

PAD 6600 - Special Topics in Public Administration

1-6 Credits
Courses with this number cover a variety of special topics relevant to public or nonprofit administration. Course may be taken for credit more than once, provided subject matter is not repeated.

PAD 6910 - Field Study in Public Administration

3 Credits
For students who have not had substantial professional experience in public or nonprofit organizations. Prer., 18 hours of graduate-level PAD or CJ coursework; MPA graduate students only.

PAD 6950 - Master's Thesis

3-6 Credits
The master's thesis is available in lieu of P AD 5361 for MPA students who have achieved an exceptional academic record and who wish to pursue in-depth independent research of a theoretical nature. The thesis may be undertaken in lieu of up to 6 credits of elective coursework by students who meet eligibility requirements outlined in the MPA thesis option guidelines. Prer., MPA graduate students only.

PAD 9500 - Independent Study

1-3 Credits
Independent study in Public Administration. Prer., Consent of Instructor.

PAD 9990 - Candidate for Degree

0 Credits
Students who will be defending a thesis or taking qualifying exams during a given semester should enroll for this course if they are not registered for any other class. Consent of dean or faculty advisor required. Prer., MPA graduate students only.

PES - Physics & Energy Science

PES 1000 - Physics in Everyday Life

3 Credits
A non-mathematical overview of physics and how it affects our everyday life. Topics to be included are balancing and equilibrium, tornadoes, weather patterns, circus balancing acts, air conditioners, musical instruments and other interesting applications of physics. Recommended for students with no science or mathematics background. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2.

PES 1010 - Physics for Life Science I - Algebra Based

4 Credits
General physics with an emphasis on applications to life sciences and health professions. GT-SC2. Prer., Two years of high school algebra or equivalent.

PES 1020 - Physics For Life Science II

4 Credits
General physics with an emphasis on applications to life sciences and health professions. GT-SC2. Prer., PES 1010.

PES 1040 - Physics in Science Fiction

3 Credits
A study of the physics that exists in commonly occurring science fiction themes. Topics include a general discussion of conditions for life on other planets, orbital motion, Einstein's theory of relativity, and electromagnetic phenomena. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2.

PES 1050 - General Astronomy I

3 Credits
The methods and results of modern astronomy (solar systems and stars) at an elementary level. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2.

PES 1060 - General Astronomy II

3 Credits
The methods and results of modern astronomy (solar systems, stars, galaxies, black holes, quasars, cosmology) at an elementary level. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2.

PES 1080 - Science on the Nanoscale

3 Credits
Explores nanoscale science and applications to technology on the scale of sub-atomic particles, atoms and molecules where concepts of quantum theory are important. After an introduction to concepts of quantum physics, applications to physics, biology and engineering will be examined.

PES 1090 - General Astronomy Laboratory I

1 Credit
A mixture of evening viewing and indoor exercises, weather dependent. Covering such topics as constellations and telescope observations, lunar geology, distance measurements, and earth seasons. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1.

PES 1100 - General Astronomy Laboratory II

1 Credit
A mixture of evening viewing and indoor exercises, weather dependent. Covering such topics as constellations and telescope observations, nebula and galaxy classification, distance measurements and spectroscopy. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC1.

PES 1110 - General Physics I - Calculus Based

4 Credits
Rigorous calculus-level course in classical physics for science and engineering students. Includes measurements, vectors, motion in one dimension, motion in three dimensions, particle dynamics, work and energy, linear and angular momentum, rotation of rigid bodies, static equilibrium, oscillation, and gravity. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Coreq., MATH 1320 or MATH 1330 or MATH 1350.

PES 1120 - General Physics II

4 Credits
Topics covered include electrostatics, the electric field, Gauss's law, electric potential, capacitors and dielectrics, current and resistance, the magnetic field, Ampere's law, Faraday's law, inductance, oscillations, and electromagnetic waves. Prer., PES 1110, Coreq., MATH 1330 or MATH 1360.

PES 1140 - Introduction to Physics Laboratory

1 Credit
Experiments designed to qualitatively verify conceptsin mechanics, light, and optics. To be taken concurrently with PES 1000 only. This lab is not required but must be taken if the student wishes credit for a natural science lab course in the natural science requirements. GT-SC1. Open only to PES 1000 students. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World.

PES 1150 - General Physics Lab I Algebra Based

1 Credit
Designed to be taken with PES 1010. Experiments on mechanics and graphical analysis of results. GT-SC1. PES 1110 and PES 1710 students are to take lab PES 1160.

PES 1160 - Advanced Physics Lab I

1 Credit
Advanced calculus-based labs covering all of the major topics in mechanics ranging from projectile motion to Newton's Laws to Conservation of Energy to Rotational Motion. Designed to be taken concurrently with PES 1110 or PES 1710.

PES 1170 - Advanced Physics Lab I Honors Section

1 Credit
Advanced calculus-based labs covering all of the major topics in mechanics ranging from projectile motion to Newton's Laws to Conservation of Energy to Rotational Motion. To be taken concurrently with PES 1710 Honors Physics. Students will be encouraged to use individual approach, under guidance of faculty instructor. Open to PES 1710 students only.

PES 1310 - A Lab of Her Own: Science and Women

3 Credits
Introduction to natural science and its methods for non-science majors. It focuses on women's participation in both the formation of scientific concepts and the development of methodology. Modern concepts of science and mathematics with an emphasis on women's contributions to these fields will be presented. This course will also offer a feminist critique of the traditional methods of science. Approved for LAS Natural Science area requirement. GT-SC2. Meets with PHIL 1310 and WEST 1310.

PES 1450 - Musical Acoustics

3 Credits
A survey of the physics behind the production of musical tones and scales, including standing waves and normal modes of vibration in both strings and cavities, harmonics and overtone series, tempers of musical scales, sum and difference tones and intonation, stringed and conical bore instruments.

PES 1500 - Introduction to Energy Science I

3 Credits
Brief history of human energy use; rudimentary energy concepts and fundamental dimensions; fossil fuels; magnetism and electricity; power plants; and environmental effects of energy production and use. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. GT-SC2. Meets with ENSC 1500.

PES 1510 - Introduction to Energy Science II

3 Credits
Brief history of human energy use; rudimentary energy concepts and fundamental dimensions; automobiles; solar energy; wind energy; other alternative energy approaches; environmental effects of energy production and use; and solid waste management. Approved for Compass Curriculum requirement: Explore-

Physical and Natural World. GT-SC2. Meets with ENSC 1510.

PES 1600 - Introductory Solar Energy

3 Credits
Brief history of human solar energy use; rudimentary energy concepts and fundamental dimensions; basic operation of the sun; fundamentals of thermal energy transfer and storage; economics and application of solar principles to construction; frequent computer simulation and web activities. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Sustainability. GT-SC2. Meets with ENSC 1600.

PES 1620 - Solar Energy Laboratory

1 Credit
Hands-on lab class emphasizing experimental techniques and the scientific method applied to solar phenomena(position and intensity) and both passive and active solar energy systems. Approved for the LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Sustainability. Prer. or Coreq., PES 1600. Meets with ENSC 1620.

PES 1710 - Honors Physics I

4 Credits
Designed for physics majors or students seriously interested in physics. Topics covered include classical mechanics and special relativity. It is a rigorous calculus-level course. The attendance of recitation class associated with lectures is obligatory. Approved for LAS Natural Science area requirement.

PES 1720 - Honors Physics II

4 Credits
Designed for physics majors or students seriously interested in physics. This second semester of honors physics covers electricity and magnetism. It is a rigorous calculus-level course. The attendance of recitation class associated with lectures is obligatory. Approved for LAS Natural Science area requirement.

PES 1950 - Special Topics

1-3 Credits
Course covering subjects of current interest on a one- time basis. Consult Course Search on the UCCS website or the MyUCCS Portal for titles.

PES 1970 - Special Topics

1-3 Credits
Course covering subjects of current interest on a one-time basis. Consult Course Search on the UCCS website or the MyUCCS Portal for titles.

PES 2130 - General Physics III

3 Credits
A continuation of PES 1120. Topics covered include fluid mechanics, waves temperature, heat and the first law of thermodynamics, kinetic theory of gases, entropy and the second law of thermodynamics, geometrical optics, interference, diffraction, light, and quantum physics. Prer., PES 1120; Coreq., MATH 2350.

PES 2150 - Physics Lab II Algebra Based

1 Credit
Designed to be taken with PES 1020. Covers radiation physics, electrostatics, AC and AC circuits, magnetic fields. GT-SC1. PES 1120 and PES 1720 students are to take lab PES 2160.

PES 2160 - Advanced Physics Lab II

1 Credit
Advanced calculus-based labs covering all of the major topics in electricity and magnetism ranging from electric fields to circuit analysis to AC circuits to magnetism. Designed to be taken concurrently with PES 1120 or PES 1720.

PES 2500 - Sustainable Energy Fundamentals

3 Credits
Past, present, and future of human energy use; rudimentary energy concepts and fundamental dimensions; efficiency of energy conversions; heat transfer; commercial electricity; alternative energy sources; environmental ramifications; energy conservation; computer simulation and web activities. This survey course is designed for science majors and assumes some knowledge of calculus and the physical sciences. Meets with ENSC 2500.

PES 3060 - Astrophysics

3 Credits
A classic look at stellar characteristics, the structure and content of our galaxy and the universe in a rigorously mathematical fashion. The theory of stellar spectra is stressed along with stellar distances, magnitudes, and stellar evolution on the Hertzsprung-Russell diagram. Prer., PES 2130.

PES 3130 - Modern Physics

3 Credits
Special relativity, development of wave-particle duality, atomic structure, Schroedinger wave equation, the hydrogen atom, atomic and molecular spectra, introduction to the solid state and band theory. Prer., PES 2130.

PES 3140 - Intro to Computational Physics

3 Credits
An introduction to using computers to solve physics problems and to plot results. The class will be taught using Mathematica and will include problems from mechanics, electricity, waves, and modern physics. Nonlinear physics and chaos theory will also be covered. Prer., PES 3130.

PES 3150 - Modern Physics Laboratory

2 Credits
Teaches the methods and procedures of experimental physics at an advanced level, including such topics as physical optics, high resolution spectroscopy, and energies of radioactive decay products. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test.

PES 3170 - Instrumentation Laboratory I

2 Credits
Design and operation of devices for modern physics experiments. Interfacing computers with real world experiments. Requires a knowledge of Labview. Prer., PES 2150 or PES 2160.

PES 3180 - Instrumentation Laboratory II

2 Credits
Design and operation of devices for modern physics experiments. Interfacing computers with real world experiments. Requires a knowledge of Labview. Prer., PES 2150.

PES 3210 - Classical Mechanics I

3 Credits
Newtonian mechanics, oscillations, Lagrange's

and Hamilton's equations, central forces, scattering, and rigid body motion. Employs vector analysis and calculus. Prer., PES 2130; Prer., or Coreq., MATH 2350.

PES 3250 - Mathematical Methods of Physics and Engineering

3 Credits
Survey of mathematical methods as preparation for advanced physics and engineering courses. Includes vector calculus, partial differential equations, special functions, Fourier analysis, and generalized functions such as the Dirac delta function.

PES 3310 - Principles of Electricity and Magnetism

3 Credits
Elements of the mathematical theory of electricity and magnetism, including electrostatics, magnetostatics, polarized media, direct and alternating current theory, and introduction to electromagnetic fieldsand waves. Prer., PES 2130 and MATH 2350.

PES 3320 - Principles of Electricity and Magnetism II

3 Credits
Continuation of PES 3310. Elements of the mathematical theory of electricity and magnetism, including electrostatics, magnetostatics, polarized media, direct and alternating current theory, and an introduction to electromagnetic fields and waves. Prer., PES 3310.

PES 3410 - Thermodynamics and Statistical Mechanics

3 Credits
Statistical mechanics applied to macroscopic physical systems; statistical thermodynamics; classical thermodynamic systems; applications to simple systems. Relationship of statistical mechanics to thermodynamics. Prer., PES 3130.

PES 3650 - Nuclear Physics and Energy Technology

3 Credits
Nuclear structure, radioisotopes, nuclear reactions, fission, and fusion. Emphasis on nuclear power production and its environmental impact. Prer., PES 3130.

PES 3670 - Exotic Energy Sources

3 Credits
A survey of the technology of wind energy conversion, including climatic aspects, site selection and tower height, generator and propeller design, control systems, and legal aspects.

PES 3700 - Acoustics

3 Credits
Standing waves on strings and in cavities, sound spectra, solutions to the 3-dimensional D'alembert equation in cylindrical equation in cylindrical coordinates with applications to modeling wind instruments and loudspeakers. Prer., PES 2130, MATH 2350.

PES 3950 - Special Topics

1-3 Credits
Course covering subjects of current interest on a one-time basis. Consult Course Search on the UCCS website or the MyUCCS Portal for titles.

PES 3970 - Special Topics

1-3 Credits
Course covering subjects of current interest on a one-time basis. Consult Course Search on the UCCS website or the MyUCCS Portal for titles. Prer., PES 3130.

PES 4150 - Solid State Laboratory

2 Credits
Advanced laboratory on the measurement of fundamental properties of solids. Includes introduction to vacuum and cryogenic technologies. One lecture and one laboratory session per week. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., PES 2150 and 3130. Meets with PHYS 5150.

PES 4160 - Thin Films Laboratory

1 Credit
Introduction to thin film deposition and characterization. Facilities include evaporation, sputtering, Auger electron spectroscopy, ellipsometry and scanning electron microscopy. Coreq., PES 4490.

PES 4170 - Optics Lab

2 Credits
Advanced experiments in classical and modern physics are selected to accompany and supplement the previous semester lecture course in Optics, PES 4510. Among other topics, this rigorous lab course covers the emission and propagation of coherent and incoherent light, fiber optical devices, nonlinear optical effects, and introduction to devices and spectroscopic techniques based on modern optics. Optics lecture is not a prerequisite. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., Junior or Senior standing.

PES 4250 - Quantum Mechanics

3 Credits
A sophisticated treatment of quantum mechanics including the Schroedinger equation, wave mechanics, hermitian and unitary matrices, the hydrogen atom, angular momentum and spin. Prer., PES 3130.

PES 4260 - Quantum Mechanics II

3 Credits
Continuation of PES 4250, time dependent and time dependent perturbation theories, the WKB approximation, variational principle and scattering. Prer., PES 4250.

PES 4300 - Celestial Mechanics I

3 Credits
Study of the fundamental principles of celestial mechanics including Kepler's laws, Newton's laws, and the two-body problem. Study of celestial coordinate systems, time keeping, and computation of orbits from observations as well as an introduction to perturbation theory. Prer., PES 2130, MATH 2340.

PES 4420 - Physics of Materials

3 Credits
An introduction to the physics of materials. Topics will include crystallography and defects, phase diagrams, phase transformations, diffusion, mechanical properties, and electrical properties. Prer., PES 3130.

PES 4460 - Intro to Solid State Physics I

3 Credits
Theory of solids including crystal structure, x-ray, neutron and electron diffraction, phonons, elastic and thermal properties of insulators, free electron Fermi gas, band structure (Kronig-Penney model, Bloch's theorem, tight-binging approximation, k*p model) and Fermi surface (Harrison construction, Landau levels). Prer., PES 3310 and PES 3320. Meets with PHYS 5460.

PES 4470 - Intro to Solid State Physics II

3 Credits
Theory of solids, including superconductors, magnetic materials (diamagnets, paramagnets, ferromagnets, and antiferromagnets), dielectrics and ferroelectrics. Theory of electronic (plasmons, polaritons, and polarons) and optical (excitons) excitations, surfaces, interfaces, and nanostructures. Prer., PES 4460. Meets with PHYS 5470.

PES 4480 - Surface and Interface Physics

3 Credits
An introduction to the solid state physics of surfaces and interfaces including structural, thermodynamic and electrical properties. Gas-surface interactions and characterization techniques will also be examined. Prer., PES 3130.

PES 4490 - Physics of Thin Films

3 Credits
A broad survey of the physics of thin films (emphasizing nucleation and growth) and common techniques for the production and characterization of thin films. Prer., PES 3130. Meets with PHYS 5490.

PES 4510 - Optics

3 Credits
An advanced undergraduate treatment of topics in geometrical, physical, and quantum optics. Prer., PES 2130 and either PES 3130 or 3310.

PES 4600 - Special and General Relativity

3 Credits
Investigates the theoretical and experimental basis for Einstein's Theory of Relativity. The concept of four dimensional space-time is introduced through Special Relativity. The concept of curved space-time is presented using the mathematics of tensors. Open to juniors and seniors only. Prer., PES 2130. Meets with PHYS 5600.

PES 4720 - Stellar Structure and Evolution

3 Credits
Basic stellar astronomy and astrophysics. H-R diagrams. Principles of stellar structure including generation and energy transport. Stellar formation and evolution to compact objects. Prer., PES 3060 and PES 3410.

PES 4800 - Photovoltaics

3 Credits
Fundamental physics of photovoltaic cells including band structure, diode junction, and interactions with light. Fundamental and practical considerations include fabrication of panels and arrays, integration with electric grid-battery storage, and future technologies. Prer., PES 2130, PES 2500, MATH 2350. Meets with ENSC 4800.

PES 4810 - Senior Physics Seminar

2 Credits
Presentation methods in physics. Students present on a wide variety of topics in physics culminating in a formal presentation by the student on a current research topic. Student is graded by a faculty panel on his/her presentation, defense of topic and general knowledge of physics. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Summit. Prer., Senior status in physics or consent instructor.

PES 4850 - Senior Project

3 Credits
Special experimental or theoretical research project in a field of physics or physics-related energy science. Project to be chosen in conjunction with instructor and should represent a new contribution to knowledge in the field, or a repetition of current experimental research, or a literature search and demonstrated knowledge of current theoretical research. a written report is required. Prer., Senior status in department and permission of instructor.

PES 9300 - Independent Study for Physics, Undergraduate

1-3 Credits
Prer., Consent of instructor.

PGMT - Professional Golf Management

PGMT 1002 - Qualifying/Level 1 PGA Golf Management 2.0 Part 1

3 Credits
Qualifying and partial Level One of the PGA Golf Management Program 2.0. Topics include introduction to PGA/PGM, rules of golf, PGA history and constitution, and customer relations. Prer., PGA Golf Management students only.

PGMT 1012 - Level 1 PGA Golf Management Part 2

2 Credits
Level One of the PGA Golf Management Program 2.0. Topics include golf car fleet, business planning, and tournament operations. Prer., PGMT 1002, PGA Golf Management students only.

PGMT 1050 - Golf for Business and Life

1 Credit
Golf for Business and Life is a PGA of America initiative, designed to teach and improve the golf skills of beginning students through instruction provided by PGA professionals, and to suggest ways in which the students can use golf as a business tool as they enter the professional world.

PGMT 1100 - Cooperative Internship I

1 Credit
Provides the PGM student with practical knowledge and experience of golf operations through employment at a golf facility or other suitable organization. Prer., PGMT 1010 or PGMT 1012.

PGMT 1202 - Level 1 Introduction to Teaching and Golf Club Performance - PGA Golf Management 2.0

2 Credits
Level One of the PGA Golf Management Program 2.0. Topics include introduction to teaching and golf club performance. Prer., PGMT 1012.

PGMT 2002 - Level 2 PGA Golf Management

2 Credits
Level Two of the PGA Golf Management Program 2.0. Topics include golf operations.

Prer., PGMT 1202, PGA Golf Management students only.

PGMT 2012 - Level 2 PGA Golf Management Part 2

1 Credit
Level Two of the PGA Golf Management Program 2.0. Topics include intermediate teaching review, merchandise and inventory. Prer., PGMT 2002, PGA Golf Management students only.

PGMT 2100 - Cooperative Internship IIa

1 Credit
Provides PGM students with practical knowledge and experience of golf operations through employment at a golf facility or other suitable organization. Approved for Compass Curriculum requirement: Navigate. Prer., PGMT 1100.

PGMT 2110 - Cooperative Internship IIb

1 Credit
Provides the PGM student with practical knowledge and experience of golf operations through employment at a golf facility or other suitable organization. Approved for Compass Curriculum requirement: Navigate. Prer., PGMT 1100.

PGMT 2202 - Level 2 Intermediate Teaching and Golf Club Alteration - PGA Golf Management 2.0

2 Credits
Level Two of the PGA Golf Management Program 2.0. Topics include intermediate teaching and golf club alteration. Prer., PGMT 1202, PGA Golf Management students only.

PGMT 2502 - Level 2 Turfgrass Management - PGA Golf Management Educational Program 2.0

1 Credit
Level Two of the PGA Golf Management Program 2.0. Topics include turfgrass management. Prer., PGMT 1012, PGA Golf Management students only.

PGMT 3002 - Level 3 PGA Golf Management 2.0

3 Credits
Level Three of the PGA Golf Management Program 2.0. Topics include human resource management, supervision and delegation. Prer., PGMT 2002, PGMT 2012, PGMT 2202, PGMT 3502, PGA Golf Management students only.

PGMT 3012 - Level 3 PGA Golf Management Part 2

2 Credits
Level three of the PGA/PGM 2.0 educational curriculum player development programs and teaching business.Prer., Junior/senior only and PGMT 2002.

PGMT 3202 - Level 3 Advanced Golf Instruction Part 1 PGA Golf Management 2.0

2 Credits
Level Three of the PGA Golf Management Program 2.0. Topics include player development and career enhancement. Prer., PGMT 2012, PGA Golf Management students only.

PGMT 3212 - Level 3 Advanced Golf Instruction Part 2 PGA Golf Management 2.0

1 Credit
Level Three of the PGA Golf Management Program 2.0. Advanced Golf Instruction. Prer., PGMT 2012, PGA Golf Management students only.

PGMT 3602 - Level 3, Food and Beverage Control - PGA Golf Management Educational Program 2.0

1 Credit
Level Three of the PGA Golf Management Program 2.0. Topics include food and beverage control. Prer., PGMT 2012, PGA Golf Management students only.

PGMT 4100 - Cooperative Internship IIIa

1 Credit
Provides the PGM student with practical knowledge and experience of golf operations through employment at a golf facility or other suitable organization. Prer., PGMT 1100.

PGMT 4110 - Cooperative Internship IIIb

1 Credit
Provides the PGM student with practical knowledge and experience of golf operations through employment at a golf facility or other suitable organization. Prer., PGMT 1100.

PGMT 9400 - Professional Golf Management Independent Study

1-3 Credits
Independent study in Professional Golf Management. With the consent of the instructor who directs the study and the dean.

PHIL - Philosophy

PHIL 1000 - Introduction to Philosophy

3 Credits
An introduction to the fundamental questions of philosophy through a study of several major philosophers in the history of philosophy. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures; Writing Intensive. GT-AH3.

PHIL 1020 - Introduction to Ethics

3 Credits
Introductory study of major philosophies on the nature of the good for humans, principles of evaluation, and moral choice. Some attention is given to contemporary topics such as violence and abortion. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive. GT-AH3.

PHIL 1040 - The Individual and Society

3 Credits
Addresses alternative methods for creating a self in a technologically advanced society. In particular, the course will ask how philosophy can provide a foundation for discussion, dialogue, and debate. Approved for LAS Oral Communication requirement.GT-AH3.

PHIL 1050 - Philosophy and Religion

3 Credits
An introduction to philosophy through religious topics such as sacredness, faith, reason, revelation, creation, immortality, and God's existence. GT-AH3.

PHIL 1100 - Introduction to Religion

3 Credits
An introduction to the study of religious phenomena such as myth, symbols and rituals as they relate to religious beliefs. The concepts of sacred narratives, sacred histories, and religious experiences will be discussed along with different approaches (e.g., psychological, sociological, anthropological) to the study of religion.

PHIL 1120 - Critical Thinking

3 Credits
Introduction to the formal and informal standards and critical techniques used in the evaluation of daily reasoning and argument. Approved for LAS Humanities area requirement. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a logic course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. GT-AH3.

PHIL 1150 - What Is Justice?

3 Credits
A study of the major philosophical views regarding justice and their applications to practical issues.

PHIL 1200 - Sports Ethics

3 Credits
Survey of the major ethical issues that surround the sport industry within the political and economic context of America.

PHIL 1300 - Intro to Philosophies of Asia

3 Credits
Covers classic and recent representatives of the major philosophical and religious traditions of Asia, including Hindu, Buddhist, Confucian, Daoist, and Shinto thought. Approved for LAS Humanities and Global Awareness area requirements. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive.

PHIL 1310 - A Lab of Her Own: Science and Women

3 Credits
An introduction to natural science and its methods for non-science majors. It focuses on women's participation in both the formation of scientific concepts and the development of methodology. Modern concepts of science and mathematics with an emphasis on women's contributions to these fields will be presented. This course will offer a feminist critique of the traditional methods of science. Approved for the LAS Natural Science area requirement. Meets with PES 1310 and WEST 1310.

PHIL 1400 - Introduction to Sustainability and Environmental Ethics

3 Credits
This introductory course explores the nature, scope, and complexity of environmental challenges facing us. It utilizes Western and non-Western philosophical and ethical perspectives. Examined topics include: wilderness preservation, global climate change, water usage, ecological restoration, ethical eating, and environmental justice. Approved for LAS Global Awareness requirement.

PHIL 3000 - Cosmology and Culture

3 Credits
This course traces the path of philosophical and scientific world views from Aristotle, to Newton, to Relativity and the corresponding philosophical and cultural transformations that each worldview gives rise to. Emphasis will be placed on the philosophical ideas of each era and on the application of these ideas to culture. Approved for LAS Global Awareness area requirement and Humanities area requirement. Approved for Compass Curriculum requirements: Navigate; Writing Intensive.

PHIL 3060 - Religion and Politics in the U.S

3 Credits
This course will examine the role of religion in American politics. Dealing with complex issues such as the church/state relationship and the faith of political leaders, this course will critically and historically examine the relationship between religion and politics in the American landscape.

PHIL 3070 - Religion and Sports

3 Credits
This course explores the complex relationship between religion and sports. Is sports a religion? Does God care who wins the Super Bowl? These and other questions relating to the culture that continues to value religion and sports will be addressed. Approved for Compass Curriculum requirement: Writing Intensive.

PHIL 3080 - Religion & the Spirit of Capitalism

3 Credits
Explores the complex relationship between religion and capitalism. The course will address issues of religious accommodation to capitalistic culture as well as religious critique of the economy. Special attention is paid to consumer culture.

PHIL 3100 - World Religions

3 Credits
A reading-discussion course which explores the major world religions and the nature of their appeal to the spiritual aspirations of members of the human family. Approved for LAS Humanities area and Global Awareness requirements. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive. Prer., previous course in philosophy.

PHIL 3110 - Women and Religion

3 Credits
Examines the way(s) in which women have been, and continue to be viewed in various religions through comparing sacred and other texts with actual religious practices and beliefs. This course engenders an appreciation of the tension between the ideal expectations for and the real possibilities available to women in religious traditions. Meets with WEST 3110.

PHIL 3120 - Greek and Roman Myth

3 Credits
A philosophical examination of Greek and Roman myth based on a variety of ancient and modern hermeneutical methods, including approaches from the Presocratics, Platonism, Aristotle, Stoicism, Structuralism, Semantic Theory, Psychoanalysis and Ritual Theory.

PHIL 3130 - Ethics of Life and Health

3 Credits
Ethical dimensions of the patient-physician relationship and the impact of medical technology. Topics include informed consent and experimentation with human subjects, technological manipulation of birth and death processes, allocation of medical resources, genetic screening in the workplace, and genetic engineering. Approved for Compass Curriculum requirements: Navigate, Writing Intensive. Meets with PHIL 5130.

PHIL 3140 - Women in Classical Antiquity

3 Credits
Analysis of the philosophical views of women and by women in ancient Greek, Roman and Egyptian thought. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with HIST 3010 and WEST 3140.

PHIL 3160 - Philosophical Issues in Death and Dying

3 Credits
The meaning of death and dying in the history of Western philosophy from antiquity to contemporary Existentialism. Detailed examination of ethical issues raised in the care of the dying. Euthanasia and termination of treatment, care of the seriously ill newborn, etc. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures; Writing Intensive.

PHIL 3170 - Theories of Knowledge

3 Credits
Consideration of the classical and contemporary, contributions to the analysis of the nature, limits, and conditions of knowledge. Meets with PHIL 5180.

PHIL 3180 - Practical Ethics

3 Credits
An examination of the applicability of some standard ethical theories to the specific moral issues raised by and encountered in the practice of professions, such as business, engineering, law, health care, politics, and teaching. Approved for LAS Humanities area and Cultural Diversity requirements. Approved for Compass Curriculum requirements: Explore-Arts, Humanities, and Cultures; Writing Intensive.

PHIL 3190 - Ethics

3 Credits
The problem of rational justification of ethical standards, including a selected treatment of the history of ethics. Approved for Compass Curriculum requirement: Writing Intensive. Meets with PHIL 5190.

PHIL 3200 - Politics and the Law

3 Credits
Examination of the most influential recent works expressing the conservative, liberal, Marxist and anarchist contributions to contemporary social and political theory. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirements: Explore-Society, Health and Behavior; Writing Intensive.

PHIL 3210 - Capitalism: A Love Story

3 Credits
This course traces the historical origins of capitalism, explains the enlightenment ideals on which it is based, and then the various critiques it has endured. Approved for LAS Social Sciences area requirement.

PHIL 3230 - Gender, Race, and Sexuality

3 Credits
An introductory course that provides an overview of first, second, and third wave feminism. Focus will be on how to avoid essentializing the category "Woman" and will examine how the intersection of various forms of oppression (gender, race, sexuality, economic class, and physical ability) shape and change feminist politics in the United States and globally. Approved for LAS Cultural Diversity requirement. Prer., PHIL1000 or WEST 2010. Meets with WEST 3130.

PHIL 3240 - Images of War and Terrorism

3 Credits
Critical examination of the philosophic commitments that underlie and affect war, conflict resolution, and peace; evaluation of various questions involved in conducting war and resolving disputes; consideration of the feasibility of pacifism. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Navigate.

PHIL 3300 - Philosophy of Mind

3 Credits
Consideration of the central problems in the philosophy of mind, including the mind-body problem; the knowledge of other minds; free will and determinism; as well as discussion of concepts such as action, intention, motive, desire, memory, etc.

PHIL 3330 - Emotion and Cognition

3 Credits
Philosophy has tended to relegate emotions and emotional life to a minor role in the exposition of traditional philosophical questions or to eliminate emotions altogether from consideration. This course will rethink the role of emotions in philosophy. Prer., One philosophy course or instructor permission.

PHIL 3340 - Love and Hate: Philosophy, Literature, & Cognitive Science

3 Credits
An examination of love and hatred utilizing texts from philosophy, psychology, cognitive studies, literature and science to develop new ideas about love and hatred. Prer., previous course in Philosophy.

PHIL 3345 - Philosophy of the Body: Western and Indian Perspectives

3 Credits
This course explores philosophical questions, topics, and themes concerning the body in Western and Indian traditions. The approach to the material in this course is historical, cross-cultural, and above all philosophical. Approved for LAS Global Awareness requirement.

PHIL 3350 - On the Nature of Things (Meta-Physics)

3 Credits
Traditional and contemporary theories of the basic categories used to describe reality and the human relationship to it, including concepts such as substance, identity, space and time, causality, determination, and systematic ontology. Prer., three hours of philosophy.

PHIL 3390 - Philosophy of Psychology

3 Credits
Course covers classical and contemporary discussions of philosophical issues raised by psychological theory. Issues include introspectionism (James), psychoanalytical models of the self (Freud, Horney), learning theory (Piaget), depth psychology (Jung), behaviorism (Skinner), feminist psychology (Chodorow, Gilligan), cognitive science, psychology and language (Lacan), and existential psychology (Merleau- Ponty).

PHIL 3400 - Holocaust

3 Credits
Detailed analysis of the holocaust and its educational importance. Main focus is the Jewish holocaust with attendant eugenic policies, with possible attention to other examples of holocaust. Examination of philosophies that support organized social violence and principles that achieve a humane philosophy of life.

Approved for LAS Global Awareness requirement.

PHIL 3420 - Symbolic Logic I

3 Credits
An exposition of the ideas and techniques of modern symbolic logic including several formal systems to distinguish between valid and invalid arguments and discussion of the foundations of arithmetic and set theory. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a logic course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test.

PHIL 3450 - Mathematical Logic

3 Credits
Introduces students to mathematical logic. Topics will include first-order quantification theory; formal number theory; axiomatic set theory; computability. Incompleteness, undecidability, and partial recursion will be discussed. Prer., MATH 1040 or MATH 2150 or PHIL 3440.

PHIL 3480 - Philosophies of India

3 Credits
Historical development and a critical analysis of the major philosophical texts and school of India, including the Vedas, Upanishads, and Bhagavad-Gita;the 6 orthodox schools; Jainism; Buddhism; and modern Indian thinkers including Gandhi and Radhakrishnan. Approved for LAS Global Awareness requirement.

PHIL 3490 - Philosophies of China

3 Credits
Historical development and critical analysis of the major philosophical schools and texts of China, including Confucianism, Taoism, Ch'an (Zen) Buddhism, Neo-Confucianism and modern Chinese thought. Approved for LAS Global Awareness requirement.

PHIL 3500 - Buddhist Philosophy

3 Credits
General survey of key Buddhist philosophical concepts of both the Theravada and Mahayana traditions, such as dukha, nirvana, anatman and voidness. The relationship between Pali Sutta's and the Theravada tradition will be discussed as well as the relationship between Mahayana and the Prajna Paramita Suttas. Key schools of Mahayana, such as Cittamattra and Madhyamaka will also be introduced. Approved for LAS Global Awareness requirement.

PHIL 3510 - Pre-Socratic Philosophy

3 Credits
Systematic examination of the development of Western philosophy from its inception among the pre-Socratics and their impact on Plato and Aristotle. Prer., One philosophy course.

PHIL 3520 - Plato

3 Credits
Provides an in-depth analysis of Plato's texts. Besides hermeneutic issues as to how one ought to read the dialogues; ethical, cosmological, metaphysical and political questions emerging from Plato's works will be addressed. Prer., One previous Philosophy course.

PHIL 3530 - Hellenistic Philosophy

3 Credits
History of Western Philosophy during the Hellenistic period (c. 310 B.C.E. To 450 C.E.). Covers Stoicism, Epicureanism, Skepticism, Atomism, neo-Platonism and the introduction of Jewish and Christian thought into philosophy via Philo of Alexandria and St. Augustine, respectively.

PHIL 3540 - Medieval and Renaissance Philosophy

3 Credits
History of Western Philosophy from the Medieval period to the beginning of modern times. Course covers Christian, Jewish and Islamic philosophers, including Augustine, Anselm, Avicenna, Averroes, Maimonides, Aquinas, Ockham, Machiavelli, and F. Bacon.

PHIL 3550 - Aristotle

3 Credits
Offers a careful reading of several Aristotelian works ranging from biology to ontology and ethics, with an eye towards how these may fit together as well as how Aristotle is situated in relation to Plato, the Presocratics, and Hellenistic thinkers. Prer., One previous course in Philosophy.

PHIL 3560 - Modern Classical Philosophy

3 Credits
Systematic examination of some fundamental philosophic problems treated by Rationalists and Empiricists in the 17th and 18th centuries (Hobbes, Descartes, Locke Spinoza, Leibniz, Berkeley, Hume), especially those concerning the foundations and limits of knowledge and attempts to overcome the limitations of these two traditions.

PHIL 3570 - Kant and the Enlightenment

3 Credits
Study of the Enlightenment (Age of Reason) with special emphasis on Kant's work and some of his precursors and critics.

PHIL 3580 - Hegel, Marx, and Nietzsche

3 Credits
Survey of some of the major thinkers in the 19th century such as Hegel, Marx, Kierkegaard, and Nietzsche.

PHIL 3600 - Philosophy of Religion

3 Credits
Detailed analysis of religious experience from Eastern and Western traditions, including mysticism, mythology, cosmology, knowledge of God and the divine attributes, salvation, immortality, and the influence of secularism. Approved for Compass Curriculum requirement: Writing Intensive.

PHIL 3610 - Jewish Philosophy

3 Credits
This course will present a survey of thinkers who have reflected philosophically on the tenets and scripture of Judaism. The course begins with in-depth analysis of the Hebrew Bible (Old Testament) and then moves through major figures such as Maimonides and Buber.

PHIL 3620 - Christian Thought

3 Credits
This course will present a survey of thinkers who have reflected philosophically and theologically on the tenets of the Christian faith. The course begins with the New Testament and moves through major figures such as Augustine, Aquinas, and Kierkegaard.

PHIL 3630 - Gender and Race in Biblical Literature

3 Credits
Course examines the presence(s), result(s),

and interpretation(s) of gender and race in biblical literature and the issues and problems those categories present to the reader. Meets with WEST 3630.

PHIL 3690 - Islamic Philosophy

3 Credits
An exploration of the development of Arab Islamic philosophy, history and culture through the Ottoman and Colonial periods into the construction of the modern Arab states and the emergence of contemporary Islamic political philosophy. Topics include nationalism, globalization, democracy, human rights and women.

PHIL 3700 - Philosophy of Art

3 Credits
Investigation of concepts such as the aesthetic object, the artistic experience, and creative expression and a critique of certain theories designed to solve problems of aesthetic evaluation. Meets with PHIL 5700.

PHIL 3720 - Philosophy of Film

3 Credits
Relation between philosophical issues and film to show how philosophical concepts are embodied in film and filmmaking. Meets with PHIL 5720.

PHIL 3730 - Philosophy and Literature

3 Credits
A study of the intersection of philosophy and literature, the benefits each derives from the other and of philosophical themes expressed in literary works and philosophical problems raised by literature.

PHIL 4040 - Phenomenology

3 Credits
Critical analysis of early 20th century philosophical movements such as phenomenology, structuralism, and hermeneutics, emphasizing their origins and the philosophical and non-philosophical issues that gave rise to them. Prer., Previous course in philosophy. Meets with PHIL 5040.

PHIL 4060 - Mid 20th Century European Philosophy

3 Credits
An intensive examination of the major European philosophical movements of the mid 20th century, including phenomenology, existentialism, linguistics and post-structuralism, emphasizing their relation to key philosophical and non-philosophical issues of the period. Prer., Previous philosophy course. Meets with PHIL 5060.

PHIL 4070 - Existentialism

3 Credits
Main themes of existentialist thought from its origins in Kierkegaard and Nietzsche to such 20th century figures as Jaspers, Heidegger, Sartre and Camus. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Meets with PHIL 5070.

PHIL 4080 - Postmodernism

3 Credits
An intensive examination of major figures, such as Irigaray, Deleuze, Baudrillard, Habermas, Foucault and Derrida, and of major movements such as critical theory. Prer., One philosophy course. Meets with PHIL 5080.

PHIL 4100 - American Pragmatism

3 Credits
Analysis and appreciation of America's most important contribution to intellectual life, pragmatism. Also discussed are two of pragmatism's predecessors, transcendentalism and naturalism. Meets with PHIL 5100.

PHIL 4140 - Philosophy of Nature: Sustainability and Globalization

3 Credits
The philosophical significance of ecology for establishing an environmental ethic. Application of environmental ethics to such issues as responsibilities to future generations, the problem of the moral standing of nonhuman species and wilderness, and the deficiencies of cost-benefit analysis as a basis for decision making. Approved for Compass Curriculum requirement: Sustainability. Prer., Previous course in philosophy. Meets with PHIL 5140.

PHIL 4160 - Business and Management Ethics

3 Credits
Designed to teach students to appreciate the ethical dimensions of the decision-making process in which most business managers are engaged during their careers. Meets with PHIL 5160.

PHIL 4200 - Consciousness

3 Credits
Consciousness has re-emerged as a fundamental topic in psychology, neuroscience, cognitive science, and philosophy. This course introduces students to some of the recent neuroscientific studies of consciousness and surveys some of the philosophical problems posed by consciousness. Meets with PHIL 5200.

PHIL 4250 - Topics in Social Theory

3 Credits
In-depth examination of a particular trend in contemporary social theory such as critical theory, the Frankfurt school, Marxism and post-Marxism, economic democracy, deep ecology, postmodernism and deconstruction. Prer., Three hours of philosophy. Meets with PHIL 5250.

PHIL 4260 - Philosophy of Law

3 Credits
A consideration of various views of the nature of law, its role in society and its relation to other disciplines. Examination of the philosophic commitments that underlie and affect legal convention and procedures. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Meets with PHIL 5260.

PHIL 4350 - Analytic Philosophy

3 Credits
Analytic Philosophy is a term used to describe both a particular method and a style of philosophizing. This course examines that method and that style and shows the promise the former once held for settling traditional philosophical issues and problems and the continuing influence of the latter. Meets with PHIL 5350.

PHIL 4400 - Philosophy of Science

3 Credits
A close examination of issues in the history, philosophy and sociology of science. Attention will be given to contemporary debates on such topics as the methodology of science, the growth of scientific knowledge, the logic of scientific discovery and the value-neutrality of science. Approved for LAS Social Science area requirement. Meets with PHIL 5400.

PHIL 4410 - Philosophy of Biology

3 Credits
A broad examination of pertinent issues in biology, from the theory of evolution to contemporary debates concerning DNA and the human genome project.

PHIL 4420 - Symbolic Logic II

3 Credits
An intermediate course in symbolic logic that introduces students to quantified predicate logic with identity, intensional logic, second-order logic, and many-valued logic. Certain meta-logical results such as the Loewenheim-Skolem theorem, completeness, soundness, computability, Church's thesis, and incompleteness are discussed. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a logic course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., PHIL 3440 or consent of instructor. Meets with PHIL 5420.

PHIL 4440 - Decision and Game Theory

3 Credits
Introduces students to decision theory and game theory. Topics will include rationality; strategic reasoning; Nash equilibria; strategic games; symmetric and non-symmetric games; coalitions and cooperation; zero and non-zero-sum games; and, prisoner's dilemmas. Prer., PHIL 3440 or MATH 1040. Meets with PHIL 5441.

PHIL 4460 - Theories of Human Nature.

3 Credits
An examination of the meaning of human nature from various perspectives, including Greek thinking, religious explanations, naturalist, existentialist and pragmatist theories.

PHIL 4490 - Philosophy of Language

3 Credits
A historical survey of developments in philosophy of language. Topics covered include sense and reference, signifier and signified, rule-following, ordinary language philosophy, deconstruction, and casual theories of reference. Authors covered include Frege Husserl, De Saussure, Wittgenstein, Austin, Derrida, and others. Meets with PHIL 5490.

PHIL 4550 - Feminism, Sexuality, and Culture

3 Credits
An examination of selected philosophical issues in the context of recent developments in feminist thought. Course will consider the question of whether traditional patterns of philosophical thought express gender bias, and if so, why. Approved for LAS Cultural Diversity requirement. Prer., one course in PHIL, WEST, WMST, Meets with WEST 4550.

PHIL 4800 - Internship in Philosophy

1-3 Credits
This course is available to students interested in applied philosophy. Students will intern for organizations outside and inside the university community and reflect philosophically on their experience. Instructor approval required.

PHIL 4910 - Systematic Philosophy

3 Credits
A thorough study of a single philosophical problem, system, or single philosopher. Meets with PHIL 5910.

PHIL 4930 - Advanced Topics in Philosophy

3 Credits
Detailed examination of a special topic taken from the history of philosophy which is not covered by the regular departmental course offerings (variable content). Prer., Philosophy majors or consent of instructor. Two courses in Philosophy. Meets with PHIL 5930 and WMST 4900.

PHIL 4950 - Senior Project

3 Credits
A research project directed under the supervision of a full time departmental faculty member. The topic of the research is chosen by the student in consultation with the project advisor. Required of all philosophy majors. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Summit. Open to juniors/seniors only.

PHIL 5040 - Phenomenology

3 Credits
Critical analysis of early 20th century philosophical movements such as phenomenology, structuralism, and hermeneutics, emphasizing their origins and the philosophical and non-philosophical issues that gave rise to them. Prer., previous course in philosophy. Meets with PHIL 4040.

PHIL 5060 - Mid 20th Century European Philosophy

3 Credits
An intensive examination of the major European philosophical movements of the mid 20th century, including phenomenology, existentialism, linguistics and post-structuralism, emphasizing their relation to key philosophical and non-philosophical issues of the period. Prer., previous philosophy course. Meets with PHIL 4060.

PHIL 5070 - Existentialism

3 Credits
Main themes of existentialist thought from its origins in Kierkegaard and Nietzsche to such 20th century figures as Jaspers, Heidegger, Sartre and Camus. Meets with PHIL 4070.

PHIL 5080 - Postmodernism

3 Credits
An intensive examination of major figures, such as Irigaray, Deleuze, Baudrillard, Habermas, Foucault and Derrida, and of major movements such as critical theory. Meets with PHIL 4080.

PHIL 5100 - American Pragmatism

3 Credits
Analysis and appreciation of America's most important contribution to intellectual life, pragmatism. Also discussed are two of pragmatism's predecessors, transcendentalism and naturalism. Meets with PHIL 4100.

PHIL 5130 - Ethics of Life and Health

3 Credits
Ethical dimensions of the patient-physician relationship and the impact of medical technology. Topics include informed consent and experimentation with human subjects, technological manipulation of medical resources, genetic screening in the workplace, and genetic engineering. Meets with PHIL 3130.

PHIL 5140 - Philosophy of Nature: Sustainability and Globalization.

3 Credits
The philosophical significance of ecology for establishing an environmental ethic. Application of environmental ethics to such issues as responsibilities to future generations, the problem of the moral standing of non-human species and wilderness, and the deficiencies

of cost-benefit basis for decision making. Prer., Previous course in philosophy. Meets with PHIL 4140.

PHIL 5160 - Business and Management Ethics

3 Credits
Designed to teach students to appreciate the ethical discussions of the decision-making process in which most business managers are engaged during their careers. Meets with PHIL 4160.

PHIL 5180 - Theories of Knowledge

3 Credits
Consideration of major philosophers, both classical and contemporary, who have contributed to the analysis of the nature, limits and conditions of knowledge. Meets with PHIL 3170.

PHIL 5190 - Ethics

3 Credits
The problem of rational justification of ethical standards including a selected treatment of the history of ethics. Meets with PHIL 3190.

PHIL 5200 - Consciousness

3 Credits
Consciousness has re-emerged as a fundamental topic in psychology, neuroscience, cognitive science, and philosophy. This course introduces students to some of the recent neuroscientific studies of consciousness and surveys some of the philosophical problems posed by consciousness. Meets with PHIL 4200.

PHIL 5250 - Topics in Social Theory

3 Credits
In-depth examination of a particular trend in contemporary social theory such as critical theory, the Frankfurt school, Marxism and post-Marxism, economic democracy, deep ecology, post-modernism and deconstruction. Variable content. Meets with PHIL 4250.

PHIL 5260 - Philosophy of Law

3 Credits
Consideration of various views of the nature of law, its role in society and its relation to other disciplines. Examination of the philosophic commitments that underlie and affect legal convention and procedures. Meets with Phil 4260.

PHIL 5300 - Philosophy of the Mind

3 Credits
Consideration of the central problems in the philosophy of mind, including the mind-body problem; the knowledge of other minds; free will and determinism; as well as discussion of concepts such as action, intention, motive, desire, memory, etc. Meets with PHIL 3000.

PHIL 5350 - Analytic Philosophy

3 Credits
'Analytic Philosophy' is a term used to describe both a particular method and a style of philosophizing. This course examines that method and that style and shows the promise the former once held for settling traditional philosophical issues and problems and the continuing influence of the latter. Meets with PHIL 4350.

PHIL 5400 - Philosophy of Science

3 Credits
A close examination of issues in the history, philosophy, and sociology of science. Attention will be given to contemporary debates on such topics as the methodology of science, the growth of scientific knowledge, the logic of scientific discovery and the value-neutrality of science. Meets with PHIL 4400.

PHIL 5420 - Symbolic Logic II

3 Credits
An intermediate course in symbolic logic that introduces students to quantified predicate logic with identity, intensional logic, second-order logic, and many-valued logic. Certain meta-logical results such as the Loewenheim-Skolem theorem, completeness, soundness, computability, Church's thesis, and incompleteness are discussed. Meets with PHIL 4420.

PHIL 5441 - Decision and Game Theory

3 Credits
Introduces students to decision theory and game theory. Topics will include rationality; strategic reasoning; Nash equilibria; strategic games; symmetric and non-symmetric games; coalitions and cooperation; zero and non-zero-sum games; and, prisoner's dilemmas. Prer., PHIL 3440 or MATH 1040. Meets with PHIL 4440.

PHIL 5460 - Theories of Human Nature

3 Credits
An examination of the meaning of human nature from various perspectives including Greek thinking, religious explanations, naturalist, existentialist and pragmatist theories.

PHIL 5490 - Philosophy of Language

3 Credits
A historical survey of developments in philosophy of language. Topics covered include sense and reference,, signifier and signified, rule-following, ordinary language philosophy, deconstruction, and casual theories of reference. Authors covered include Frege Husserl, De Saussure, Wittgenstein, Austin, Derrida, and others. Meets with PHIL 4490.

PHIL 5720 - Philosophy of Film

3 Credits
Relation between philosophical issues and film to, show how philosophical concepts are embodied in film and filmmaking. Prer., a B.A. in any LAS field. Meets with PHIL 3720.

PHIL 5910 - Systematic Philosophy

3 Credits
A thorough study of a single philosophical problem, system or single philosopher. Variable content. Meets with PHIL 4910.

PHIL 5930 - Advanced Topics in Philosophy

1-3 Credits
Detailed examination of a special topic taken from the history of philosophy which is not covered by the regular departmental course offerings. Variable content. Prer., Consent of instructor. Meets with PHIL 4930.

PHIL 9400 - Independent Study in Philosophy: Undergraduate

1-4 Credits
Prer., Prior consent of faculty required.

PHIL 9500 - Independent Study in Philosophy - Graduate

1-3 Credits
Intended to give 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. Subjects are chosen and arrangements are made to suit the needs of each student. Prer., Consent of instructor.

PHYS - Physics - Grad

PHYS 5030 - Mathematical Methods in Physics

3 Credits
Survey of classical mathematical physics. Includes complex variable theory, boundary value problems, Green's functions, matrices, and vector spaces, and the use of numerical methods for solving physical problems. Prer., PES 3250 or equivalent.

PHYS 5150 - Solid State Laboratory

2 Credits
Advanced lab on the measurement of fundamental properties of solids. Includes introduction to vacuum and thin film technologies. One lecture and one lab session per week. Meets with PES 4150.

PHYS 5160 - Thin Films Laboratory

1 Credit
Introduction to thin film deposition and characterization. Facilities include evaporation, sputtering, Auger electron spectroscopy, ellipsometry and scanning electron microscopy. Coreq., PHYS 5490

PHYS 5200 - Computational Physics

3 Credits
An introduction to methods of solving physics problems via computers. Topics include molecular dynamics, calculation of electromagnetic fields, electronic states, Monte Carlo methods applied to statistical mechanics and quantum systems. Prer., CS 1050 or equivalent.

PHYS 5410 - Statistical Mechanics

3 Credits
An introduction to equilibrium statistical mechanics. Topics include classical or Boltzman statistics, Fermi-Dirac and Bose-Einstein statistics, partition functions and ensembles. Also included are applications to the liquid and solid states.

PHYS 5420 - Physics of Materials

3 Credits
An introduction to the physics of materials. Topics will include crystallography and defects, phase diagrams, phase transformations, diffusion, mechanical properties, and electrical properties.

PHYS 5460 - Intro to Solid State Physics I

3 Credits
Theory of solids including crystal structure, x-ray, neutron and electron diffraction, phonons, elastic and thermal properties of insulators, free electron Fermi gas, band structure (Kronig-Penney model, Bloch's theorem, tight-binging approximation, k*p model) and Fermi surface (Harrison construction, Landau levels). Prer., PES 3310 and PES 3320. Meets with PES 4460.

PHYS 5470 – Intro to Solid State Physics II

3 Credits
Theory of solids including superconductors, magnetic materials (diamagnets, paramagnets, ferromagnets, and antiferromagnets), dielectrics and ferroelectrics. Theory of electronic (plasmons, polaritons, and polarons) and optical (excitons) excitations, surfaces, interfaces, and nanostructures. Meets with PES 4470. Prer., PES 4460 or PHYS 5460.

PHYS 5480 - Surface and Interface Physics

3 Credits
An introduction to the solid state physics of surfaces and interfaces including structural, thermodynamic and electrical properties. Gas-surface interactions and characterization techniques will also be examined.

PHYS 5490 - Physics of Thin Films

3 Credits
A broad survey of the physics of thin films (emphasizing nucleation and growth) and common techniques for the production and characterization of thin films. Meets with PES 4490.

PHYS 5510 - Modern Optics

3 Credits
This is a mathematically rigorous course on optics for Physics major graduates. Prer., PES 3310, PES 3320, PES 4510; Graduate standing.

PHYS 5600 - Special and General Relativity

3 Credits
Investigates the theoretical and experimental basis for Einstein's Theory of Relativity. The concept of four dimensional space-time is introduced through Special Relativity. The concept of curved space-time is presented using the mathematics of tensors. Open to graduate students only. Prer., PES 2130. Meets with PES 4600.

PHYS 5720 - Stellar Structure and Evolution

3 Credits
Basic stellar astronomy and astrophysics. H-R diagrams. Principles of stellar structure including energy generation and energy transport. Stellar formation and evolution to compact objects.

PHYS 5900 - Special Topics for Teachers

0.5-4 Credits
Various topics in physics, astronomy and energy science of interest to K-12 teachers. Consult your advisor to see if this course applies to your academic program.

PHYS 5950 - Special Topics

1-6 Credits
Various topics in physics, biophysics, energy science, astronomy, and related fields.

PHYS 5960 - Special Topics

1-6 Credits
Various topics such as, but not limited to: spin flop transition in anti-ferromagnetic/ferromagnetic structures; effective of spin flop on domain structures and other current topics in physics.

PHYS 6210 - Theoretical Mechanics

3 Credits
Variational principles, Lagranges's equations, Hamilton's equations, motion of a rigid body, relativistic mechanics, transformation theory, continuum mechanics, small oscillations, Hamilton-Jacobi theory.

PHYS 6250 - Intro to Quantum Mechanics

3 Credits
Quantum phenomena, relation to classical physics, Schroedinger and Heisenberg picture, application to problems, approximation techniques; angular momentum; scattering; theory; Pauli spin theory; radiation theory; relativistic wave equations with simple applications; introduction to field theory and second quantization. Prer., PES 4260.

PHYS 6260 - Quantum Mechanics II

3 Credits
Quantum phenomena, relation to classical physics, Schroedinger and Heisenberg picture, application to problems, approximation techniques; angular momentum; scattering theory; Pauli spin theory; radiation theory; relativistic wave equations with simple applications; introduction to field theory and second quantization.

PHYS 6310 - Electromagnetic Theory I

3 Credits
Applications of Maxwell's equations to electrostatic and magnetostatic properties of matter, conservation laws. Prer., PES 3310, PES 3320 or equivalent.

PHYS 6320 - Electromagnetic Theory II

3 Credits
Electromagnetic fields; applications of Maxwell's equations to electromagnetic wave propagation, and fundamental properties of light; relativistic electrodynamics, radiation theory. Prer., PHYS 331-332, or equivalent.

PHYS 6900 - Theory of the Solid State I

3 Credits
Stresses application to the solid state of physical concepts basic to much of modern physics, single- particle approximation and the energy-band description of electron states in solids, pseudopotential theory applied to ordered and disordered systems dynamical behavior of electrons in solids, lattice dynamics, Hartree-Fock and random-phase approximation in solids, many-body aspects of magnetism, and superconductivity. Prer., Graduate students only.

PHYS 6910 - Theory of the Solid State II

3 Credits
Stresses application to the solid state of physical concepts basic to much of modern physics, single-particle approximation and the energy-band description of electron states in solids, pseudopotential theory applied to ordered and disordered systems, dynamical behavior of electrons in solids, lattice dynamics, Hartree-Fock and random-phase approximation in solids, many body aspects of magnetism, and superconductivity. Prer., Graduate students only.

PHYS 6950 - Special Topics in Physics

3 Credits
Various topics such as group theory in quantum mechanics, collision, astrophysics, surface physics, magnetism.

PHYS 7000 - Masters Thesis

1-6 Credits
An approved problem in theoretical or experimental physics under the direction of faculty members. Intended to introduce the student to procedures in research and development work. Work of an original nature is expected.

PHYS 8000 - Dissertation

1-10 Credits
PhD dissertation. Prer., Enrolled in Physics PhD-Applied Sciences.

PHYS 9500 - Independent Study: Graduate

1-6 Credits
Independent Study: Graduate

PHYS 9990 - Candidate for Degree

0 Credits
Candidate for Degree

PORT - Writing Portfolio

PORT 3000 - Writing Portfolio Assessment

0 Credits
All UCCS students must submit a Writing Portfolio at least two semesters prior to graduating. Students who opt not to submit a portfolio, or who do not pass the assessment, must take ENGL 3010 or ENGL 3080. Portfolios for a section must be submitted to the course Blackboard site between the 1st and 10th of that section's month. Prer., ENGL 1410 or ENGL 2080 or ENGL 2090 or INOV 2100.

PSC - Political Science

PSC 1010 - Introduction to Global Politics

3 Credits
Introductory analysis of the contemporary international system and major state and non-state actors in world politics. Considerable attention is given to internal political features and to the problems/perceptions of the various actors that shape their external behavior. Approved for LAS Social Science area and Global Awareness requirements.

PSC 1100 - The American Political System

3 Credits
A general introduction to the American political system with emphasis on the inter-relations among the various levels and branches of government, formal and informal political institutions, processes, and behavior. Required of all majors. Not open to those who have had other beginning courses in American government. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS1.

PSC 2070 - Intro to International Relations

3 Credits
In order to better understand the relationship among international actors, this introductory course covers theories and concepts essential to help us comprehend the world in which we live. We analyze ideas and learn to apply the theories to further our knowledge of war, human behavior, economics, international organizations, and law, to name only a few. Approved for LAS Global Awareness requirement.

PSC 2080 - Intro to Comparative Politics

3 Credits
Comparative politics, unlike any other subfield in political science, is both a subject of study and a method of study. The course introduces students to both. As method of study, comparative politics focuses, not surprisingly, on comparison. As a subject of study, comparative politics helps students understand and explain political phenomena that take place within a state, society, country, or political system. Approved for Social Science area and Global Awareness requirements.

PSC 2090 - Political Conflict

3 Credits
Conflict is part of political, social, and economic life. Human conflict today is different from the past in terms of its nature, scope, and scale. Some of the most important characteristics of political conflict are covered, primarily from an international relations perspective. Uses both historical and theoretical frameworks to help interpret conflict. Approved for LAS Global Awareness requirement.

PSC 2100 - Politics and Policy in State and Local Communities

3 Credits
Focuses on regional, state, and local government where politics is face to face and where political decisions regularly affect our daily lives. The political systems that teach children, issue building permits, collect garbage, determine welfare eligibility, operate parks, issue drivers licenses, and enforce traffic rules. Approved for LAS Social Science area requirement.

PSC 2450 - American Political Thought

3 Credits
History and development of American political theories and ideas from colonial period to present.

PSC 3010 - Women in Politics

3 Credits
An examination of the role of women in American politics. Topics will include an historical perspective of women's political activity, the political interests and group activities of women, the legal status of women, political attitudes of and toward women, and women's political behavior. Meets with WEST 3010.

PSC 3030 - Political Parties

3 Credits
Party politics in the United States. Nature, structure, organization, and functions of political parties. Analysis of political behavior.

PSC 3050 - Race and Ethnicity in American Politics

3 Credits
An examination of the role of U.S. ethnic minority groups in American politics from the perspectives of the groups themselves. Topics will include historical and contemporary perspectives on the political activities, interests and legal status of U.S. ethnic minorities; the relationship of power, race/ethnicity and class in determining the effects of the political system on these groups; and the impact of these groups on the political system. Meets with WEST 3050.

PSC 3060 - Political Ideas in Film

3 Credits
Examines how the ideas of political theorists such as Xenophon, Aristotle, Machiavelli, and Hobbes are reflected in film. Topics covered include tyranny, contractarianism, bureaucracy, and democracy. The class pairs such concepts with films illustrating them.

PSC 3070 - Comparative Politics and Film

3 Credits
Analyzes the subfield of Political Science known as comparative politics. Also, teaches students to be critical observers about the way in which films can be used and studied for their political content.

PSC 3110 - Emerging Nations

3 Credits
Analysis of third world developmental problems such as lack of economic growth, corruption, military coups, arms sales, international debts, and the role of nature. Approaches to theory are discussed.

PSC 3240 - War and Peace

3 Credits
This course examines both traditional and contemporary issues of security study, a major field of international relations. Topics of this course include major wars among great powers, civil wars, counterinsurgency warfare, and alternatives to the use of force.

PSC 3300 - The Bureaucrats

3 Credits
National, state, and local public service career systems in the United States and selected foreign countries. How the bureaucracy makes public policy. Approved for LAS Social Science area requirement.

PSC 3420 - Political Theory

3 Credits
Main currents of political thought from ancient times to the present as seen in the writings of political theorists from Plato and Aristotle through Machiavelli, Locke, Hobbes, Rousseau, Mill, and Nietzsche. Approved for Compass Curriculum requirement: Sustainability.

PSC 3430 - Law and Literature

3 Credits
Explores the function of law in major works of literature and how those works illuminate the nature of law. Various texts from Sophocles, Shakespeare, Melville, Dostoevsky and others will be used to analyze the relationship between law and the broader political order.

PSC 3450 - Modern American Political Thought

3 Credits
An examination, through careful analysis of primary sources, of the four main movements in political thought that affected America from 1900 to the present: Progressivism, Constitutional Conservatism, Modern Liberalism, and Modern Conservatism.

PSC 3480 - Legislative Internship

3-6 Credits
The department places students in legislative internships, usually with state legislators, but Washington internships are possible. Student normally spends 15-20 hours per week working with a legislator or legislating office in the Capitol of Denver. Credit dependent upon hours worked. Prer., 2.8 cum GPA; 45 hrs; consent of instructor.

PSC 3500 - Introduction to Political Inquiry

3 Credits
An introduction to the basic methods and tools of research in political science. Topics will include discussions of the resources available for political research, the study of politics as a science, common techniques of political analysis, the development of research designs, research report writing, and the ethics of political research. The course will be largely experiential, directly involving students in research experiences. Approved for LAS Quantitative and Qualitative Reasoning area requirements.

PSC 3980 - Internship: Public Administration

3-6 Credits
The department works with students placed in a public agency (governmental or non-profit agencies). Students spend 12 hours weekly working for the host organization in return for 3 credit hours. Prer., Open to upper division students of academic record and with consent of the instructor.

PSC 4020 - The American Congress

3 Credits
A survey of the development, practice, and theory of the contemporary Congress. Particular attention is paid to the origins of lawmaking and institutional change. Approved for Compass Curriculum requirement: Summit.

PSC 4040 - Political Interest Groups

3 Credits
Nature, structure, organization, and functions of pressure groups. Analysis of pressure politics.

PSC 4050 - Public Opinion & Political Behavior

3 Credits
Theories of public opinion and propaganda; the formation, management, and measurement of political attitudes; behavior of people and groups in politics, especially American.

PSC 4060 - State Political Systems

3 Credits
National, state, and interstate relations; constitutional development; legislative, executive, and judicial processes and problems; administrative organization and reorganization; state finances; major state services; future of the states. Special attention is given to the government of Colorado.

PSC 4070 - Urban Politics

3 Credits
Political and social influence in urban areas; selection of urban leadership; relationship of the political system to governmental and social institutions. Meets with P AD 5626.

PSC 4080 - US Electoral Process

3 Credits
Examines campaigns and voting, as well as the roles of parties interest groups and the media in the electoral process in the United States, with special attention to the legal and institutional context in which US elections take place. Prer., PSC 1100.

PSC 4130 - Latin-American Politics and Development

3 Credits
Governments and politics of selected countries of Latin America. Constitutions and governments in theory and practice. Political parties, movements, and conflicts. The relationships between political problems and physical and social environments.

PSC 4140 - European Politics

3 Credits
Domestic, regional, and international political issues in contemporary Europe. Political institutions, public policy, and political participation in several European states. European enlargement and external relations.

PSC 4150 - United States Space Policy

3 Credits
Examination of historical origins, policy evolution, and future prospects of the US civilian space program. Meets with PSC 5150.

PSC 4170 - Mexican Political Development

3 Credits
The course analyzes Mexican government and politics. Historical overview of Mexican politics; key events and actors. Describes and explicates political behavior in Mexico (voting, protests, interest groups, social movements), institutions (legislative, executive, and judicial branches), and policies (U.S.-Mexico relations, politics of urbanized industrialization, business, agrarian, oil). Approved for Global Awareness Requirement. Prer., Junior or Senior standing.

PSC 4180 - Gender in International Politics

3 Credits
Looks at issues of gender and sexuality in an international context. Covers war and militarism and their effect on women, the international division of labor, the effects of religious fundamentalism, international trafficking in women and sexual violence issues. Meets with WEST 4180.

PSC 4190 - Politics of the Developing Areas

3 Credits
Introduction to Politics of the Developing Areas (Africa, Asia, Latin America). Major themes and actors analyzed. Approved for LAS social science area and Global Awareness requirements.

PSC 4210 - International Politics

3 Credits
The system of national states, concepts of national interest, goals of foreign policies, conduct of diplomacy, the role of non-state actors, and the bearing of these elements on the problem of peace. Great powers and regions of the earth in international politics today, their roles in international tensions, and the development of international relations theory. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirement: Summit. Prer., PSC 1010. Meets with PSC 5210.

PSC 4220 - Comparative Politics

3 Credits
Advanced course examining and comparing the political process in a broad range of political, economic, and socio-cultural environments. Case studies and cross- national analysis of states and non-state actors are utilized to explain and predict political phenomena across a range of states and societies. Prer., PSC 1010.

PSC 4230 - The United States in World Politics

3 Credits
The foundations, assumptions, objectives, and methods of U.S. Foreign policy. The domestic and external problems of adapting U.S. Policy to the changing world environment. Approved for Compass Curriculum requirement: Writing Intensive.

PSC 4240 - Russian Politics

3 Credits
Politics in the Russian Federation, its impact on international politics, and its relations to domestic developments.

PSC 4250 - International Law

3 Credits
A survey of public international law with special emphasis on source of international law and instruments for adjudication as well as on international treaties and the rules of land and sea warfare.

PSC 4260 - International Organization

3 Credits
A comparative analysis of governmental and non-governmental international organizations. Special attention is paid to the United Nations and certain regional organizations such as the European community, NATO and the organization of American states.

PSC 4270 - Latin America in World Politics

3 Credits
Basic elements in Latin American international relations. United States-Latin American relations and policies. Foreign policy formulation in major Latin American republics. Formerly P SC 4770. Not open to those who have taken P SC 4770.

PSC 4280 - International Political Economy

3 Credits
Overview of the world political economy, especially in the post-WWII period. The central goal of the course is to provide information and develop analytical tools necessary for students to grasp the political issues inherent in international economic relations. Meets with ECON 3280.

PSC 4290 - International Environmental Politics

3 Credits
Study of the ways in which the international community reacts to environmental problems of a transboundary nature. Examination of theoretical frameworks used, policies developed, actors involved and analysis of a number of important cases and issues in international environmental politics. Approved for Compass Curriculum requirement: Sustainability. Meets with PSC 5290.

PSC 4300 - East Asian Politics

3 Credits
This course aims at enhancing students' understanding of history and sources for political and economic developments and decay in East Asia. Students should gain a better understanding of the political and economic successes and challenges facing East Asian nations today.

PSC 4320 - Public Administration

3 Credits
Role of administration in government; trends in American public administration; problems in organization; techniques of management.

PSC 4340 - National Security Organization and Policy Making

3 Credits
Analysis of the governmental structure and the and the policy-making processes for American national security planning, decision making, and action.

PSC 4350 - Environmental Policies and Administration

3 Credits
Resources in the American economy; consideration of constitutional, political, and geographic factors in the development of resources policy; organization, procedures, and programs for administration and development of natural resources.

PSC 4390 - The Presidency

3 Credits
An examination of the historical, functional, constitutional, and political aspects of the presidency. An analytical comparison of the presidency with other executive systems.

PSC 4400 - Government and Society

3 Credits
Examines the normative and positive theoretical underpinnings of government processes and policies in the United States. Emphasis is placed on the formal theoretical analysis of institutions and policies. Prer., PSC 1100.

PSC 4460 - Administrative Law

3 Credits
General nature of administrative law, types of administrative action and enforcement, analysis of rule-making and adjudication, and administrative due process.

PSC 4470 - Constitutional Law

3 Credits
Role of the Supreme Court in development of principles of constitutional law, beginning with the concept of judicial review. Federalism, jurisdiction of the federal courts, separation of powers, the taxing power, the commerce power, the doctrine of implied powers and other principles and doctrines which are relevant to contemporary interpretation of the constitution. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirements: Summit; Writing Intensive.

PSC 4480 - Civil Rights and Liberties

3 Credits
Nature and scope of American constitutional principles as developed by the U.S. Supreme court, with emphasis on the war power, power of the president, citizenship, the Bill of Rights, and the Civil War amendments. Approved for Compass Curriculum requirements: inclusiveness; Writing Intensive.

PSC 4490 - The Judicial System

3 Credits
Examination of the principal actors in the legal system police, lawyers, judges, citizens and the roles they play in the political process.

PSC 4500 - Senior Research Seminar

3 Credits
A course designed to directly involve Senior students in political science in major research projects. The emphasis of the course will be on the development by the students of research topics and designs which fit their individual interests. Major papers will be required of all students. Research reports will be presented orally and critiqued in class. Required of all majors.

PSC 4510 - Defendant's Constitutional Rights

3 Credits
Nature and scope of American constitutional principles as developed by the United States Supreme Court, with emphasis on habeas corpus, search and seizure, grand jury, double jeopardy, self-incrimination, due process of law, speedy and public trial, right to counsel, trial by jury, bail, and cruel and unusual punishment.

PSC 4520 - Model Organization of American States (MOAS)

3 Credits
The course assists and supervises students in the preparation and execution of the Model Organization of American States for Universities (MOAS) in Washington, D.C. Students learn about the role, structure and operation of the MOAS by representing a member-state in the Inter-American system, students gain broad understanding of issues in International Politics and the practice of diplomacy and international organizations. Prer., Application and consent of instructor.

PSC 4530 - Model United Nations

3 Credits
Course assists and supervises students in preparation and execution of the Model United Nations (MUN) college conference. The course catapults students into the world of diplomacy and negotiation. Students learn about the role, structure and operation of the United Nations. Prer., instructor consent.

PSC 4540 - Land Use Law

3 Credits
A legal studies public law course involving the rights and obligations of land owners and the

various levels of government. Issues range from environmental protection, zoning, to land development and "Taking" property without compensation. Jr/Sr level preferred. Prer., PSC 4460 or consent of instructor.

PSC 4550 - Public School Law

3 Credits
A legal studies course involving a comprehensive examination of American public school law with reference to Colorado public school law. As a public law course, it involves Constitutional issues ranging from civil liberties of speech and religion, to civil rights such as special needs children. Jr/Sr level preferred. Prer., PSC 4460 or consent of instructor.

PSC 4560 - The Arab-Israeli Conflict

3 Credits
Examines the historical, social, political, and economic conditions in the Middle East as they pertain to the Arab/Israeli conflict. An eclectic approach will be employed, from the cradle of civilization to the new international order with particular emphasis on the Palestinian/Israeli conflict. Prer., ENGL 1310 or ENGL 1410 or equivalent.

PSC 4570 - Middle Eastern Politics

3 Credits
Introduces the complex web of political, social, economic, and cultural life of Middle Eastern politics. Looks at historical developments of the region in order to better understand the current political diversity in the Middle East. The study of this region is important today as it faces new challenges with globalization, political identity crises, and foreign intervention. Approved for LAS Global Awareness requirement. Prer., PSC 1010. Sophomore standing or higher.

PSC 4580 - African Politics

3 Credits
The complex political, social, religious, and cultural environment of Africa, and the many themes and nation-states provide for a rich study of the region. Course examines the variations across the continent. Analyzes the scars left by the complex negotiations of post-independence Africa, and studies themes including ethnic conflict, nationalism, resources, economy, concepts of democracy, and nation-building. Approved for LAS Global Awareness requirement. Prer., PSC 1010 and sophomore standing.

PSC 4590 - Globalization

3 Credits
Globalization is studied as part of an exchange of technology, goods, and financial markets. The exchanges of goods, services, and ideas across national borders are pervasive. Communication systems help this process, but also help those who resist globalization to better articulate and organize their viewpoints. Approved for LAS Global Awareness requirement. Prer., Sophomore standing. Meets with ECON 3590.

PSC 4600 - The Politics of Terrorism

3 Credits
This course will acquaint the student with the concept of terrorism as a political and psychological tool. Examines the culture usually associated with terrorist actions and what sparks such cultural beliefs. The course concludes with a prognosis for the future of what our world may look like if this political behavior continues. Prer., ENGL 1310.

PSC 4980 - Spec Problems in Political Science

1-3 Credits
A study of special problems relevant to political science taught by a highly qualified person in the particular problem area. Each semester that the course is offered, a different problem of high impact is studied.

PSC 5150 - United States Space Policy

3 Credits
Examination of historical origins, policy evolution, and future prospects of the US civilian space program. Meets with PSC 4150.

PSC 5290 - International Environmental Politics

3 Credits
Study of the ways in which the international community reacts to environmental problems of a transboundary nature. Examination of theoretical frameworks used, policies developed, actors involved and analysis of a number of important cases and issues in international environmental politics. Meets with PSC 4290.

PSC 5980 - Special Topics

3 Credits
Each semester that the seminar is offered a different area of political science will be the focus of intensive study and analysis.

PSC 9400 - Indep Study in Political Science

1-6 Credits
Intended to give 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. Subjects are chosen and arrangements are made to suit the needs of each student. Prer., Senior standing, 15 semester hours of political science and consent of instructor.

PSC 9480 - Prelaw Internship

3-6 Credits
Studies are undertaken concerning the practice of law or the administration of justice while the student has full or part-time employment with a law office, court, prosecutor, public defender, administrative hearing officer, or other individual or agency involved with the practice of law or the administration of justice. Prer., Consent of instructor; above average score on LSAT; and Senior status.

PSY - -Psychology

PSY 1000 - General Psychology

3 Credits
An introduction to the scientific study of behavior. Covers psychoanalytic and Jungian theory, physiological bases of behavior, behaviorism and humanistic/existential theories. Includes psychology discipline areas of clinical, experimental, developmental, abnormal, and social. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

PSY 1100 - The Profession of Psychology

1 Credit
Explores the profession of psychology, including careers, training needed to be successful, and professional ethics and responsibilities. Prer.or coreq., PSY 1000.

PSY 2100 - Intro to Psychological Statistics

4 Credits
Descriptive statistics including graphs, frequency distributions, measures of central tendency and variability. Inferential statistics such as correlation, T-tests, chi-square tests, and analysis of variance including two-factor designs and multiple comparison tests. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement

as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., PSY 1000, and MATH 1040 (or any math course for which MATH 1040 is a prerequisite) with a grade of C- or higher.

PSY 2110 - Introduction to Psychological Research and Measurement

4 Credits
An introduction to research methods used in psychology including experimental designs, quasi-experiments, correlation research and developmental methods. Methods of measuring psychological concepts, as well as the reliability and validity of those measurements are discussed. Students will write reports in APA format. Approved for Compass Curriculum requirement: Writing Intensive. Prer., PSY 2100 with a grade of C- or higher. Prer. or Coreq., ENGL 1410 with a grade of C- or higher.

PSY 2120 - Two-Factor Analysis of Variance

1 Credit
Covers the computation and interpretation of the two-factor analysis of variance and includes post-hoc analyses of the main and interaction effects. Prer., Introductory statistics class (minimum 3 credits).

PSY 2300 - Psychology of Adjustment

3 Credits
A survey of concepts bearing upon the processes of normal psychological adjustment, with emphasis upon using the concepts to understand common human problems in personal growth and relationships with others.

PSY 2450 - Social Psychology of Social Problems

3 Credits
An examination of social psychological aspects of a variety of social issues and problems in contemporary society. Issues may include television violence, race and I.Q., ethics of human experimentation, privacy, and pornography. Psychological theory and research relevant to these areas will be considered as will the processes involved in defining social behavior as a problem. Prer., PSY 1000.

PSY 3000 - Honors Seminar I

3 Credits
Exploration of contemporary issues in the science of psychology in conjunction with independent research project under the supervision of psychology faculty member. Open only to students formally accepted into the Department of Psychology honors program. Prer., PSY 2100, PSY 2110, junior status and consent of instructor required.

PSY 3030 - Undergraduate Practicum

1-3 Credits
Students participate in supervised service or research activities. Prer., Consent of instructor.

PSY 3060 - Psychology and Health

3 Credits
Introductory course on the application of psychological principles to the enhancement of physical health. Class utilizes an experiential format with students actually conducting their own health behavior change program. Prer., PSY 1000.

PSY 3100 - Statistical Models in Psychology

4 Credits
The role of statistical models in psychological research. Includes models of error and inference, selected analyses of variance and regression, and SPSS applications. Prer. or Coreq., PSY 2100 and PSY 2110.

PSY 3130 - Learning and Cognition

3 Credits
Survey of animal and human theories of learning and an introduction to contemporary theories of human cognition including memory and information processing. Prer., PSY 1000.

PSY 3140 - Cognitive Psychology

4 Credits
A survey of the core areas of human cognition: attention, reasoning, memory, problem solving, and decision making. History, theory, methodology, and research from related disciplines are discussed. Prer., PSY 2100 and PSY 2110.

PSY 3150 - Psychology of Motivation

3 Credits
Psychological and physiological factors in the motivation of behavior. Prer., PSY 1000.

PSY 3200 - Psychology of Learning

4 Credits
Course designed to provide an overview of learning. An emphasis will be placed on the theoretical formulation of the conditions that are necessary for learning and retention. Practical applications of learning principles will be considered. Prer., PSY 2100 and PSY 2110.

PSY 3210 - Human Sexuality

3 Credits
Covers in substantive form the interdisciplinary field of human sexuality. The topic is approached from the perspectives of physiology, endocrinology, behavior, sociology, ethnology, and anthropology. Prer., PSY 1000.

PSY 3240 - Theories of Personality

3 Credits
A review of various theories of personality including psychodynamic, behavioristic, humanistic, and existential approaches. Prer., PSY 1000.

PSY 3260 - Comparative Psychology

4 Credits
Behavior of animals from an evolutionary perspective. Principles of behavior in a variety of animal species, including humans. Prer., PSY 1000, or consent of instructor.

PSY 3270 - Introduction to Biopsychology

4 Credits
A broad survey course in the biological basis of behavior. Anatomy, physiology and chemistry of the nervous system (with special emphasis on the brain), endocrinology, and genetics are discussed as they apply to the study of behavior. Approved for LAS Natural Science area requirement. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., PSY 1000 or consent of instructor.

PSY 3280 - Abnormal Psychology

3 Credits
The origin, symptoms, classification, and treatment of abnormal behavior. Prer., PSY 1000.

PSY 3400 - Social Psychology

3 Credits
Survey of contemporary social psychological theory and research. Analysis of basic principles underlying human social behavior. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., PSY 1000.

PSY 3450 - Psychology of Diversity

3 Credits
A basic survey of myths and realities of multiculturalism and diversity using the theories and data from several subfields within psychology. Racial and ethnic diversity are emphasized, but diversity due to gender, age, sexual preference, and socioeconomic status will also be explored. Prer., PSY 1000.

PSY 3480 - Selected Topics in Psychology

1-4 Credits
Subject matter will change depending upon individual instructors and time of offering. Consult Course Search on the UCCS website or the MyUCCS Portal for the topic for any given semester. May be repeated for credit. Prer., PSY 1000.

PSY 3510 - Psychology of Aging

3 Credits
An overview of geropsychology covering such topics as the aging central nervous system, cognitive aging, cultural contexts of aging, personal transitions in later life, mental disorders, and geropsychology in the future. Prer., PSY 1000. Meets with GRNT 4630.

PSY 3550 - Psychology of Women

3 Credits
This course examines gender as it applies to human psychology, with a special focus on the experience of women and girls. A primary goal is to understand how psychologists study the complex relationships between gender and psychosocial functioning. Prer., PSY 1000. Meets with WEST 3450.

PSY 3560 - Women and Aging International: Diversity, Challenges, and Contributions

3 Credits
An introduction to the diversity in the aging experience for women throughout the major regions of the world. Current, historical, social, economic, legal, and health realities of older women are explored. Approved for LAS Global Awareness requirement. Meets with GRNT 3560 and WEST 3560.

PSY 3620 - Developmental Psychology

3 Credits
Survey of human development from conception to death emphasizing physical, cognitive, emotional, and psychosocial development. Prer., PSY 1000.

PSY 3630 - Sex Crimes Against Children

3 Credits
Child sexual abuse and commercial sexual exploitation of children are viewed from psychological, social, and criminal justice perspectives. Approved for LAS Social Sciences area requirement. Prer., PSY 1000.

PSY 3640 - Psychology of the Exceptional Child

3 Credits
This survey course studies children with learning and cognitive differences, behavioral and emotional disorders, and sensory and physical differences. Emphasis on etiology, diagnosis, treatment, and prevention of various disorders from different theoretical perspectives. Prer., PSY 1000.

PSY 3650 - Clinical Neuropsychology

3 Credits
Organization, function, and dysfunction of the human brain across the life span. Neuropsychological assessment techniques. Reviews behavioral, cognitive, and personality changes as a result of disease, injury, and aging. Prer., PSY 1000 or consent of instructor.

PSY 3660 - Service-Learning Internship

3 Credits
As a service-learning course, students will serve in the community and learn beginning helping skills. Assistance will be provided in locating volunteer positions. Approved for Compass Curriculum requirement: Summit. Prer., Consent of instructor.

PSY 3710 - Survey of Clinical Psychology

3 Credits
A review of the area of clinical psychology including such topics as clinical assessment, therapies, and community intervention. Prer., PSY 1000.

PSY 3720 - Community Psychology and Mental Health

3 Credits
Focus on issues in the organization, financing, and delivery of mental health services within the community, innovative techniques for the provision of mental health-related services, the role of community factors in the production of emotional disorders, and technologies of community change. Prer., PSY 1000 and PSY 3280.

PSY 3840 - SPSS and Other Statistical Packages

3 Credits
The use of statistical package software to enter and organize data and the selection and use of appropriate statistical analyses of the data. Prer. or Coreq., PSY 2100 or equivalent.

PSY 3850 - Principles of Psychological Testing

3 Credits
A psychological and statistical analysis of the principles underlying construction and use of tests of ability and personality. Prer., PSY 2100.

PSY 3860 - Theories of Psychotherapy

3 Credits
An introduction for the upper-division undergraduate into the theories and techniques of psychotherapy. The course examines foundations to the practice of psychotherapy, professional ethics, and various approaches to psychotherapy (e.g., psychodynamic, cognitive, behavioral, humanistic, existential). Prer., PSY 1000 and PSY 3280.

PSY 3930 - Industrial/Organizational Psychology

3 Credits
An introduction to the scientific study of people in work organizations. Emphasis on understanding people in organizations and applying this knowledge to resolve problems of human behavior at work. Prer., PSY 1000.

PSY 3940 - Psychology and the Law

3 Credits
An introductory survey course covering selected topics relating to the interaction of psychology and the law. Prer., PSY 1000.

PSY 3950 - Applied Psychology

3 Credits
Examines the application of psychological research and theory to "real world" issues: organizational behavior, health and health care, environmental, legal, educational issues, and public policy. Prer., PSY 1000.

PSY 4000 - Honors Seminar II

1 Credit
Continuation of Honors Seminar I (PSY 300). Students complete independent research projects and meet together with honors program coordinator. Prer., PSY 2100, PSY 2110, PSY 3000, PSY 3100, and consent of instructor. Open only to students formally accepted into the Department of Psychology honors program.

PSY 4050 - Physiological Psychology

3-4 Credits
The morphological, neurochemical, and physiological bases of behavior. Topics include the physical substrate for emotion, motivation, consciousness, sleep, learning, and memory. Prer., PSY 3270 or consent of instructor. If course is taken for 4 hours credit, one 2-hour lab per week is required.

PSY 4060 - Seminar in Health Psychology

3 Credits
In-depth focus on selected topics in health psychology. Topics will vary. Prer., PSY 2110 and PSY 3060 or PSY 3280.

PSY 4110 - Seminar in Methodology

3 Credits
In-depth focus on selected topics in methodology, statistics, and measurement. Topics will vary. Prer., PSY 2100 and PSY 2110.

PSY 4120 - Human Memory

3 Credits
Psychological research and theories about memory. Its focus will be on the memory abilities of normal-functioning adults. Memory functions and structures will be inferred from research studies, several of which will be demonstrated in class. Some implications for improving memory will be discussed. Prer., PSY 1000.

PSY 4130 - Seminar in Learning and Cognition

3 Credits
In-depth focus on selected topics in learning and cognition. Topics will vary. Prer., PSY 2110 and PSY 3130 or PSY 4120.

PSY 4170 - Sensation and Perception

3-4 Credits
Introduction to psychophysical scaling, the physical senses (with special emphasis on audition and vision), and perceptual phenomena. One 2-hour lab per week required if course taken for 4 hours credit. Prer., PSY 2100 and PSY 2110 or consent of instructor.

PSY 4190 - Conditioning: Principles and Application

3 Credits
Principles of classical and operant conditioning in humans and other animals. Presentation of the theoretical basis of behavior modification. One 2-hour lab required if course taken for 4 hours credit. Prer., PSY 1000.

PSY 4210 - Practicum in Experimental Psychology

1-3 Credits
Laboratory for advanced psychology majors. Emphasis will be on individual projects. Prer., Consent of instructor.

PSY 4220 - Introduction to Language Behavior

3 Credits
Introduction to general communication theory with special emphasis on human communication and relation of language to thought. Prer., 16 hours of PSY or consent of instructor.

PSY 4240 - Seminar in Psychology of Personality

3 Credits
In-depth focus on selected topics in personality. Topics will vary. Prer., PSY 2110 and PSY 3240.

PSY 4270 - Seminar in Biopsychology

3 Credits
In-depth focus on selected topics in biopsychology. Topics will vary. Prer., PSY 2110 and PSY 3270.

PSY 4280 - Seminar in Abnormal Psychology

3 Credits
In-depth focus on selected topics in abnormal psychology. Topics will vary. Approved for Compass Curriculum requirement: Summit. Prer., PSY 2110 and PSY 3280.

PSY 4400 - Seminar in Social Psychology

3 Credits
In-depth focus on selected topics in social psychology. Topics will vary. Approved for Compass Curriculum requirement: Summit. Prer., PSY 2110 and PSY 3400.

PSY 4430 - Seminar in Social Issues

3 Credits
In-depth focus on social issues. Topics will vary. Prer., PSY 2110, PSY 3940.

PSY 4440 - Drugs and Behavior

3 Credits
A behavioral analysis of the effects of psychoactive compounds including stimulants, depressants and antidepressants, antipsychotics, anxiolytics, opiates, and psychedelics. Presentation of neurobiological models of affective disorders (e.g., schizophrenia, endogenous depression, mania, and anxiety). Prer., 10 hours of PSY or consent instructor. PSY 3270 or introductory biology and/or chemistry recommended.

PSY 4510 - Seminar in History of Psychology.

3 Credits
Outline of the development of psychological theories since the Greek philosophies. The story of experimental psychology and its problems. Schools of psychological thinking. Readings of original sources in English and English translations. Prer., PSY 2100, PSY 2110, and Junior status.

PSY 4620 - Seminar in Developmental Psychology

3 Credits
In-depth focus on selected topics in developmental psychology. Topics will vary. Approved for Compass Curriculum requirement: Summit. Prer., PSY 2110 and PSY 3620.

PSY 4650 - Evolutionary Neuropsychology

3 Credits
This course serves as an introduction to the evolution of the structures and the functions of the human brain. Prer., PSY 2110 or instructor consent. Meets with ANTH 4650.

PSY 4990 - Teaching of Psychology

1-3 Credits
A consideration of problems, techniques, and subject matter related to the teaching of psychology. Prer., Consent of instructor.

PSY 5210 - Psychology of Aging I

3 Credits
An advanced orientation to developmental research across the life span in biological, neurological, sensory/perceptual and cognitive domains with a focus on older adulthood and aging. Students explore theory research methodology, and empirical studies on the psychology of aging. Prer., Psychology graduate status or consent of instructor.

PSY 5220 - Psychology of Aging II

3 Credits
An advanced-level orientation to developmental research across the life span in personality, social, and health domains. Age-related pathologies will also be considered. Students explore theory, research methods, and empirical studies on the psychology of aging. Prer., Psychology graduate status or consent of instructor.

PSY 5710 - Clinical Skills Laboratory

3 Credits
An introductory practicum course which emphasizes psychotherapy skills and concepts related to therapeutic interaction. A prerequisite for the clinical practicum, PSY 6710. Prer., Psychology graduate status.

PSY 5800 - Behavioral Science Statistical Packages

3 Credits
The use of the computer for statistical analyses will be reviewed. Topics include how to organize data collections, selection and use of appropriate statistical packages, and storing and retrieving files. Prer., PSY 5850 or equivalent. Graduate status in PSY or consent of instructor.

PSY 5810 - Research Statistics and Methodology I

4 Credits
Advanced statistical techniques and research methodology for psychological research. Focuses on methods for use with experimental research design, including factorial, repeated measures and mixed design ANOVA models. Computer lab focuses on use of statistical packages for analysis of data. Prer., Introductory statistics, Psychology graduate status, or consent of instructor.

PSY 5820 - Research Statistics and Methodology II

4 Credits
Advanced statistical techniques and research methodology for psychological research. Focuses on methods for use with nonexperimental research design, including correlation and multiple regression. Measurement issues are covered, including reliability and validity. Computer lab uses statistical packages for analysis of data. Prer., PSY 5810.

PSY 5830 - Applied Multivariate Techniques I: Measurement, Factor Analysis, and SEM

3 Credits
Multivariate statistical and design methodology focusing on test construction, classical and item response test theories, ROC (Receiver Operating Characteristic) curve analysis, exploratory and confirmatory factor analysis, and structural equation modeling including path analysis and latent variable modeling. Prer,. , PSY 5810 and PSY 5820 or equivalent, knowledge of statistical computing software, Psychology graduate status.

PSY 5840 - Methods and Design for Analyzing Change

3 Credits
Research design and statistical analysis for the study of change. Topics include developmental research design techniques, covariance structure analysis, multilevel modeling, and growth curve analysis. Computer programs will be used. Prer,. PSY 5810 and PSY 5820; Psychology graduate status.

PSY 5850 - Research Statistics

3 Credits
Advanced statistical techniques for research psychologists, including specialized in-depth treatment of analysis of variance. Prer., Introductory statistics, psychology graduate status, or consent of instructor.

PSY 5870 - Multivariate Statistics

3 Credits
Multivariate procedures are described extensions of the general linear model. Procedures include: multiple regression, canonical correlation, MANOVA, factor analysis, discriminant function analysis, and other selected topics. Prer., Psychology graduate status or consent of instructor.

PSY 5900 - Basic & Applied Research Methods

3 Credits
Advanced survey of research design and methodology. Prer., PSY 5850 and psychology graduate status or consent of instructor.

PSY 5950 - Psychometric Theory

3 Credits
Theory of psychological test construction. Emphasis on scaling models and the assessment of reliability and validity by univariate and multivariate methods. Prer., PSY 5850, psychology graduate status, or consent of instructor.

PSY 6030 - Research Practicum

3 Credits
Students will be placed in a clinical or research program for the application phase of their psychology training. Prer., Psychology graduate status or consent of instructor.

PSY 6100 - Developmental Psychology

3 Credits
Prer., Psychology graduate status or consent of instructor.

PSY 6110 - Cognition

3 Credits
Prer., Psychology graduate status or consent of instructor.

PSY 6120 - Neuroscience

3 Credits
Prer., PSY 6610, Psychology graduate status, or consent of instructor.

PSY 6130 - Social Psychology

3 Credits
Prer., Psychology graduate status or consent of instructor.

PSY 6140 - Personality

3 Credits
In-depth examination of theories and research in the area of Personality Psychology. It is designed to help students develop a solid theoretical foundation on the biological, psychological, social, cognitive, and developmental facets of personality and assist in furthering their understanding of human nature. A variety of personality theories and contemporary research conducted on these theories will be examined and discussed. Prer., Psychology graduate status or consent of instructor.

PSY 6150 - Psychology and Law

3 Credits
Study of how research and practice in clinical, social, developmental, cognitive, and biological psychology can contribute to a better understanding of law and legal issues, and how the legal system can be informed by psychological research and practice. Prer., Psychology graduate status.

PSY 6160 - Trauma Psychology I

3 Credits
A course in the orientation to the field of trauma psychology across the life span. Neurobiopsychosocial approach to trauma from a developmental perspective. Students explore human adaptation and psychopathological outcomes and empirical evidence on Trauma Psychology. Prer., Psychology graduate status.

PSY 6170 - Trauma Psychology II

3 Credits
A second course in the orientation to the field of trauma psychology across the life span. Neurobiopsychosocial approach to trauma from a developmental perspective. Students explore theory, research methodology, and empirical evidence on Trauma Psychology. Prer., Psychology graduate status.

PSY 6410 - Aging Seminar (Special Topics)

1-3 Credits
Current research on aging and psychology. Topics to be specified for particular semester. See instructor for details. May be repeated for credit. Prer,. PSY 5210 and PSY 5220 or consent of instructor.

PSY 6420 - Aging

3 Credits
In-depth examination of theory and research on aging on a focused topic within a core content area of psychology (e.g. cognitive, personality, social). May be repeated for credit. Req., Graduate status, PSY 5210, PSY 5220, consent of instructor.

PSY 6430 - Contemporary Issues in Psychology

1 Credit
Contemporary topics in psychology as broadly construed. Emphasis on current and ongoing research as presented in a speaker series. Prer., Psychology graduate status.

PSY 6480 - Selected Topics in Psychology

1-5 Credits
Subject matter will change depending upon individual instructor and time of offering. The topics for any given semester will be specified in the semester schedule. May be repeated for credit. Prer., Psychology graduate status, non-degree graduate status, or consent of instructor.

PSY 6510 - History of Psychology

3 Credits
An advanced-level overview of the development of psychological theories since the Greek philosophies. Prer., Psychology graduate status.

PSY 6610 - Clinical Geropsychology I

3 Credits
Prepares students to work in geriatric health settings. Content includes health psychology, interdisciplinary teamwork, long-term care, policy issues, and community resources. Prer., PSY 5210, PSY 5220, and PSY 5710; Psychology graduate status.

PSY 6620 - Clinical Geropsychology II

3 Credits
Course covers psychopathology among older adults, clinical assessment approaches with older adults, and psychotherapeutic interventions with older adults. Specific content includes examination of major models of case conceptualization and applications to older adults; the effects of age upon psychopathology; instruments designed for older adults in the assessment of mood, personality, and cognition; and specialized psychotherapeutic approaches with older adults, including emphasis on empirically based treatments. Prer,. PSY 5210, PSY 5220, PSY 5710, PSY 6610: Psychology graduate status.

PSY 6630 - Clinical Trauma Psychology I

3 Credits
Prepares students to work in trauma health settings. Content covers the culturally sensitive assessment of trauma exposure and PTSD and current research-supported interventions (psychosocial, pharmacological, and somatic) for trauma-related disorders. Prer., PSY 5710, and either PSY 6160 or PSY 6170; Psychology graduate status.

PSY 6670 - How to Teach More Effectively

1-3 Credits
Designed to help college professors become more effective teachers. Readings, discussions, and videotaped consultation. Prer., Psychology graduate status or consent of instructor.

PSY 6720 - Ethics and Practice Standards: Professional Development I

3 Credits
Training in standards of professional practice, including theoretical and practical aspects of ethics (e.g., record keeping, confidentiality, supervision). Students engage in 12 hours/week of direct clinical experience in the community, and attend seminar. Prer., Psychology graduate status; PSY 5710, PSY 6780, PSY 6920.

PSY 6730 - Diversity of Culture and Family: Professional Development II

3 Credits
Training in professional practice standards related to cultural and family systems, competency, and related ethics. Includes strategies for delivering services to various populations. Students engage in 12 hours/week of clinical practice and attend seminar. Prer., PSY 5710, PSY 6720, PSY 6780, PSY 6920; Psychology graduate status.

PSY 6740 - Clinical Practicum

1-3 Credits
Practicum in clinical psychology. Direct clinical experience for graduate candidates in psychology only. Students provide clinical services under supervision in community setting. May be repeated for credit. Prer., PSY 5710; Psychology graduate status or consent of instructor.

PSY 6780 - Advanced Psychopathology

3 Credits
An advanced presentation of a broad range of psychopathology relevant to children, adult, and aged populations. Explores the classification, description, etiology, and treatment of the major mental disorders consistent with the Diagnostic and Statistical Manual of Mental Disorders system. Considers issues in labeling, diversity, cultural relativism, and normative expectations in viewing psychopathological behavior. Prer., Psychology graduate status or consent of instructor.

PSY 6790 - Psychopharmacology

1 Credit
Physiological and behavioral factors associated with medications used to treat psychological disorders. Topics include drug metabolism (including age effects), common medication, behaviors associated with use and abuse, selection of medications to minimize adverse effects. Prer., PSY 6780 or consent of instructor. Psychology graduate status.

PSY 6800 - Clinical Geropsychology Special Topics

1-3 Credits
Current research on clinical geropsychology. Topics to be specified for particular semester. See instructor for details. May be repeated for credit. Prer., Graduate status.

PSY 6813 - Advanced Research Design and Statistical Methods Seminar (Special Topics)

1-3 Credits
Advanced research design and statistical analysis topics. Topics to be specified for each semester offered. See instructor for details. Credits are variable and depend on the topic and the instructor. May be repeated for credit. Prer., Graduate student status or consent of instructor.

PSY 6850 - Clinical Interviewing & Personality Assessment

3 Credits
Theory and practice in clinical interviewing and assessment of personality and psychopathology. Practical skill instruction in mental status exams, interviewing strategies, administering and interpreting personality tests commonly used in clinical practice, integration of interview and testing data, and report writing. Extensive opportunities for in-class and out-of-class practice of interviewing and assessment skills are provided. Emphasis is placed on development of basic interviewing and communication skills, rapport building, evaluation strategies, consideration of diagnostic data, cultural and ethnic diversity, the Mental Status Examination, structured interviewing, objective personality assessment, and the ability to organize and present information in oral and written form. Prer., PSY 5710, Psychology graduate status.

PSY 6860 - Cognitive Assessment

3 Credits
Covers intellectual assessment across the life span. Achievement testing and cognitive screening will also be covered. Prer., Psychology graduate status.

PSY 6870 - Clinical Neuropsychology

3 Credits
Course will cover basic foundations of human neuropsychology and neuropsychological assessment of adults. Topics will include brain-behavior relationships, differential diagnosis, and report writing. Prer., PSY 6860, Psychology graduate status.

PSY 6880 - Clinical Neuropsychology Lab

1-3 Credits
Training in practice of clinical neuropsychology through supervised experience administering, scoring, interpreting, and reporting test results. May be repeated. Prer., PSY 6860, PSY 6870 (may be concurrent); Psychology graduate status.

PSY 6920 - Psychotherapy

3 Credits
Readings and discussion of the psychotherapeutic process from various theoretical perspectives. Prer., Psychology graduate status or consent of instructor.

PSY 7000 - Masters Thesis

1-6 Credits
A research project under the supervision of the graduate faculty of the psychology department. Prer., Psychology graduate status.

PSY 7030 - Doctoral Research Practicum

3 Credits
Students participate in a research laboratory for instruction in research methods in psychology. Prer., Doctoral candidacy, PSY 5810, PSY 5820, PSY 5830, Psychology graduate status.

PSY 7990 - Clinical Internship.

1-5 Credits
Intensive training in clinical assessment, diagnosis, consultation, and/or psychotherapeutic treatment skills that is provided during an internship placement, typically at an off-campus training site. Prer., PhD students only with consent of DCT. Must be accepted for an internship.

PSY 8000 - Dissertation

0.5-10 Credits
Prer., Doctoral students only.

PSY 9300 - Independent Study

1-3 Credits
Undergraduate. Prer., 20 hours of psychology or equivalent and consent of instructor.

PSY 9500 - Independent Study in Psychology: Graduate

1-6 Credits
Prer., Consent of instructor. Psychology graduate status.

PSY 9990 - Candidate for Degree

0 Credits
Candidate for Degree. Prer., Psychology graduate status.

QUAN - Quantitative Methods

QUAN 2010 - Business Statistics

3 Credits
Statistical applications in business. Includes descriptive statistics, probability distributions, sampling theory, estimation, hypothesis testing, and simple and multiple regression. Prer., INFS 1100; MATH 1040, Sophomore standing or MATH 1120.

QUAN 2020 - Process and Statistics-Based Decisions

3 Credits
The course covers advanced problem solving techniquesrequired in upper division business classes. Decision tools, including application software and custom programs are stressed as

devices to study advanced decision, process, and organizational models. The techniques are applied to managerial settings. Prer., QUAN 2010. Coreq., ACCT 2010, INFS 1100, MATH 1120. Business students only.

QUAN 5500 - Fundamentals of Business Statistics

3 Credits
This is an introductory course in business statistics. It covers descriptive statistics, including numerical, graphical, and tabular techniques. It also covers the essential elements of experimental design and the fundamentals of inferential statistics. Common inferential statistics such as one- and two-sample t-tests, analysis of variance, correlation, simple and multiple regression and nonparametric statistics are included. An emphasis is placed on technique identification. Microsoft Excel's Data Analysis tools are used, requiring access to Windows-based Excel. Prer., Graduate business students only.

QUAN 5590 - Fundamentals of Business Statistics

3 Credits
This is an introductory course in business statistics. It covers descriptive statistics, including numerical, graphical, and tabular techniques. It also covers the essential elements of experimental design and the fundamentals of inferential statistics. Common inferential statistics such as one- and two-sample t-tests, analysis of variance, correlation, simple and multiple regression and nonparametric statistics are included. An emphasis is placed on technique identification. Microsoft Excel's Data Analysis tools are used, requiring access to Windows-based Excel. Online graduate course. Tuition schedule differs from on-campus courses. Prer., Graduate business students only.

QUAN 6190 - Research Tools for Managers

3 Credits
Business statistics with an emphasis on techniques for data analysis and inference in management. Students are assumed to be familiar with basic descriptive statistics, probability theory, and probability distributions from the prerequisite statistics course. Presentation of technical material is combined with hands-on analysis of data to aid managerial decision making. Course objectives are to develop a conceptual understanding of statistics and the role of data analysis in management, and to master the mechanics of applied statistics using Microsoft Excel. Distance MBA course. Tuition schedule differs from on-campus program. Prer., QUAN 5590.

QUAN 9400 - Independent Study in Quantitative Analysis - Undergraduate

3 Credits
Independent study at the undergraduate level with prior consent of the instructor under whose direction the study is undertaken and the dean. Prer., Consent of instructor and dean.

QUAN 9500 - Independent Study in Quantitative Analysis - Graduate

1-3 Credits
Independent study at the graduate level with prior consent of the instructor under whose direction the study is undertaken and the dean. Prer., Consent of instructor and dean.

RUSS - Russian

RUSS 1010 - Beginning Russian I

5 Credits
Skills in listening to and speaking Russian. Emphasis on useful expressions with cultural orientation.

RUSS 1020 - Beginning Russian II

5 Credits
Continued skills in listening to and speaking Russian. Reading and writing intensified with further study of Russian civilization. Prer., RUSS 1010 or equivalent.

RUSS 2110 - Intermediate Russian I

3 Credits
Russian at the intermediate level. Speaking, reading, and writing. Prer., RUSS 1020 or equivalent.

RUSS 2120 - Intermediate Russian II

3 Credits
An intermediate Russian course continuing conversational usage and cultural integration utilizing contemporary materials, newspapers, etc. Prer., RUSS 2110 or equivalent.

RUSS 9200 - Independent Study: Undergraduate

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong Russian preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

RUSS 9300 - Independent Study: Undergraduate

1-4 Credits
Independent work for undergraduates. By special arrangement with the faculty. Only for students presenting strong Russian preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

RUSS 9400 - Independent Study in Russian

1-3 Credits
May be repeated up to three times for credit. Prer., Consent of instructor.

SIFE - Students in Free Enterprise

SIFE 1000 - Students in Free Enterprise

1-3 Credits
Collegiate organization focused on educating in entrepreneurship, business ethics and market economics. Students identify and execute their own community projects at a Freshman or Sophomore level of work. With an approved and appropriate academic level of work, students can receive academic credit. Prer., Instructor consent required.

SIFE 3000 - Students in Free Enterprise (SIFE) - Collegiate Organization

1-3 Credits
Collegiate Organization focused on educating in entrepreneurship, business ethics and market economics. Students identify and execute their own community projects. With an approved and appropriate academic level of work, students can receive academic credit. Repeatable for credit in different semesters for a maximum of 3 credits. Prer., Instructor consent required.

SL - Sports & Leisure Studies

SL 5000 - Perspectives on Sport and Leisure Studies

3 Credits
An in-depth sociological analysis of leisure time behavior in industrialized countries. Emphasis will be given to the forms and types of

leisure activities, current trends, and future needs and alternatives. Sports will be considered as a special form of leisure. Meets with SL 4000, SOC 3300, SOC 4300, SOC 5300, and WEST 4300.

SL 5020 - Effectiveness in Coaching

1 Credit
The ACEP approved course for coaches, including an introduction to sport, exercise and management science and coaching pedagogy. Certifies student as Level I Coach. Students that complete SL 4020, SL 4030 and SL 4510 cannot take this course for credit. Meets with SL 4020.

SL 5040 - Principles of Sport Psychology

1 Credit
Motivation, communication, stress management, the use of mental imagery and other topics for enhancing coach-athlete relationships and for stimulating improved sport performance will be covered. Meets with S L 4040.

SL 5050 - Principles of Sport Physiology

1 Credit
Principles and methods of developing muscular and energy fitness. Provides coaches with the information and guidance to develop training programs appropriate for particular sport and athletes. Meets with S L 4050.

SL 5300 - Management of Sport and Leisure Programs

3 Credits
Analysis of administration and policies of park and recreation agencies. Topics will include financing, marketing, capital budgeting, user fees, alternative service delivery systems and cooperative arrangements with both the commercial and non-profit sectors. Meets with SL 4300.

SL 5320 - Principles of Sport Law

1 Credit
Explains a coach's legal responsibility in easy to understand terms and gives practical advice for improving standards of care and safety for athletes. Meets with SL 4320.

SL 5400 - Dimensions of Athletic Administration

3 Credits
Analysis of administration at junior and senior high schools, colleges, and universities. Examine the independent coordinates involved in management for athletic/sports administration, such as internal and external affairs, compliance and governance, student-athlete support service, human resource issues, and working with coaches. Meets with SL 4400 and SPTM 4200.

SL 5520 - Sports, Drugs and Society

1 Credit
Surveys the effects of drug use on personal development and athletic performance. Evaluates proposals for drug testing and discusses programs to prevent drug use and drug abuse. Meets with SL 4520.

SL 5900 - Internship in Sport and Leisure

1-6 Credits
Placement in agency or organization related to the student's area of specialization; student keeps journal and attends regular seminars to discuss experiences. Prer., SL 4000 or equivalent. Meets with SL 4900.

SOC - Sociology

SOC 1110 - Introduction to Sociology

4 Credits
General survey of the field of sociology. Sociology as a science; society and culture; social groups; social institutions; social interaction; social change. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS3.

SOC 1234 - Understanding Social Change

3 Credits
Focused introduction to sociological thinking and practice through the lens of understanding social change. Students learn to refine and analyze sociological observations engaging the distinct standpoints that emerge to illuminate the countours and dynamics of society and of social change.

SOC 1400 - Introduction to Restorative Justice

3 Credits
This course introduces the principles and practices of restorative justice. Students will examine specific restorative methods and models, and will have hands-on opportunities to learn and practice restorative dialogue facilitation and conflict conversation skills, becoming trained RJ facilitators by the course end. Meets with WEST 1400 and CJ 1003.

SOC 2010 - Special Topics in Sociology - Lower Division

3 Credits
Allows lower-division study of a specific topic.

SOC 2110 - Sex and Society

3 Credits
The course will critically examine theoretical perspectives on sexuality and sexual identity; varying historical and cultural constructions of sexuality; the relationship between sexual attitudes, behaviors and larger social forces and institutions; how sexuality is intertwined with other social constructs, especially gender and race; as well as contemporary political issues and debates. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS3.

SOC 2200 - Intro to Racial and Ethnic Groups

3 Credits
A survey of contemporary racial and ethnic group relations in the U.S. and globally. Includes discussion of the history and development of contemporary minority groups, emphasizing comparisons of social situations, discrimination, and cultural identity formations. Approved for LAS Social Science area and Cultural Diversity requirements. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. GT-SS3.

SOC 2220 - Communities in a Global Environment

3 Credits
Examines the challenges in developing sustainable communities within a framework that is sensitive to both social and environmental justice. Special attention is devoted to the impact of the process of globalization on community development and organization. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). GT-SS3.

SOC 2225 - Communities in a Global Environment: Service Learning Component

1 Credit
This service-learning component is taken in

conjunction with SOC 2220, Communities in a Global Environment. The student must volunteer as an intern in a community organization related to the substantive content of SOC 2220. Coreq., SOC 2220.

SOC 2240 - Childhood Socialization

3 Credits
An examination of the process through which children define themselves as members of their culture. The influence of such "Cultural communicators" as the family, school, television, day care, children's literature, games, toys and peer relations will be examined. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

SOC 2250 - Gender Images

3 Credits
Study of the images of women and men in American society, relating these stereotypes to actual conditions and experiences of women and men. Recommended to the returning student. Approved for LAS Social Science area and Cultural Diversity requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. GT-SS3.

SOC 2300 - Transitions in Adulthood: Lifecourse Perspectives

3 Credits
The aging of society shapes many aspects of the social fabric. This course examines the impact of demographic changes on individuals, families, communities, and countries. Multiple perspectives show impact on aging persons, other generations, institutions, social policy, and economics. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Meets with GRNT 2300.

SOC 2400 - Digital Society

3 Credits
This class is an exploration of relationships with technology, new media, cyborgs, and futurism. Students will critically examine the meanings of digital ubiquity and connectivity and its ramifications on the social tapestry of the recent past, present, and future.

SOC 2500 - Social Problems

3 Credits
An introduction to the sociological perspective on social issues and problems such as deviance, race and ethnic relations, aging, crime and delinquency, war, drug abuse, alienation, mental illness, etc. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.GT-SS3.

SOC 2505 - Social Problems: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 2500, Social Problems. The student must volunteer as an intern in a community organization related to the substantive content of SOC 2500. Coreq., SOC 2500.

SOC 3070 - Social Research Methods

4 Credits
An elementary examination of the various methods used in social research with emphasis on the scientific method and the role of empirical inquiry in sociology. Prer., ENGL 1310, sophomore status or higher, or consent of instructor. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Writing Intensive. GT-SS3. Meets with CJ 3100.

SOC 3150 - Modern Sociological Theory

3 Credits
A review of major sociological theorists of the 19th and 20th centuries. Will consider the major works of such pre-World War II writers as Karl Marx, Emile Durkheim, and Max Weber, and the post-war work of Foucault and others. Prer., 9 hours of Sociology or consent instructor. Junior standing required.

SOC 3170 - Social Statistics

4 Credits
Course stresses quantitative techniques used in analyzing social data via the SPSS computer program. Research methodology is also emphasized. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Prer., SOC 3070 (formerly SOC 2120) or equivalent. Meets with CJ 3150.

SOC 3210 - American Minority Communities

3 Credits
Examines the forces involved in shaping the development of ethnic minority communities in the United States. The course helps students understand contemporary minority communities via analyses of important historical moments, the unique cultures of each of the four large ethnic minorities, and social problems. While each community is examined independently of the others, interethnic relations are seen as important factors in the development of each community. Prer. SOC 1110 or Consent of Instructor.

SOC 3220 - Urban and Community Sociology

3 Credits
The city in terms of its social structure, residential and institutional patternings, processes of interaction, demographic processes and patterns of growth and change. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110 or consent of instructor.

SOC 3225 - Urban and Community Sociology: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3220, Urban and Community Sociology. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3220. Coreq., SOC 3220.

SOC 3230 - The Chicano Community

3 Credits
Study of the origin, development, and current order of the Chicano community. Includes studies of the "Barrio," ethnic identity, social values, and the consequences of prejudice and discrimination. Prer., SOC 1110 or SOC 2200. Meets with WEST 3230.

SOC 3235 - Chicano Community: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3230, Chicano Community. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3230. Coreq., SOC 3230.

SOC 3240 - African American Community

3 Credits
Study of the origin, development, and contemporary nature of the black community. Encourages an understanding of black culture and values, and the consequences of prejudice and discrimination. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110 or SOC 2200. Meets with WEST 3240.

SOC 3250 - Power, Privilege and Social Difference

3 Credits
Examines the processes and conditions that produce the systems of differences and privilege shaping our lived experiences. Critically analyzes the prevailing cultural ideologies surrounding class, race, gender, sexuality, and ability. Emphasizes awareness, respect, justice and resolution. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110 or equivalent. Meets with WEST 3150.

SOC 3255 - Power, Privilege, and Social Difference: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3250, Power, Privilege, and Social Difference. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3250. Coreq., SOC 3250.

SOC 3270 - Native Communities

3 Credits
Examines the development and current nature of indigenous populations world-wide, with in-depth analyses of Native America. Includes issues of social structure, collective identity, cultural survival, and access to resources. Also examines consequences of public policy and development policy. Prer., WEST 2010, SOC 1110 or SOC 2500. Meets with WEST 3220.

SOC 3280 - Asian American Communities

3 Credits
A general introduction to Asian American Studies. Surveys Asian American social organizations and political history from the 1800s to the present through the lens of immigration, family, labor, community, activism, and resistance. Prer., SOC 1110 or SOC 2200 or WEST 2010. Meets with WEST 3280.

SOC 3290 - Perspectives on Race and Ethnic Relations

3 Credits
A survey of racism, discrimination, prejudice, and relationships between dominant and minority groups in selected areas of the world. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 2200 or consent of instructor. Meets with WEST 3290.

SOC 3295 - Perspectives on Race and Ethnic Relations: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3290, Perspectives on Race and Ethnic Relations. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3290. Coreq., SOC 3290.

SOC 3300 - Sociology of Sport.

3 Credits
Analysis of sport and its place in the culture life of contemporary societies. Focus on how sport and sport experiences are related to social development, social relations and major spheres of social life such as the economy, political order, education and religion. Prer., Soc 1110 or consent of instructor.

SOC 3310 - Sociology of the Family

3 Credits
The family as a social institution. Historical development and contemporary cross-cultural analysis with emphasis on the contemporary American family. Prer., 6 hours of sociology. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Meets with WEST 3310.

SOC 3320 - African American Families

3 Credits
Examines the various manifestations of "Family" within the African American community and highlights the historical and contemporary structural forces which contributed to these shifting arrangements. Emphasis is also placed on gender and class variations in black family experiences. Prer., six semester hours of Sociology. Meets with WEST 3320.

SOC 3330 - Restorative Dialogue

3 Credits
Restorative practices are used in our judicial system, schools, and the work place. This highly interactive course will focus on the fundamental principles and practices of restorative justice (a victim-centered response to harm) and restorative dialogue (conflict conversation skills). Prer., SOC 1400 or WEST 1400 or CJ 1003; or the GPS 1010 section, Peacebuilders. Meets with WEST 3330 and CJ 3230.

SOC 3340 - Food, Health, and Inequality

3 Credits
An introduction to the intersecting areas of food, culture, community, politics, economics, and health. Power dynamics and social structures will be used to examine the risks of hunger, negative health outcomes, and cultural survival. Approved for LAS Social Science area and Global Awareness requirements. Approved for Compass Curriculum requirements: Sustainability; Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior.

SOC 3345 - Food, Health, and Inequality: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3340, Food, Health, and Inequality. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3340. Prer., Junior or Senior standing. Coreq., SOC 3340.

SOC 3350 - Sociology of Health and Illness

3 Credits
This course examines the sociological dimensions of health and illness - how health issues are culturally framed; the impact of social position including race, class, and gender; and the social organization and power dynamics of health and healthcare institutions.

SOC 3360 - Sociology of Drugs and Addiction

3 Credits
Examines the sociological causes and consequences of drug addiction within historical, cultural, and social contexts. Assesses public policy approaches, treatment and social control. Prer., SOC 1110.

SOC 3400 - Criminology

3 Credits
A basic survey course in criminology. The na-

ture and development of law, theories of causation, empirical studies, crime, delinquency, courts, police, and corrections are studied. Approach is multidisciplinary. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with WEST 3470.

SOC 3405 - Criminology: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3400, Criminology. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3400. Coreq., SOC 3400.

SOC 3410 - Sociology of Law

3 Credits
Emphasis is on the sociology of law, and the influence of the media on perceptions of the legal system. The criminal justice system is analyzed principally from the sociological viewpoint. Prer., Freshman Writing ENGL 1310.

SOC 3440 - Community Leadership

3 Credits
This course profiles America's democratic and civil rights history, current events, and leadership theory to demonstrate how community and collaboration among citizens have always been core to social change. Leadership will be examined as a personal calling and social responsibility.

SOC 3490 - Youth Gangs

3 Credits
A sociological examination of youth gangs. Factors related to formation and maintenance of youth deviant culture in different historical periods. The social construction of gangs, gang resistance to social control, and criminalization of youth of color. Structural, community and neighborhood influences. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with WEST 3490.

SOC 3495 - Youth Gangs: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 3490, Youth Gangs. The student must volunteer as an intern in a community organization related to the substantive content of SOC 3490. Coreq., SOC 3490.

SOC 3570 - Field Experience in Sociology

1-3 Credits
Opportunity to obtain academic credit for directed learning in an ongoing social organization. The experience may be paid or volunteer. It is the principle responsibility of the student to obtain access to an appropriate placement. One hour of credit may be earned for each three hours a week of experience, up to a maximum of three credit hours. Meets with WEST 3660. Prer., SOC 1110.

SOC 3600 - Social Psychology

3 Credits
A survey of the filed of social psychology, with an emphasis on socialization, relationships, self-concept, and identity. Prer., SOC 1110 or consent of instructor.

SOC 3610 - Gender and Society

3 Credits
Examines the social construction of gendered difference and the consequences of that difference for individuals, relationships, social institutions, and society in general. The course emphasizes critical analysis and encourages personal contribution. Approved for LAS Social Science area requirement. Prer., 6 hours of Sociology or consent of instructor.

SOC 3640 - Sociology of Popular Culture

3 Credits
Survey of critical approaches to leisure popular culture. Specific topics may include advertising, television, music, sport, subcultures and the body in popular culture. Prer., SOC 1110.

SOC 3800 - Restorative Discipline in Schools

3 Credits
Exposes students to the restorative justice perspective as applied in the school setting. Investigates how restorative practices can strengthen schools through transformation of the classroom, including improved school safety and reduced discipline infractions, suspensions, and expulsions. Prer., SOC 1400 or WEST 1400 or CJ 1003; or the GPS 1010 section, Peacebuilders. Meets with WEST 3800.

SOC 4010 - Special Topics in Sociology

3 Credits
Offered to allow intensive study in a specific area on a "Demand" basis. Meets with SOC 5010.

SOC 4040 - Sociology of Gender and Sexuality

3 Credits
Examines historical and contemporary theories of gender and sexuality; the course is structured around questions which consider the relationship between masculinities/femininities, ideologies of the family, and the politics of sexuality. Prer., SOC 2250 or SOC 3610 or WEST 2010. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with WEST 4040.

SOC 4080 - Men and Masculinities

3 Credits
This class undertakes a critical exploration of men and masculinities, exploring men as gendered beings. It explores manhood as a social construct, both historically and cross-culturally, and provides an overview of theories of male gender role development as well as a variety of topics including power and patriarchy; race, class and sexuality; men in families; work; violence; health; friendship and intimacy; men's movements; and the growing field of men's studies. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110. Meets with WEST 4080.

SOC 4090 - Research Practicum

3 Credits
Practical experience in application and principles of research design and data processing to a social research problem selected by instructor. Prer., SOC 5070 or consent of instructor.

SOC 4110 - Sociology of Homelessness

3 Credits
Examines the social, political, and economic dimensions of homelessness. Emphasis on the extent, nature and causes of, and societal responses to, homelessness. The course is grounded in a service-learning format, which involves working with homeless service and advocacy organizations. Prer., SOC 1110 or consent of instructor. Meets with SOC 5110.

SOC 4115 - Sociology of Homelessness: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4110, Sociology of Homelessness. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4110. Coreq., SOC 4110.

SOC 4120 - Body, Culture, and Power

3 Credits
Introduces the sociological study of the human body and how the body is socially constructed based on culturally relevant norms. Examines the connection between mind and body, interrogates identity and appearance norms, and examines the various body politics perpetuated in American society. Prer., 9 hours of sociology or consent of instructor.

SOC 4150 - Social Theory II

3 Credits
Explicit focus on contemporary social theory and the sociology of knowledge, with special attention to the proposed nature of the relationship between knowledge and reality. Prer., SOC 3150.

SOC 4170 - Advanced Statistics and Methods

4 Credits
Designed to provide student competence in the appropriate use and interpretation of statistical techniques through multivariate analysis. Advanced research methodology is also introduced. Instruction in the use and application of the SPSS computer program package is stressed. Includes practice in assessing and analyzing large scale databases. Prer., SOC 3170. Meets with SOC 5170.

SOC 4180 - Community Organization and Analysis

3 Credits
Study of community variables; economic, cultural, political and social. Comparative analysis of race, class, gender, and ethnicity in community settings and review of a range of research methods. Prer., Upper division social science major.

SOC 4190 - Deviant Behavior

3 Credits
An examination of the definition, nature, perspectives and theories, consequences, and social control of deviant behavior. Various forms of problematic deviant behavior will be examined such as drug abuse, alcoholism, mental illness, suicide, and crime. Prer., SOC 1110 or consent of instructor.

SOC 4195 - Deviant Behavior: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4190, Deviant Behavior. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4190. Coreq., SOC 4190.

SOC 4200 - Sociology of Poverty

3 Credits
Consideration of structural origins of poverty; the underclass and the dual economy. Analysis and evaluation of consequences of poverty, especially in relation to family, children, and career. Review of antipoverty programs. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with WEST 4200.

SOC 4205 - Sociology of Poverty: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4200, Sociology of Poverty. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4200. Coreq., SOC 4200.

SOC 4210 - Social Services and Welfare Reform

3 Credits
Provides a sociological examination of the transformation of social welfare within both the United States and other industrialized nations. Emphasis is placed on the structural forces producing welfare reform, the strategies employed to achieve it, and the differential impact of this reform by race and gender. Open only to junior/senior/grad level. Prer., SOC 1110 and another 3-hour Soc class. Meets with SOC 5210.

SOC 4215 - Social Services and Welfare Reform: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4210, Social Services and Welfare Reform. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4210. Coreq., SOC 4210.

SOC 4220 - Sustainable Urban Development

3 Credits
Study of theories and practical applications of sustainable urban development at the local, regional, national, and international levels. Focuses on the sociological dimensions of urban sustainability including social, racial and regional inequalities, power structures, and ideology. Course emphasizes fieldwork and collaborative learning in local settings. Prer., Consent of instructor. Meets with SOC 5220.

SOC 4225 - Sustainable Urban Development: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4220, Sustainable Urban Development. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4220. Coreq., SOC 4220.

SOC 4230 - Foundations of Disability Studies

3 Credits
A survey of the interdisciplinary field of disability studies. Course will cover: key concepts in disability studies, the history of people with disabilities, media representations of people with disabilities, bioethical issues involving people with disabilities, and disability culture. Prer., Junior/Senior or Consent of Instructor. Meets with SOC 5230.

SOC 4240 - Sociology of Dis/Ability

3 Credits
Assumes a sociological perspective to critically deconstruct traditional and medical interpretations of the meaning of disability. Focuses on the historical and cultural conditions that have produced the condition of disability and how disability intersects with gender, race, class, and sexuality. Approved for LAS cultural diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., 9 hours of sociology or consent of instructor. Meets with SOC 5240.

SOC 4245 - Sociology of Dis/Ability: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4240, Sociology of Dis/Ability. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4240. Coreq., SOC 4240.

SOC 4250 - Sociology of the Environment

3 Credits
Examines how local and global environmental issues intersect with social dynamics of global inequality, poverty, gender, race and religion. Students explore how social activism empowers individuals to fight against corporate and governmental institutional processes affecting the environment. Approved for Compass Curriculum requirement: Sustainability.

SOC 4290 - Sport, Film, and Society

3 Credits
This course takes a sociological and intersectional approach to sport film. We will watch films to understand how sports and athletes have been imagined in popular culture. Themes will include representation of race, class, gender, and sexuality; authoritarianism versus egalitarianism; and sportsmanship versus commercialism. Approved for LAS Cultural Diversity area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110.

SOC 4300 - Sociology of Sport

3 Credits
Advanced analysis of sport from a sociological perspective. This course studies sport as social phenomena, structural relations, and a field of experience that has developed over time. Theoretical perspectives include Marxism, critical race theory, feminist theory, post-structuralism, and figuration theory. Prer., 9 hours of sociology or consent of instructor. Meets with SL 5000, SOC 5300 and WEST 4300.

SOC 4310 - Class, Stratification and Power

3 Credits
Critical analysis of the theories and research on socioeconomic class and the reproduction of privilege, with a focus on the American class system. Addresses the prevailing cultural ideologies surrounding class as well as the ways in which class intersects with race, gender and sexuality. Prer., 9 hours of Sociology or consent of instructor. Meets with SOC 5310 and WEST 4310.

SOC 4320 - Religion in Society

3 Credits
Examination of religion as a social and cultural institution; impacts for communities and for society; shaping of religious identities, values, and practices; the role of religion in social control, social conflicts, and social change. Meets with SOC 5330. Prer., 6 hours of Sociology or consent of instructor.

SOC 4330 - Sociology of Education

3 Credits
Analysis of the school as a social organization. Among the topics considered are power and control in the school; classroom organization and procedures and their relation to learning and personality development in children; role of educators; and reciprocal relations of school and community. Prer., 9 Hours of Sociology.

SOC 4380 - Globalization and Development

3 Credits
Analyzes societies and cultures in light of increasing global interdependency. Studies the interaction between local and global levels in the development process and impacts on areas such as economic organization, technology, environments, political systems, transnational organizations, and everyday life. Comparison of alternative responses to globalization and development. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Sustainability; Inclusiveness (Global/Diversity). Meets with SOC 5380 and WEST 4380.

SOC 4385 - Globalization and Development: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4380, Globalization and Development. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4380. Coreq., SOC 4380.

SOC 4390 - Diversity Issues

3 Credits
Examines the impact that categories of difference have on our lives, the nature of discrimination in society, and how systems of inequality and oppression are maintained and perpetuated. Solutions for a more equitable world are identified. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 5390 and WEST 4390.

SOC 4400 - Contemporary Social Movements

3 Credits
Examination of the impact of social movements on the political, social and cultural practices of contemporary society. The course includes a brief review of the 'movement politics' of the 1960's, contrasts these to the labor movement and other historical predecessors, with major attention devoted to the infusion of social movement practices and technology into the 'mainstream' structures of power and organization. Prer., SOC 1110 or SOC 2500.

SOC 4430 - Social Work Practice with Individuals and Families

3 Credits
Public welfare services including problems involved in reconstructing personalities and improving relationships between them; the scope of social case work; and social worker as visiting teacher, family case worker, and investigator in other fields. Prer., Upper division social science major. Meets with SOC 5430.

SOC 4450 - Global Field Experience in Sociology

3 Credits
Students develop sociological and interdisciplinary competencies through travel, academic assignments and structured field experience in globalized communities. Alternating topics/locations emphasize how academic knowledge informs real-world endeavors. Includes additional non-tuition costs. May be repeated once with different topic or location. Meets with SOC 5450.

SOC 4460 - Field Studies in Sociology

1-6 Credits
Field based investigation of specific aspects of society, communities or social contexts. Topic and credit vary. Prer., Consent of instructor.

SOC 4470 - Intersections of Privilege

1-3 Credits
Hybrid/travel course built around the White Privilege Conference, designed to provide foundational knowledge; extend and maximize learning; provide an opportunity to connect the WPC experience with research and best

practices in the field; and to apply knowledge gained there. Meets with WEST 2470/4470.

SOC 4480 - Racial Storytelling: Montgomery Travel Course

3 Credits
This hybrid travel course to Montgomery, Alabama uses an interdisciplinary exploration of the ways in which racial history and reality are constructed and given meaning through storytelling and narrative, and the ways in which relations of power imbue these narratives. Approved for LAS Cultural Diversity area requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Navigate. Meets with SOC 5480 and WEST 4480.

SOC 4490 - Sociology Internship

3-6 Credits
Students will be involved in community and organizational settings where they will gain practical work and networking experience. They will apply critical analysis, social theory, and research methods to their sites for their academic component. Prer., Junior or Senior standing, consent of instructor required.

SOC 4510 - Community Development Field Work

3 Credits
Students will be involved in community settings and learn to identify issues in terms of causes and develop proposals of action that might enhance community organization and structure. Pass/Fail only.

SOC 4520 - Sociology of Corrections and Rehabilitation

3 Credits
Reviews programs demonstrated as effective in reducing criminal and delinquent behavior. Examines social, psychological and behavioral problems that influence intervention within custodial settings in comparison to community based alternatives.

SOC 4560 - Internship in Applied Sociology

3-6 Credits
Participate in supervised activities in a structured program to facilitate learning in conjunction with concurrent cognate course. One hour class time per week plus 3 hours internship for each one hour of credit. Prer., Sociology majors only, consent of instructor. Meets with SOC 5560.

SOC 4570 - Video Game and Simulation Culture

3 Credits
Critically explores the conceptual tools that video games and simulations offer as solutions for social ills. Focuses on the cognitive structures developed within game culture which allow everyday life to be more interesting, meaningful, and engaging. Meets with SOC 5570.

SOC 4600 - Critical Analysis of Capitalism

3 Credits
This course focuses on the global operation of capitalism as an economic and social system. Since capitalism is a global phenomenon and this class centrally focuses on capitalism, especially a highly globalized stage of "neoliberal capitalism," the entire focus of the course is on global awareness. So while much of the class focuses on the United States because it is currently the world's leading political and economic power, it constantly looks at the global flows of capital and how the logic of capital unfolds throughout the world. Approved for LAS Global Awareness requirement. Prer., SOC 1110, SOC 3150, or SOC 3250.

SOC 4620 - Sociology of Aging

3 Credits
Examination of the aging process in American society. Focus on development from late adolescence through old age and death. Meets with GRNT 4620.

SOC 4630 - Social Self and Identity

3 Credits
Focus on processes through which we develop a concept of who we are and how we are socially connected with others; examine connections between social and cultural context and how we identify ourselves and other people and make identity claims in relationships.

SOC 4650 - Sociology of Mental Illness

3 Credits
A study of the nature, history, perspective and theories, and social control of mental illness. Societal factors related to the prevalence and labeling of mental illness, prepatient and mental hospital patient experiences, contemporary mental health facilities and public policies will be examined. Prer., SOC 1110 or consent of instructor. Meets with SOC 5650.

SOC 4660 - Sociology of Medicine

3 Credits
Explores the social and cultural construction of medicine, medical practice, and disease across diverse cultures. Focuses on the medical systems of the the U.S. and other countries. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Sustainability; Inclusiveness. Prer., SOC 1110 or 6 credits of sociology coursework.

SOC 4670 - Sociology of Death and Dying

3 Credits
Study of mortality, who dies and how, the experience of dying, and ethical and political issues related to life and death. Also includes study of the hospice ideal, social and cultural norms regarding death, and the disruption of interpersonal relationships.

SOC 4680 - Inequality USA

4 Credits
This course identifies how inequality is defined, measured, studied, and understood by geographers. Students will analyze quantitative and qualitative data sources to explain inequality in the U.S., and will conduct research identifying spaces of inequality in Colorado Springs. Approved for LAS Cultural Diversity requirement. Meets with SOC 5680, WEST 4680, GES 4680, GES 5680.

SOC 4700 - Global Feminisms

3 Credits
Identifies broad trends and changes in feminist interpretations and approaches to sexual politics, race, migration, religion, geopolitics, and globalization. A global look at women's oppression and strategies of resisting subordination through various transnational feminist praxis, theory, and case studies. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Meets with SOC 5700 and WEST 4700. Prer., SOC 1110 or instructor permission.

SOC 4920 - Spiked: Spike Lee's Cinema

3 Credits
This course analyzes ways in which social identities are represented in American film, particularly through the cinematic lenses of director, producer, actor, and activist Spike Lee. Although this course will focus particularly on the interosculating representations presented by Lee, we will also contextualize his representations as elements of greater American filmic narratives around race, class, sexuality, and so forth gleaned from a variety of perspectives. Approved for LAS Humanities area and Cultural Diversity requirements. Prer., WEST 1010 (formerly WEST 2010). Meets with WEST 4920, SOC 5920.

SOC 4960 - Juvenile Delinquency

3 Credits
Factors involved in delinquent behavior. Problems of adjustments of delinquents and factors in treatment and post-treatment and adjustment. Meets with SOC 5960 and WEST 4960. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

SOC 4965 - Juvenile Delinquency: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 4960, Juvenile Delinquency. The student must volunteer as an intern in a community organization related to the substantive content of SOC 4960. Coreq., SOC 4960.

SOC 4980 - Capstone Preparatory

1 Credit
This course prepares students to complete a capstone research project in the subsequent semester. Students will: commit to specific research questions and methodological design, have one-on-one meetings with instructor for project feedback and approval, and complete all IRB requirements. Approved for Compass Curriculum requirement: Summit. Prer., SOC 1110 and SOC 2120. Coreq., SOC 3150 and SOC 3170.

SOC 4990 - The Sociology Capstone

3 Credits
The sociology senior capstone course is designed for sociology majors as a tool to demonstrate their cumulative learning of sociological theory, research methods, and substantive concepts and topics in the discipline. Approved for Compass Curriculum requirement: Summit. Prer., SOC 2120, SOC 3150, SOC 3170.

SOC 5010 - Seminar: Spec Topics in Sociology

1-12 Credits
Prer., Consent of instructor and graduate status.

SOC 5020 - Proseminar: Social Statistics

1 Credit
An intensive introduction to basic and intermediate statistics for graduate students.

SOC 5030 - Proseminar: Social Theory

1 Credit
An intensive study of social theory for selected students entering the graduate program.

SOC 5040 - Sociology of Gender and Sexuality

3 Credits
Examines historical and contemporary theories of gender and sexuality; the course is structured around questions which consider the relationship between masculinities/femininities, ideologies of the family, and the politics of sexuality. Open only to graduate students and unclassified students with a bachelors degree.

SOC 5050 - Proseminar in Sociology

1 Credit
Introduction to professional sociology for graduate students. Course will explore careers in sociology and discuss research, teaching, and publishing as the relationship between academics and applied work. Prer., Graduate student in Sociology.

SOC 5070 - Research Methods

4 Credits
Problems and procedures of research design and data analysis in social research. Topics covered include role of theory in research, hypothesis, testing, schedule construction, sampling, interviewing, scaling techniques, analysis procedures and report preparation. Prer., SOC 3170.

SOC 5090 - Research Practicum

3 Credits
Practical experience in application and principles of research design and data processing to a social research problem selected by the instructor. Prer., SOC 5070 or consent of instructor.

SOC 5100 - Teaching Practicum: Graduate Student Instructor

1-3 Credits
Practical experience in teaching undergraduate sociology. Assisting course instructor in the pedagogical process of course development, lecture delivery, discussion facilitation, and student assessment. Prer., Consent of instructor required.

SOC 5110 - Sociology of Homelessness

3 Credits
Examines the social, political, and economic dimensions of homelessness. Emphasis on the extent, nature and causes of, and societal responses to, homelessness. The course is grounded in a service-learning format, which involves working with homeless service and advocacy organizations. Prer., Graduate standing. Meets with SOC 4110.

SOC 5115 - Sociology of Homelessness: Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 5110, Sociology of Homelessness. The student must volunteer as an intern in a community organization related to the substantive content of SOC 5110. Coreq., SOC 5110.

SOC 5150 - Social Theory I

1 Credit
A review of major sociological theorists of the 19th and 20th centuries. Will consider the major works of such pre-World War II writers as Karl Marx, Emile Durkheim and Max Weber and the post-war work of Foucault and others. Prer., Graduate students only or consent of instructor.

SOC 5160 - Social Theory II

3 Credits
Explicit focus on continuing social theory and the sociology of knowledge, with special attention to the proposed nature of the relationship between knowledge and reality. Prer., SOC 3150.

SOC 5170 - Advanced Statistics and Methods

4 Credits
Designed to provide student competence in the appropriate use and interpretation of statistical techniques through multivariate analysis. Advanced research methodology is also introduced. Instruction in the use and application of the SPSS computer program package is stressed. Includes practice in assessing and analyzing large scale databases. Prer., SOC 3170. Meets with SOC 4170.

SOC 5180 - Community Organizations and Analysis

3 Credits
Study of community variables; economic, cultural, political and social. Comprehensive analysis of race, class, gender, and ethnicity in community settings and review of a range of research methods.

SOC 5190 - Deviant Behavior

3 Credits
An examination of the various perspectives, theories, and research on deviant behavior and its control.

SOC 5200 - Program Evaluation

3 Credits
Provides an introduction to program evaluation principles and methods. Surveys research designs and methodological techniques commonly used to evaluate social programs and policies. Considers the social and political context of program evaluation and the reporting of evaluation studies. Prer., Graduate status.

SOC 5210 - Social Services & Welfare Reform

3 Credits
Provides a sociological examination of the transformation of social welfare within both the United States and other industrialized nations. Emphasis is placed on the structural forces producing welfare reform, the strategies employed to achieve it, and the differential impact of this reform by race and gender. Open only to junior/senior/grad level. Prer., SOC 1110 and another 3-hour Soc. Meets with Soc 4210.

SOC 5215 - Social Services and Welfare Reform - Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 5210 - Social Services and Welfare Reform. This component requires the student to volunteer as an intern in a community organization related to the substantive content of SOC 5210.

SOC 5220 - Sustainable Urban Development

3 Credits
Study of theories and practical applications of sustainable urban development at the local, regional, national, and international levels. Focuses on the sociological dimensions of urban sustainability including social, racial and regional inequalities, power structures, and ideology. Course emphasizes fieldwork and collaborative learning in local settings. Prer., Consent of instructor. Meets with SOC 4220.

SOC 5225 - Sustainable Urban Development - Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 5220 - Sustainable Urban Development. This component requires the student to volunteer as an intern in a community organization related to the substantive content of SOC 5220.

SOC 5230 - Foundations of Disability Studies

3 Credits
This course introduces graduate students to the interdisciplinary field of disability studies. It covers: key concepts in disability studies, the history of people with disabilities, media representations of people with disabilities, bioethical issues involving people with disabilities, and disability culture. Graduate students only. Meets with SOC 4230.

SOC 5240 - Sociology of Dis/Ability

3 Credits
Assumes a sociological perspective to critically deconstruct traditional and medical interpretations of the meaning of disability. Focuses on the historical and cultural conditions that have produced the condition of disability and how disability intersects with gender, race, class, and sexuality. Prer., Open only to graduate students and unclassified students with a bachelor's degree. Class meets with SOC 4240.

SOC 5260 - Urban Sociology

3 Credits
Intensive examination of the social and cultural organization of the urban complex. History, contemporary growth, and future of the city are major perspectives; cross-cultural aspects of urban development also are emphasized.

SOC 5270 - Native Communities

3 Credits
Integrates theories of race and ethnicity with international development models to frame historic and contemporary challenges to indigenous sovereignty. Public policy and social structural opportunities and limitations are examined for their impact on cultural survival and access to resources. Prer., Graduate students only.

SOC 5300 - Sociology of Sport

3 Credits
Advanced analysis of sport from a sociological perspective. This course studies sport as social phenomena, structural relations, and a field of experience that has developed over time. Theoretical perspectives include Marxism, critical race theory, feminist theory, post-structuralism, and figuration theory. Prer., 9 hours of sociology and Graduate students only, or consent of instructor. Meets with SL 5000, SOC 4300 and SLWEST 4300.

SOC 5310 - Seminar: Class, Stratification and Power

3 Credits
Critical analysis of the theories and research on socioeconomic class and the reproduction of privilege, with a focus on the American class system. Addresses the prevailing cultural ideologies surrounding class as well as the ways in which class intersects with race, gender and sexuality. Prer., Open only to graduate students and unclassified students with a bachelor's degree. Meets with SOC 4310 and WEST 4310.

SOC 5320 - African-American Family.

3 Credits
A sociological examination of the shifts occurring in African-American relationship formation and family formation strategies, with special emphasis on the impact of class, gender, sexuality, and their intersections. Emphasizes both the historical and contemporary theoretical explanations. Prer., Graduate students only.

SOC 5330 - Sociology of Religion

3 Credits
Examination of religion as a social and cultural institution; impacts for communities and for society; shaping of religious identities, values, and practices; the role of religion in social control, social conflicts, and social change. Open to Graduate students and Unclassified students with Bachelor's Degree. Meets with SOC 4320.

SOC 5350 - Critical Analysis of Popular Culture

3 Credits
An introduction to a wide range of theoretical, analytical and methodological tools for interrogating media texts. Students will critically analyze an array of media texts from film and television, to music and comic books, through a variety of prisms: rhetorical, feminist, semiotic, ideological, historical, textual, cultural, and more. Grad only or instructor consent. Meets with COMM 4350 and COMM 6350.

SOC 5360 - Sociology of Culture

3 Credits
Advanced analysis of major themes and questions in the sociology of culture. Includes study of the production of culture, effects of culture on society, how culture stratifies, and culture as national difference. Prer., Graduate standing; undergraduates with permission of instructor.

SOC 5370 - Sociology of Media and Popular Culture

3 Credits
This course draws on cultural theory and history to explore the interdisciplinary field of media studies from a critical sociological perspective. The ultimate goal of the course is to critically interrogate a large part of students' lives that is typically taken for granted. Meets with COMM 5370.

SOC 5380 - Globalization and Development

3 Credits
Analyzes the evolution of global interdependency. Studies the interaction between local and global levels in the development process and impacts on economic, cultural, technological, environmental, ideological and political systems. Discusses transnational organizations, global women's agency, social justice movements, and human rights networks. Meets with SOC 4380.

SOC 5390 - Diversity Issues

3 Credits
Examines the impact that categories of difference have on our lives, the nature of discrimination in society, and how systems of inequality and oppression are maintained and perpetuated. Finally, solutions for a more equitable world are identified. Meets with SOC 4390.

SOC 5400 - Social Psychology.

3 Credits
Sociological approaches in the study of the self, role theory, persons in situations, identifications, socialization, and other characteristics of persons in society. Studies of group processes bearing upon personality processes.

SOC 5450 - Global Field Experience in Sociology

3 Credits
Students develop sociological and interdisciplinary competencies through travel, academic assignments and structured field experience in globalized communities. Alternating topics/locations emphasize how academic knowledge informs real-world endeavors. Includes additional non-tuition costs. May be repeated once with different topic or location. Meets with SOC 4450.

SOC 5460 - Field Studies in Sociology

1-6 Credits
Field based investigation of specific aspects of society, communities or social contexts. Topic and credit vary. Prer., Consent of instructor.

SOC 5470 - Intersections of Privilege

1-3 Credits
Hybrid/travel course built around the White Privilege Conference, designed to provide foundational knowledge; extend and maximize learning; provide an opportunity to connect the WPC experience with research and best practices in the field; and to apply knowledge gained there. Meets with SOC 4470 and WEST 2470/4470.

SOC 5480 - Racial Story Telling - Montgomery Travel Course

3 Credits
This hybrid travel course to Montgomery, Alabama uses an interdisciplinary exploration of the ways in which racial history and reality are constructed and given meaning through storytelling and narrative, and the ways in which relations of power imbue these narratives. Meets with SOC 4480 and WEST 4480.

SOC 5550 - Sociology of the Family

3 Credits
Recent trends in research and theory with emphasis on the American family in a comparative perspective. Family function and dysfunction will be considered.

SOC 5560 - Internship in Applied Sociology

3 Credits
Participate in supervised activities in a structured program to facilitate learning in conjunction with concurrent cognate course. One hour class time per week plus 3 hours internship for each one hour of credit. Meets with SOC 4560.

SOC 5570 - Video Game & Simulation Culture

3 Credits
Critically explores the conceptual tools that video games and simulations offer as solutions for social ills. Focuses on the cognitive structures developed within game culture which allow everyday life to be more interesting, meaningful, and engaging. Prer., SOC 1110 or consent of instructor. Meets with SOC 4570.

SOC 5580 - Inclusive Teaching

3 Credits
This course is designed for students who plan to teach and are committed to creating an inclusive classroom that incorporates a diverse and inclusive curriculum. The course examines a wide range of topics related to sociological teaching, curriculum, and pedagogy.

SOC 5590 - Teaching Sociology

3 Credits
Focuses on the practical development of pedagogical skills involved in teaching sociology at the university level. Syllabus development, seminar facilitation, lecture skills, and assessment will be covered. Prer., Graduate students only.

SOC 5600 - Critical Analysis of Capitalism

3 Credits
This course focuses on the global operation of capitalism as an economic and social system. Since capitalism is a global phenomenon and

this class centrally focuses on capitalism, especially a highly globalized stage of "neoliberal capitalism," the entire focus of the course is on global awareness. So while much of the class focuses on the United States because it is currently the world's leading political and economic power, it constantly looks at the global flows of capital and how the logic of capital unfolds throughout the world. Approved for LAS Global Awareness requirement. Prer., SOC 1110, SOC 3150, or SOC 3250.

SOC 5640 - Power and Privilege

3 Credits
Course focuses on privilege, power, and the intersections of race, class, gender and sexuality. Focusing on privilege provides US with a fuller understanding of oppression and the dynamics of inequality. This course explores the complicated ways in which race, gender, class and sexuality interact and impinge upon each other in our own lives, the lives of others, across the U.S. culture and social institutions. Open only to graduate students and unclassified students with a bachelors degree.

SOC 5680 - Inequality USA

4 Credits
This course identifies how inequality is defined, measured, studied, and understood by geographers. Students will analyze quantitative and qualitative data sources to explain inequality in the U.S., and will conduct research identifying spaces of inequality in Colorado Springs. Meets with SOC 4680, WEST 4680, GES 4680, GES 5680.

SOC 5700 - Global Feminisms

3 Credits
Identifies broad trends and changes in feminist interpretations and approaches to sexual politics, race, migration, religion, geopolitics, and globalization. a global look at women's oppression and strategies of resisting subordination through various transnational feminist praxis, theory, and case studies. Meets with SOC 4700 and WEST 4700.

SOC 5705 - Global Feminisms - Service Learning Component

1 Credit
This service-learning component is taken in conjunction with SOC 5700 - Global Feminisms. This component requires the student to volunteer as an intern in a community organization related to the substantive content of SOC 5700.

SOC 5830 - Race and Ethnic Relations

1-3 Credits
A rigorous examination of macro-level theory in race/ethnic relations and its applicability both to race/ethnic relations case studies drawn from a number of societies and to the general topics of ethnic communities, protest and change, assimilation, prejudice-discrimination, and contemporary social policies.

SOC 5920 - Spiked: Spike Lee's Cinema

3 Credits
This course analyzes ways in which social identities are represented in American film, particularly through the cinematic lenses of director, producer, actor, and activist Spike Lee. Although this course will focus particularly on the interosculating representations presented by Lee, we will also contextualize his representations as elements of greater American filmic narratives around race, class, sexuality, and so forth gleaned from a variety of perspectives. Approved for LAS Humanities area and Cultural Diversity requirements. Prer., WEST 1010 (formerly WEST 2010). Meets with WEST 4920, SOC 4920.

SOC 5940 - Sociology of Law

3 Credits
Analysis of legal procedures from a sociological perspective, focusing on theoretical development and critical analysis.

SOC 5950 - Criminology

3 Credits
Theories of causation of crime as a social phenomenon. Theories of rehabilitation and disposition of cases. Meets with CJ 5120.

SOC 5960 - Juvenile Delinquency

3 Credits
Factors involved in delinquent behavior. Problems of adjustments of delinquents and factors in treatment and post-treatment and adjustment. Meets with SOC 4960.

SOC 7000 - Masters Thesis

1-6 Credits
Masters Thesis

SOC 9400 - Independent Study in Sociology: Undergraduate

1-4 Credits
In order to obtain an independent study course, the student must submit a written description of learning objectives and procedures to a full-time faculty member. Each faculty member may supervise a maximum of three students per semester. This course is specifically to allow individual students to study intensively in areas which are within the fields of specialization of faculty members but not offered as a regular part of the course curriculum. Offered annually.

SOC 9500 - Independent Study in Sociology: Graduate.

1-3 Credits
In order to obtain an independent study course, the student must submit a written description of learning objectives and procedures to a full-time faculty member. Each faculty member may supervise a maximum of three students per semester. This course specifically allows individual students to study intensively in areas which are within the fields of specialization of faculty members but not offered as a regular part of the course curriculum.

SOC 9990 - Candidate for Degree

0 Credits
Candidate for Degree

SPAN - Spanish

SPAN 1010 - Beginning Spanish I

5 Credits
Essentials of Spanish, oral-aural skills stressed with additional reading, writing, and grammar.

SPAN 1020 - Beginning Spanish II

5 Credits
Essentials of Spanish continued. Additional oral-aural skills practice with increased grammar, reading, and writing. Prer., Span 1010 or equivalent.

SPAN 2110 - Intermediate Spanish I

5 Credits
Spanish at the intermediate level with concentration on conversation, grammar, vocabulary, culture, and civilization or literature at that level. Prer., SPAN 1020 or equivalent.

SPAN 2120 - Intermediate Spanish II

3 Credits
An intermediate Spanish course continuing conversational usage and cultural integration utilizing contemporary materials, newspapers, etc. Prer., SPAN 2110 or equivalent.

SPAN 2130 - Applied Conversation

3 Credits
Conversation at the intermediate level on contemporary topics in Spanish culture. Prer., SPAN 1020 or equivalent.

SPAN 2920 - Spanish for Health Professionals

3 Credits
The vocabulary and usage of the world of health care. Applied language and cultural values of Latino cultures. Prer., SPAN 2120 or equivalent.

SPAN 2930 - Business Spanish

3 Credits
The vocabulary and usage of the world of finance and commerce. Applied business correspondence, marketing and accounting terminologies. Prer., SPAN 2120 or equivalent.

SPAN 3000 - Spanish Grammar & Composition

3 Credits
Designed to review extensively the functional application of modern Spanish. Presents a skill-development approach featuring graded compositions and oral practice based on material encountered in informal situations. Prer., SPAN 2120. Coreq., SPAN 3010 strongly advised.

SPAN 3010 - Advanced Spanish Conversation and Composition

3 Credits
Practice in conversation and development of skills in composition with emphasis in oral presentations and formal compositions, including academic essays. Prer., SPAN 2120. Coreq., SPAN 3000 strongly advised.

SPAN 3100 - Literary Analysis

3 Credits
Students read different genres - narrative, essay, short story, drama and poetry to facilitate the acquisition of critical skills in the identification of basic ideological and formalistic issues within texts being studied. Prer., SPAN 3000 and SPAN 3010.

SPAN 3190 - Intro to Hispanic Literature I

3 Credits
Introduction to literary form and expression through selected masterpieces of Peninsular literatures. Course is only offered one semester per year, generally in the spring. Prer., SPAN 3100 or equivalent.

SPAN 3200 - Intro to Hispanic Literature II

3 Credits
Introduction to literary form and expression through selected masterpieces of Latin American literatures. Course is only offered one semester per year, generally in the fall. Prer., SPAN 3100 or equivalent.

SPAN 3230 - Applied Conversation

1 Credit
Conversation at the advanced level on contemporary topics in Spanish culture. Prer., SPAN 2120 or equivalent.

SPAN 3250 - Hispanic Culture Studies

3 Credits
Cultural history of Spain. Readings of selected masterworks with discussion about art, music, architecture, folklore, and customs. Taught in Spanish. Course is only offered one semester per year, generally in the fall. Prer., SPAN 3000.

SPAN 3370 - The Latin American Essay

3 Credits
Readings from essay. Writings from the conquest to contemporary society including Las Casas, Sarmiento, Hostos, Sierra, Gonzalez, Prada, Rodo, Paz. Prer., SPAN 3100.

SPAN 3490 - Internship in Applied Spanish

1-3 Credits
The Language and Culture department will offer to advanced language students the opportunity to apply their knowledge in settings such as schools, social support agencies, etc. May be repeated up to three times for credit. Prer., Departmental permission.

SPAN 3690 - Hispanic Culture Through Film

3 Credits
The cinematic manifestations of the richness and the variety of Hispanic culture as expressed through an artistic and humanistic vision. May be repeated once provided the topic is different. Approved for LAS Humanities area requirement and Global Awareness requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures. Prer., SPAN 3000 for Spanish majors/minors only. Meets with FCS 3690 and FILM 3690.

SPAN 3910 - Spanish Theatre Workshop

1-3 Credits
A theatre practicum in Spanish stressing proper diction, articulation, and pronunciation as well as active involvement in public presentation of selected dramatic writers. Prer., SPAN 3100.

SPAN 3920 - Adv Spanish for Health Care

3 Credits
Advanced study of the vocabulary, language and cultural values of Latino cultures for the health care professional. Prer., SPAN 2920.

SPAN 3930 - Advanced Business Spanish

3 Credits
Advanced study of the vocabulary and usage of the world of business and commerce. Prer., SPAN 2930.

SPAN 4010 - Adv Spanish Communication I

3 Credits
Designed to improve written expression Spanish. Detailed study of the nuances of grammar. Attention given to points most difficult for students, to composition skills, and to various styles of written Spanish. Prer., SPAN 3020 or permission of instructor.

SPAN 4110 - Women in Hispanic Literature

3 Credits
An overview of Hispanic women as seen by Hispanic male and female writers; may be included as part of women's studies program. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5110.

SPAN 4150 - Masterpieces of Spanish Literature

3 Credits
Masterworks of major Spanish authors: readings and discussions. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5150.

SPAN 4210 - Hispanic Heritage of Colorado

3 Credits
The study of the history and traditions of Hispanics in the state from the 16th century to the present. Approved for LAS Humanities area requirement and Cultural Diversity requirement. Meets with FCS 4210.

SPAN 4250 - The Cultural Heritage in Latin America

3 Credits
The historical, cultural and political currents in Latin America beginning with Pre-Colombian indigenous cultures and continuing to the present. Prer., SPAN 3000. Meets with SPAN 5250.

SPAN 4253 - Almodovar

3 Credits
Course focuses on the evolution of the films of Spanish filmaker Pedro Almodovar. The manner in which this innovative auteur has treated a variety of conceptual and formal issues will be examined, as will his vision of the cultural and social transformation of Spanish society from the early 1980s to the present. Meets with FILM 4253 and FCS 4253.

SPAN 4280 - Generation of 1898

3 Credits
Reading and discussion of selected works by Unamuno, Barojo, Valleinclan, Azorin, and A. Machado. Study of the significance of this celebrated generation's contribution to Hispanic literature and thought. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5280.

SPAN 4360 - Hispanic Short Story

3 Credits
Readings and discussions of first-rate Hispanic short stories with which to build reading and verbal skills on an advanced level. Provides a wide variety of language learning experiences. Prer., SPAN 3000, SPAN 3010, SPAN 3100. Meets with SPAN 5360.

SPAN 4400 - Topics in Contemporary Literature

3 Credits
Selected topics in Spanish or Latin American literature. Contents will vary according to the instructor and the research interests of the class. Possible themes include post World War II novelists, the boom, post-Franco Spanish drama and Cuban American writers. May be repeated once for credit if the topic is different. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5400.

SPAN 4420 - Hispanic/Latino US Literature

3 Credits
Study of the works of the leading Chicano/a, Puerto Rican, and Cuban-American writers in the United States. Taught in Spanish. Approved for LAS Cultural Diversity requirement. Prer., SPAN 3100 or consent of instructor. Meets with SPAN 5420.

SPAN 4430 - Hispanic US Drama

3 Credits
Theatrical work of Chicano/a, Puerto Rican and U.S. Cuban writers including Valdes, Pinero, Munoz and Morton. Taught in Spanish. Prer., SPAN 3100. Meets with SPAN 5430.

SPAN 4440 - Hispanic, Chicano/a, and Mexican-American Literature

3 Credits
The literary manifestations of individuals of Mexican origin in theater, prose, and poetry. Taught in Spanish. Prer., SPAN 3100. Meets with SPAN 5440 and WEST 4440.

SPAN 4450 - US Cuban Literature

3 Credits
Since 1960, and even in the 19th century, Cubans migrated to the U.S. and began to write poems, essays, fiction, and theater; a study of these works. Taught in Spanish. Prer., SPAN 3100. Meets with SPAN 5450.

SPAN 4460 - Studies in U.S.-Mexico Border Literature

3 Credits
The literary manifestation of U.S-Mexico border writers, including prose, poetry, essays and performance art. Some of the texts will be in Spanish, some will be in English. Taught in Spanish. Prer., SPAN 3100 or consent of instructor. Meets with FCS 4460 and SPAN 5460.

SPAN 4510 - Contemporary Hispanic American Literature

3 Credits
Reading and discussion of contemporary Hispanic American masterworks. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5510.

SPAN 4610 - Latin American Authors

3 Credits
Reading and discussion of selected material. Prer., SPAN 3100.

SPAN 4620 - Don Quijote I

3 Credits
Background and study of the first part of Cervantes' Don Quijote (1605); the 52 chapters. Prer., SPAN 3100.

SPAN 4630 - Don Quijote II

3 Credits
Background and study of the second part of Cervantes' Don Quijote (1615). Prer., SPAN 4620 or its equivalency.

SPAN 4650 - Spanish or Latin American or Chicano Authors

1 Credit
Offered as three five-week mini-courses (each course carrying 1 credit). This course sequence will deal with three engaging writers of either Spanish or Latin American or Chicano masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult Course Search on the UCCS website or the MyUCCS Portal for specific topics. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5650.

SPAN 4660 - Spanish Authors-Poetry

1 Credit
Offered as three five-week mini-courses (each course carrying one credit). This course sequence will deal with three engaging writers of either Spanish or Latin American or Chicano masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult Course Search on the UCCS website or the MyUCCS Portal for specific topics. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5660.

SPAN 4670 - Spanish Authors-Drama

1 Credit
Offered as three five-week mini-courses (each course carrying 1 credit). This course sequence will deal with three engaging writers of either Spanish or Latin American or Chicano

masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult Course Search on the UCCS website or the MyUCCS Portal for specific topics. Prer., SPAN 3100 or its equivalency. Meets with SPAN 5670.

SPAN 4970 - Senior Seminar: Spanish

3 Credits
Required capstone course for graduate with a major in Spanish. Monographic study of a period, author, genre or topic. Offered once per year in the spring semester. Approved for Compass Curriculum requirement: Summit. Prer., Five previous literature courses (SPAN 3190, SPAN 3200, and three others). Consent of instructor. Senior status only.

SPAN 5110 - Women in Hispanic Literature

3 Credits
Prer., Graduate status. Meets with SPAN 4110.

SPAN 5150 - Masterpieces of Spanish Literature

3 Credits
Masterworks of major Spanish authors: readings and discussions. Prer., graduate status. Meets with SPAN 4150.

SPAN 5160 - Masterpieces of Hispanic American Literature

3 Credits
Advanced work beyond the SPAN 4160 course. Prer., Graduate status. Meets with SPAN 4160.

SPAN 5250 - Cultural Heritage in Latin America

3 Credits
The historical, cultural and political currents in Latin America beginning with Pre-Columbian indigenous cultures and continuing to the present. Prer., Graduate status. Meets with SPAN 4250.

SPAN 5280 - Generation of 1898

3 Credits
Reading and discussion of selected works by Unamuno, Baroja, Valleinclan, Azorin and A. Machado. Study of the significance of this celebrated generation's contribution to Hispanic literature and thought. Prer., Graduate status. Meets with SPAN 4280.

SPAN 5360 - Hispanic Short Story

3 Credits
Readings and discussions of first-rate Hispanic shortstories with which to build reading and verbal skills on an advanced level. Provides a wide variety of language learning experiences. Prer., SPAN 3000, SPAN 3010, SPAN 3100. Meets with SPAN 4360.

SPAN 5400 - Topics in Contemporary Literature

3 Credits
Selected topics in Spanish or Latin American literature. Contents will vary according to the instructor and the research interests of the class. Possible themes include post World War II novelists, the boom, post-Franco Spanish drama and Cuban American writers. May be repeated once for credit if the topic is different. Additional work will be required beyond the requirements for SPAN 4400. Preq., Graduate status. Meets with SPAN 4400.

SPAN 5410 - Modernism

3 Credits
Study of Spanish-American literary movement of late 19th century. Additional work required beyond the SPAN 4410 level. Prer., Graduate status.

SPAN 5420 - Hispanic/Latino US Literature

3 Credits
Study of the works of the leading Chicano/a, Puerto Rican, and Cuban-American writers in the United States. Advanced work beyond SPAN 4420. Taught in Spanish. Prer., Graduate status. Meets with SPAN 4420.

SPAN 5430 - Hispanic US Drama

3 Credits
Theatrical work of Chicano/a, Puerto Rican, and U.S. Cuban writers including Valdes, Pinero, Munoz, and Morton. Taught in Spanish. Prer., Graduate status. Meets with SPAN 4430.

SPAN 5440 - Hispanic, Chicano/a, and Mexican-American Literature

3 Credits
The literary manifestations of individuals of Mexican origin in theater, prose, and poetry. Taught in Spanish. Prer., Graduate status. Meets with SPAN 4440 and WEST 4440.

SPAN 5450 - U S Cuban Literature

3 Credits
Since 1960, and even in the 19th century, Cubans migrated to the U.S. and began to write poems, essays, fiction, and theater; a study of these works. Taught in Spanish. Prer., Graduate Status. Meets with SPAN 4450.

SPAN 5460 - Studies in U.S.-Mexico Border Literature

3 Credits
The literary manifestation of U.S-Mexico border writers, including prose, poetry, essays and performance art. Some of the texts will be in Spanish, some will be in English. Taught in Spanish. Prer., SPAN 3100 or consent of instructor. Meets with F CS 4460 and SPAN 4460.

SPAN 5510 - Contemporary Hispanic American Literature

3 Credits
Advanced work beyond the SPAN 4510 course. Prer., Graduate status. Meets with SPAN 4510.

SPAN 5610 - Latin American Authors

3 Credits
Three Latin American authors: Luisa Valenzuela, Isabel Aslant, and Marta Trapa. Reading and discussion of selected material. Advanced work beyond SPAN 4610 course. Prer., Graduate status.

SPAN 5620 - Don Quijote I

3 Credits
Background and study of the first part of Cervantes' Don Quijote (1605) the 52 chapters. Prer., Graduate status.

SPAN 5630 - Don Quijote II

3 Credits
Background and study of the second part of Cervantes' Don Quijote (1615). Prer., Graduate status.

SPAN 5650 - Spanish or Latin American or Chicano Authors

1 Credit
Offered as three five-week minicourses (each course carrying 1 credit). Course sequence will deal with three writers of either Spanish, Latin American, or Chicano masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult

Course Search on the UCCS website or the MyUCCS Portal for specific topics. Advanced work beyond SPAN 4650, 4660, 4670 level. Prer., Graduate status. Meets with SPAN 4650.

SPAN 5660 - Spanish Authors: Poetry

1 Credit
Offered as five three-week minicourses (each course carrying 1 credit). Course sequence will deal with three writers of either Spanish or Latin American or Chicano masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult Course Search on the UCCS website or the MyUCCS Portal for specific topics. Prer., Graduate status. Meets with SPAN 4660.

SPAN 5670 - Spanish Authors: Drama

1 Credit
Offered as three five week minicourses (each course carrying 1 credit). Course sequence will deal with three writers of either Spanish or Latin American or Chicano masterpieces. Students are encouraged to take the entire three-course sequence, which will be offered during the regular semester in successive segments during the same day/time block. Consult Course Search on the UCCS website or the MyUCCS Portal for specific topics. Advanced work beyond the SPAN 4650, 4660, 4670 level. Prer., Graduate status. Meets with SPAN 4670.

SPAN 9200 - Independent Study in Spanish

1-4 Credits
May be repeated up to three times for credit. Prer., Consent of instructor.

SPAN 9300 - Independent Study in Spanish

1-4 Credits
May be repeated up to three times for credit. Prer., Consent of instructor.

SPAN 9400 - Independent Study in Spanish

1-4 Credits
Independent work for undergraduates only. By special arrangement with the faculty. Only for students presenting strong Spanish preparation. May be repeated up to three times for credit. Prer., Consent of instructor.

SPAN 9500 - Independent Study in Spanish: Graduate

1-4 Credits
Independent work for graduate students only, by special arrangement with the faculty. May be repeated up to three times for credit. Prer., Graduate status.

SPCE - Space Operations

SPCE 5005 - Engineering Analysis for Space Applications

3 Credits
Specialized mathematical topics related to space systems. Course will include elements of: linear algebra, coordinate transformation, kinematics and dynamics, complex number, probability, numerical methods, introduction to MATLAB, ordinary differential equations, difference equations, and introduction to estimation theory; and will also integrate essential math concepts directly into examples drawn from space applications. Prer., MATH 1350, MATH 3130, or equivalents. Graduate students only.

SPCE 5025 - Fundamentals of Astronautics

3 Credits
Introduces the fundamental principles of astrodynamics applied to satellite motion. Includes orbital mechanics, coordinate systems, two-body problems, orbit determination, and orbital maneuvers. Prer., SPCE 5005. Graduate students only.

SPCE 5045 - Space Mission Analysis

3 Credits
A survey of various spacecraft bus subsystems and tradeoffs to satisfy space mission requirements. Spacecraft subsystems considered include communications, data handling, control, power, thermal, structures, sensors, and mechanisms. Prer., SPCE 5005, SPCE 5025. Graduate students only.

SPCE 5065 - Spacecraft Environment Interactions

3 Credits
Introduction to the properties and effects of the environment in which spacecraft and astronauts must operate. Intensive coverage is given to the earth-sun-lunar system. Topics include: earth's environment ionosphere, atmospheric chemistry, radiation belts, magnetosphere, aurora, geomagnetic storms, celestial background, and bio-astronautic effects. Prer., Graduate students only; SPCE 5005, SPCE 5025.

SPCE 5085 - Space Communications

3 Credits
Fundamentals of digital data transmission; noise characterizations and calculations; communications link calculations; error probabilities for basic digital modulations schemes - BPSK, QPSK, OQPSK, MSK, serial MSK; system degradations, carrier and clock recovery; multiple access techniques - FDMA, TDMA, CDMA; packet satellite networks; "orbital" parameters; comparison of satellite communication systems with fiber optic links. Prer., PES 1110, MATH 1350 or equivalent. Graduate students only.

SPCE 5105 - Remote Sensing in Space

3 Credits
Introduction to the fundamental technologies associated with various remote sensing techniques: optical, infrared, microwave, and nuclear sensors and imaging systems. Background effects and effects of propagation through the atmosphere are included as well as tradeoffs of systems and platform capabilities. Prer., SPCE 5005, SPCE 5025. Graduate students only.

SPCE 5125 - Spacecraft Dynamics and Control

3 Credits
Introduces rotational dynamics and control, focusing on spacecraft attitude stabilization. Includes: Euler's EOM, disturbance torques, passive spin, gravity gradient, and active attitude stabilization; PID control, stability criteria, root locus, frequency response, bode plots, relative stability, and practical design issues. Prer., SPCE 5005, SPCE 5025. Graduate students only.

SPCE 5595 - Space Mission Design

3 Credits
Capstone project course to be taken at or near the end of the degree program. Students will be asked to bring together their knowledge of space operations to configure and design a spacecraft bus to fulfill defined mission requirements. Prer., SPCE 5005, SPCE 5025, SPCE 5045. Graduate students only.

SPCE 5605 - Engineering Simulation

3 Credits
Designed for the builder of mathematical models, analytical model users, and engineers who use computer simulations in the exercise of their disciplines. The course covers the fundamentals of mathematical modeling in the

context of dynamic, optimizing, and stochastic models, and includes an examination of discrete-event computer simulations. Prer., SPCE 5005. Graduate students only. Meets with SYSE 5350.

SPCE 5625 - Global Positioning System (GPS)

3 Credits
A graduate level treatment of Global Positioning System satellite-based navigation with applications on earth and near-space. Effects of atmospheric propagation will be included. Surveys of usage for both military and civilian applications. Prer., SPCE 5005. Graduate students only.

SPCE 5645 - Space Policy

3 Credits
An overview of space policies and strategies, both domestic and international. The course provides students with a perspective of how these policies and strategies have evolved over time. Emphasis will be on understanding current national security strategy, military space-related doctrines, domestic laws and policies, and international laws, treaties, and agreements.Prer., Graduate students only.

SPCE 5665 - Systems Engineering Processes

3 Credits
Focus on the systems engineering life cycle process and the derivation of engineering/technical requirements from customer/operational requirements. Analytical tools which support fielding of effective systems consistent with developed requirements will be covered. Major emphasis is placed on systems reliability and life-cycle costing. Prer., Graduate students only. Meets with SYSE 5110.

SPCE 5685 - Enterprise/Systems Architecture for Space Systems: A Technical Course

3 Credits
This course focuses on structured decision-making across the space systems life cycle. Emphasis is to identify, evaluate and use formal architecture to structure shape information for strategic, engineering and operating decisions and programs. The role of technical standards is examined. Prer., Graduate students only.

SPED - Special Education

SPED 3000 - dis/Ability Studies in Education

3 Credits
An introduction to how disability, race, class, sexual orientation, and gender are defined, represented, and acted upon in schools today. Students will examine school as a social/political environment where the meaning of disability can be understood in democratic ways. Meets with SPED 5000.

SPED 3001 - Introduction to Special Education

3 Credits
This course provides an overview of Special Education. The course emphasizes the history of special education; legislation; implementation of Idea, current issues; and a survey of exceptionalities. This course is designed to support the Performance-based Standards for Colorado teachers. Thirty (30) hours of field experience required. Prer., Background check, fingerprinting. Meets with Sped 5001.

SPED 3002 - Professional Seminar in Special Education

3 Credits
Familiarizes students with professional issues in special education. The areas include: (a) professional dispositions, (b) student diversity, (c) instructional/assistive technology, and (d) professional writing. Teachers must understand academic and professional standards and their relationship to the work environment. Prer., Background check; fingerprinting. Meets with SPED 5002.

SPED 3003 - Classroom and Instructional Management

3 Credits
This course will examine evidence-based approaches for providing classroom and instructional management. The emphasis is on (a) effective instructional procedures, (b) individual and classroom behavior management strategies, and (c) principles of applied behavior analysis. Fifteen (15) hours of field experience is required. Meets with Sped 5003.

SPED 3004 - Self-Determination and Transition

3 Credits
This course presents self-determination and development, implementation, and evaluation of self-management instructional programs for students. Service delivery models, issues, and intervention approaches are examined in light of efficacy research. Emphasis is upon using self-management and learning strategies to facilitate self-determination. Fifteen (15) hours of field experience is required. Prer., SPED 4021/5021, SPED 4025/5025. Coreq., CURR 5304 or SPED 4013, and SPED 4010/5010. Meets with SPED 5004.

SPED 4010 - Multisensory Structured Language Education

3 Credits
Introduces the content and skills of instruction for students with learning disabilities. Includes research-based strategies in phonemic awareness, phonics, spelling, reading fluency, vocabulary andcomprehension. Students work with a tutorial student and evaluate teaching skills through small groupcoaching sessions. Prer., Praxis or Place Elementary Content Test. Meets with Sped 5010.

SPED 4011 - Assessment and Instructional Monitoring

3 Credits
This course examines evaluation concepts and assessments attending to curriculum-based individual-referenced measures, standardized assessments, and large-scale criterion-referenced tests characteristic of most statewide programs. Emphasis will be placed on aligning curriculum, instruction, and assessment. Fifteen (15) hours of field experience is required. Prer., SPED 3001 and SPED 3003. Meets with SPED 5011.

SPED 4012 - Differentiated Instruction

3 Credits
Builds upon material covered in Multisensory Language (SPED 4010/5010). Topics include systematic, differentiated instruction in syllable types, morphology, prefixes, suffixes, Latin Roots, and Greek combining forms. Students work with a tutorial student and evaluate teaching skills through small group coaching sessions. Prer., SPED 4010/5010. Meets with SPED 5012.

SPED 4013 - Direct Instruction Practicum

2 Credits
This course is for the teacher-in-training to learn and practice effective instructional teaching behaviors (e.g., pacing, transitions, data collection, correction procedures, organization of classroom materials) in school settings and demonstrate proficiency in the planning, delivering, and evaluating reading instruction. Field experience is required. Prer., SPED 4010.

SPED 4020 - Significant Support Needs

3 Credits
This course presents the development, implementation,and evaluation of instructional programs for students with severe cognitive and physical needs at the elementary and secondary levels. Service delivery models, issues, and intervention approaches are examined in light of efficacy research. Thirty (30) hours of field experience is required. Prer., SPED 3000/5000, SPED 3001/5001, CURR 4170/5170. Coreq., SPED 4030/5030, TED 4570/5570. Meets with SPED 5020.

SPED 4021 - Designing Positive Classroom Environments

3 Credits
This course examines positive behavior support from philosophical, theoretical, individual, and systemic perspectives. Emphasizes characteristics of students with challenging behavior, functional behavioral assessment, school-wide, classroom, and non-classroom PBS models and interventions, and models for family and community positive behavioral support. Twenty (20) hours of field experience is required. Prer., SPED 4020/5020, SPED 4030/5030, TED 4570/5570; Coreq., SPED 4025/5025. Meets with SPED 5021.

SPED 4022 - Consultation and Collaboration

3 Credits
This course critically analyzes issues, research, implementation approaches, and recommended practices for employing collaborative models to support learning across diverse school and community settings. Students will access and evaluate community resources, develop and maintain interdisciplinary and interagency partnerships. Twenty (20) hours of field experience is required. Prer., SPED 3004/5004; SPED 4010/5010; SPED 4013 or CURR 5304. Coreq., SPED 4031/5031. Meets with SPED 5022.

SPED 4025 - Fieldwork in Inclusive Classrooms

3 Credits
Students will work in general education settings to include students with disabilities. Assignments and experiences will focus on providing access to the general education curriculum and connecting students with disabilities to their peers. Prer., SPED 4020/5020, SPED 4030/5030, TED 4570/5570; Coreq., SPED 4021/5021. Meets with SPED 5025.

SPED 4030 - Elementary/Secondary Internship

3 Credits
Students are required to apply and integrate research-based practices in an educational setting. Student teachers will work with a wide range of students with special needs in programs that utilize practices congruent with the UCCS Special Education Program. This internship must be completed at the opposite K-12 age range from SPED 4031/5031. Prer., SPED 3000/5000, SPED 3001/5001, CURR 4170/5170. Coreq., SPED 4020/5020, TED 4570/5570. Meets with SPED 5030.

SPED 4031 - Elementary/Secondary Student Teaching and Seminar

4-6 Credits
Students are required to apply and integrate research-based practices in an educational setting. Student teachers will work with a wide range of students with special needs in programs that utilize practices congruent with the UCCS Special Education Program. Prer., SPED 3004/5004; SPED 4010/5010; SPED 4013 or CURR 5304. Coreq., SPED 4022/5022. PLACE Special Education Generalist test #20. Meets with SPED 5031.

SPED 4430 - TeachSpecialEd.com: Foundations in Special Education

3 Credits
This course places the history of special education in context of current principles and practices. Presents contributions of advocacy groups relative to legislative accomplishments and addresses important issues, federal laws, and resources for beginning teachers in determining their legal responsibilities. Meets with CURR 4060.

SPED 4440 - TeachSpecialEd.com: Development and Characteristics of Learners with Exceptional Learning Needs

3 Credits
Focuses on individuals with high-incidence disabilities, including mild mental retardation, learning disabilities, ADHD, and behavioral disorders. Teachers are also introduced to the attributes of students from low-incidence groups. Meets with CURR 4061.

SPED 4460 - TeachSpecialEd.com: Assessment for Instructional Planning and Decision Making

3 Credits
Foundations of assessment are addressed from the perspective of instructional planning and decision making. Legal and ethical principles are covered along with the processes of screening, pre-referral, referral and classifications. Attention is given to assessments in LEP development. Meets with CURR 4062.

SPED 4470 - TeachSpecialEd.com. Instructional Strategies - Creating Environments that Promote Learning

3 Credits
Development of positive learning environments as a strategy for enhancing teaching and learning. Preventive measures in the context of approaches to building positive behavior support. Intervention strategies for problem behavior, along with techniques for promoting social interactions andbehaviors. Meets with CURR 4063.

SPED 4480 - Teachspecialed.com. Instructional Strategies: Teaching for Results

3 Credits
Planning for effective instruction is the central focus of this course. Instructional planning, organizing and designing instruction, student outcomes instructional principles, and assessing outcomes of effective instruction. Curriculum-based assessment is covered along with the communication of student outcomes. Meets with CURR 4064.

SPED 4560 - Teachspecialed.com. Instructional Strategies: Improving Basic Reading Skills.

3 Credits
Emphasizes teaching beginning reading and developing reading fluency. Is applicable to teaching students with exceptional learning needs in varied instructional settings. Meets with CURR 4065.

SPED 4570 - Teachspecialed.com: Instructional Strategies: Improving Reading Comprehension

3 Credits
Provides an overview of reading comprehension with emphasis on teaching students with exceptional learning needs. Attention is given to building a knowledge base and analyzing text to enable comprehension skills and teaching comprehension strategies. Meets with CURR 4066.

SPED 4580 - Teachspecialed.com: Language and Communication in Diverse Learners

3 Credits
Places the needs of exceptional learners in the larger context of cultural differences and diversity with a focus on language and communication. Language development and communication styles are covered. Teaching second language learners. Augmentative,alternative and assistive communication development is addressed. Meets with CURR 4067.

SPED 4860 - Teachspecialed.com: Collaboration and Instructional Planning in the Individual EducP

3 Credits
Emphasizes developing standards-based Ieps in accordance with Idea requirements. Introduces modelsof collaboration and highlights developing collaboration skills to enhance the effectiveness of the beginning teacher in development and implementation of Ieps. Meets with CURR 4068.

SPED 4870 - Teachspecialed.com: Professional and Ethical Practices

3 Credits
Focuses on the ethical standards and principles of the profession. Ethical issues related to assessment, decision making, instruction, working with agencies, and families/guardians of children with exceptional learning needs are covered. Meets with CURR 4069.

SPED 4910 - Workshop

1-4 Credits
Designed to allow specific topics and issues to be explored in-depth. Prer., Permission of instructor.

SPED 4950 - Summer Institutes

2-3 Credits
Provides participants with a variety of training opportunities that specifically relate to programs, policies, and procedures for working with at-risk students. Participants will have multiple opportunities to reflect on knowledge learned and develop practical application plans. Meets with SPED 5950.

SPED 5000 - dis/Ability Studies in Education

3 Credits
An introduction to how disability, race, class, sexual orientation, and gender are defined, represented, and acted upon in schools today. Students will examine school as a social/political environment where the meaning of disability can be understood in democratic ways. Meets with SPED 3000.

SPED 5001 - Introduction to Special Education

3 Credits
This course provides an overview of Special Education. The course emphasizes the history of special education; legislation; implementation of Idea, current issues; and a survey of exceptionalities. This course is designed to support the Performance- based Standards for Colorado teachers. Thirty (30) hours of field experience required. Prer., Background check, fingerprinting. Meets with SPED 3001.

SPED 5002 - Professional Seminar in Special Education

3 Credits
Familiarizes students with professional issues in special education. The areas include: (a) professional dispositions, (b) student diversity, (c) instructional/assistive technology, and (d) professional writing. Teachers must understand academic and professional standards and their relationship to the work environment. Prer., Background check; fingerprinting. Meets with SPED 3002.

SPED 5003 - Classroom and Instructional Management

3 Credits
This course will examine evidence-based approaches for providing classroom and instructional management. The emphasis is on (a) effective instructional procedure, (b) individual and classroom behavior management strategies, and (c) principles of applied behavior analysis. Fifteen (15) hours of field experience is required. Meets with SPED 3003.

SPED 5004 - Self-Determination and Transition

3 Credits
This course presents self-determination and development, implementation, and evaluation of self-management instructional programs for students. Service delivery models, issues, and intervention approaches are examined in light of efficacy research. Emphasis is upon using self-management and learning strategies to facilitate self-determination. Fifteen (15) hours of field experience is required. Prer., SPED 4021/5021, SPED 4025/5025. Coreq., CURR 5304 or SPED 4013, and SPED 4010/5010. Meets with SPED 3004.

SPED 5010 - Multisensory Structured Language Education

3 Credits
Introduces the content and skills of instruction for students with learning disabilities. Includes research-based strategies in phonemic awareness, phonics, spelling, reading fluency, vocabulary and comprehension. Students work with a tutorial student and evaluate teaching skills through small group coaching sessions. Prer., Praxis or Place Elementary Content Test. Meets with SPED 4010.

SPED 5011 - Assessment and Instructional Monitoring

3 Credits
This course examines evaluation concepts and assessments attending to curriculum-based individual-referenced measures, standardized assessments, and large-scale criterion-referenced tests characteristic of most statewide programs. Emphasis will be placed on aligning curriculum, instruction, and assessment. Fifteen (15) hours of field experience is required. Prer., SPED 5001 and SPED 5003. Meets with SPED 4011.

SPED 5012 - Differentiated Instruction

3 Credits
Builds upon material covered in Multisensory Language(SPED 4010/5010). Topics include systematic, differentiated instruction in syllable types, morphology, prefixes, suffixes, Latin Roots, and Greek combining forms. Students work with a tutorial student and evaluate teaching skills through small group coaching sessions. Prer., SPED 4010/5010. Meets with SPED 4012.

SPED 5020 - Significant Support Needs

3 Credits
This course presents the development, implementation,and evaluation of instructional programs for students with severe cognitive and physical needs at the elementary and secondary levels. Service delivery models, issues, and intervention approaches are examined in light of efficacy research. Thirty (30) hours of field experience is required. Prer., SPED 3000/5000, SPED 3001/5001, CURR 4170/5170. Coreq., SPED 4030/5030, TED 4570/5570. Meets with SPED 4020.

SPED 5021 - Designing Positive Classroom Environments

3 Credits
This course examines positive behavior support from philosophical, theoretical, individual, and systemic perspectives. Emphasizes characteristics of students with challenging behavior, functional behavioral assessment, school-wide, classroom, and non-classroom PBS models and interventions, and models for family and community positive behavioral support. Twenty (20) hours of field experience is required. Prer., SPED 4020/5020, SPED 4030/5030, TED 4570/5570; Coreq., SPED 4025/5025. Meets with SPED 4021.

SPED 5022 - Consultation and Collaboration

3 Credits
This course critically analyzes issues, research, implementation approaches, and recommended practices for employing collaborative models to support learning across diverse school and community settings. Students will access and evaluate community resources, develop and maintain interdisciplinary and interagency partnerships. Twenty (20) hours of field experience is required. Prer., SPED 3004/5004; SPED 4010/5010; SPED 4013 or CURR 5304. Coreq., SPED 4031/5031. Meets with SPED 4022.

SPED 5025 - Fieldwork in Inclusive Classrooms

3 Credits
Students will work in general education settings to include students with disabilities. Assignments and experiences will focus on providing access to the general education curriculum and connecting students with disabilities to their peers. Prer., SPED 4020/5020, SPED 4030/5030, TED 4570/5570; Coreq., SPED 4021/5021. Meets with SPED 4025.

SPED 5030 - Elementary/Secondary Internship

3 Credits
Students are required to apply and integrate research-based practices in an educational setting. Student teachers will work with a wide range of students with special needs in programs that utilize practices congruent with the UCCS Special Education Program. This internship must be completed at the opposite K-12 age range from SPED 4031/5031.Prer., SPED 3000/5000, SPED 3001/5001, CURR 4170/5170. Coreq., SPED 4020/5020, TED 4570/5570. Meets with SPED 4030.

SPED 5031 - Elementary/Secondary Student Teaching and Seminar

4-6 Credits
Students are required to apply and integrate research-based practices in an educational setting. Student teachers will work with a wide range of students with special needs in programs that utilize practices congruent with the UCCS Special Education Program. Prer., SPED 3004/5004; SPED 4010/5010; SPED 4013 or CURR 5304. Coreq., SPED 4022/5022. PLACE Special Education Generalist test #20. Meets with SPED 4031.

SPED 5090 - Applied Research Project

3 Credits
The basic premise of this seminar is that applied behavior analysis and the teacher as a researcher-scientist are integral components of an effective educational setting. Based on individual interests, students will design a research project for the purpose of evaluation interventions in their own setting. Students will (a) develop a research proposal in APA format, (b) conduct the research, and (c) submit a final research paper to the special education faculty. All papers will be evaluated by the research review committee consisting of three university faculty members. This course is required to fulfill the MA comprehensive exam requirement. Prer., LEAD 5700.

SPED 5091 - Current Topics in Special Education

3 Credits
Current issues/topics in special education related to instruction, advocacy, policy, service delivery, and training is addressed in this course. Students will investigate an area of interest based on empirical literature. Prer., SPED 5020, SPED 5030, TED 5570.

SPED 5113 - Multisensory Reading and Writing Practicum

4 Credits
This course provides clinical practicum experience teaching targeted or intensive-level reading and writing in small groups of four or fewer students using an Orton-Gillingham based curriculum. Prer., SPED 5010, SPED 5012, CURR 5410. Graduate students only.

SPED 5114 - Multisensory Reading and Writing Internship A

1 Credit
The first semester of a two-semester internship in multisensory reading and spelling instruction for students with severe reading and writing challenges, including dyslexia. Prer., SPED 5113. Graduate students only.

SPED 5115 - Multisensory Reading and Writing Internship B

2 Credits
The second semester of a two-semester internship in multisensory reading and spelling instruction for students with severe reading and writing challenges, including dyslexia. Prer., SPED 5114. Graduate students only.

SPED 5330 - Multiple Intelligence and Gifted Students

3 Credits
Focus upon the creation and development of teaching materials to assist school personnel charged with meeting the instructional needs of gifted, creative, and talented students in both regular and special education classrooms, Grades K-12. Participants will examine existing educational research to determine the most effective ways and means of instructing gifted students. They will study and evaluate existing methods and materials designed for the target population, and they will design new materials to utilize in the teaching of gifted students.

SPED 5430 - Teachspecialed.com: Foundations in Special Education

3 Credits
Places the history of special education in context of current principles and practices. Presents contributions of advocacy groups relative to legislative accomplishments, and addresses important issues, federal laws, and resources for beginning teachers in determining their legal responsibilities. Prer., Bachelor's degree or permission of instructor. Meets with CURR 5060.

SPED 5440 - Teachspecialed.com: Development and Characteristics of Learners with Exceptional Learning Needs

3 Credits
Focuses on individuals with high-incidence disabilities including mild mental retardation, learning disabilities, ADHD and behavioral disorders. Teachers are also introduced to the attributes of students from low incidences groups. Meets with CURR 5061.

SPED 5450 - Literature for Gifted Adolescents

3 Credits
Reading and evaluation of literature for gifted and talented adolescents. Emphasis is on contemporary literature, especially literature by and about female, minority and gifted and talented persons. Meets with CURR 5421.

SPED 5460 - Teachspecialed.com: Assessment for Instructional Planning and Decision Making

3 Credits
Foundations of assessment are addressed from the perspective of instructional planning and decision making. Legal and ethnical principles are covered along with the processes of screening, pre-referral, referral and classifications. Attention is given to assessments in Iep development. Meets with CURR 5062.

SPED 5470 - Teachspecialed.com: Instructional Strategies: Creating Environments that Promote Learning

3 Credits
Development of positive learning environments as a strategy for enhancing teaching and learning. Preventive measures in the context of approaches to building positive behavior support. Intervention strategies for problem behavior, along with techniques for promoting social interactions and behaviors. Meets with CURR 5063.

SPED 5480 - Teachspecialed.com: Instructional Strategies: Teaching for Results

3 Credits
Planning for effective instruction is the central focus of this course. Instructional planning, organizing, organizing and designing instruction, student outcomes, instructional principles, and assessing outcomes of effective instruction are included. Curriculum-based assessment is covered along with the communication of student outcomes. Meets with CURR 5064.

SPED 5560 - TeachSpecialEd.com: Instructional Strategies: Improving Basic Reading Skills

3 Credits
Emphasizes teaching beginning reading and developing reading fluency. Is applicable to teaching students with exceptional learning needs in varied instructional settings. Prer., Bachelor's degree or permission ofinstructor. Meets with CURR 5065.

SPED 5570 - Teachspecialed.com: Instructional Strategies: Improving Reading Comprehension

3 Credits
Provides an overview of reading comprehension, with emphasis on teaching students with exceptional learning needs. Attention given to building knowledge base, analyzing text to enable comprehension skills, and teaching comprehension strategies. Prer., Bachelor's degree or instructor'sapproval. Meets with CURR 5066.

SPED 5580 - Teachspecialed.com: Language and Communication in Diverse Learners

3 Credits
Places the needs of exceptional learners in the larger context of cultural differences and diversity with a focus on language and communication. Language development is covered and communication styles. Teaching second language learners. Augmentative, alternative, and assistive communication development is addressed. Meets with CURR 5067.

SPED 5590 - Arts for the Gifted

3 Credits
Explores a variety of arts activities for the elementary and middle grades. There will be a focus on a multifaceted approach to teaching arts within creative, stimulating environments where the gifted student can evolve and thrive. Creativity,hemisphericity, problem solving, and practical applications of visual arts, music, dance, drama, and creative writing are addressed. Meets with CURR 5210.

SPED 5600 - Teaching the Gifted and Creative Student

2-3 Credits
This introductory course explores the nature and nurture of gifted children and adolescents. Characteristics, identification, program alternatives and teaching strategies are addressed as is the history of the gifted child movement. Meets with EPSY 5250.

SPED 5610 - Curriculum Strategies for Gifted and Talented

3 Credits
Prepares participants to write challenging, effective and differential curricula for gifted learners. A variety of curriculum models and strategies will be explored. Participants will create curriculum units for gifted students in content areas of their choice. Meets with CURR 5211.

SPED 5620 - Reading and Language Arts for the Gifted

3 Credits
Explores a wide variety of reading and writing activities for gifted learners. Children's and adolescent literature, biography, independent study, creative dramatics and expository and creative writing is among the many topic areas addressed. Meets with CURR 5212.

SPED 5630 - Social Studies and Humanities for the Gifted

3 Credits
Addresses the teaching of social studies and the humanities to gifted and talented students,grades K-12. An integrated, holistic approach to social studies is emphasized. Meets with CURR 5213.

SPED 5640 - Creative Problem Solving and Future Problem Solving for Gifted Learners

3 Credits
Covers four areas: creativity, problem solving, future studies, and future problem solving. The course content will focus on both the theoretical frameworks underlying each topic, as well as concomitant teaching strategies. Meets with CURR 5220.

SPED 5690 - Supervised Practicum - Gifted/Talented Education

3 Credits
Practicum credit may be obtained through selected, supervised field placements in teaching or supervisory roles in gifted education.

SPED 5740 - Students Learning English Who have Cognitive Disabilities

1 Credit
The purpose of this course is to present a proposal for professional development modules that will train special education teachers to effectively serve the needs of English language learners with disabilities.

SPED 5860 - Teachspecialed.com: Collaboration and Instructional Planning in the Iep Process

3 Credits
Emphasizes developing standards-based Ieps in accordance with Idea requirements. Introduces models of collaboration and highlights developing collaboration skills to enhance the

effectiveness of the beginning teacher in development and implementation of Ieps. Prer., BA or instructor's approval. Meets with CURR 5068.

SPED 5870 - Teachspecialed.com: Professional and Ethical Practices

3 Credits
Focuses on the ethical standards and principles of the profession. Ethical issues related to assessment, decision making, instruction, working with agencies, and families/guardians of children with exceptional learning needs. Meets with CURR 5069.

SPED 5900 - Seminar: Current Research Issues in Gifted Education

3 Credits
Students explore contemporary research related to the identification of gifted students, programs and other related educational issues.

SPED 5910 - Workshop

1-4 Credits
Designed to allow specific topics and issues to be explored in-depth.

SPED 5920 - Advancing Reading Success

1-3 Credits
Uses "Language," 4th edition, published by Sopris West. The course presents the research base of the curriculum, an intensive review of phonemic awareness training, use of instructional techniques, and much more. Prer., Bachelor's degree.

SPED 5930 - Step Up to Writing: Basic, Practical and Helpful Writing Instruction

1-3 Credits
Participants will receive training using the Step Up to Writing curriculum published by Sopris West. This program provides training in how to organize ideas and information, writing ideas at a complex level.

SPED 5940 - Language! Professional Development Course for Reading Educators

3 Credits
Uses Language! curriculum published by Sopris West. a comprehensive intervention curriculum for students who lack age or grade level mastery in reading, writing and spelling. Participants will be trained using integrated strands that include decoding, spelling, comprehension, grammar, vocabulary, mechanics, usage, figurative language, expository and narrative writing, and literature.

SPED 5950 - Summer Institutes

2-3 Credits
The institute provides participants with a variety of training opportunities that specifically relate to programs, policies, and procedures for working with at-risk students. Participants will have multiple opportunities to reflect on knowledge learned and develop practical application plans. Prer., Bachelors degree. Meets with SPED 4950.

SPED 5960 - Writing Strategies to Improve Student Success

1 Credit
Prepares professionals to implement the Step Up to Writing 3rd Edition curriculum immediately. Presents the research base of the curriculum, an intensive review of fundamental writing strategies, use of instructional techniques, and more. Participants will be trained using integrated strands that include decoding, spelling, comprehension, grammar, vocabulary, mechanics, usage, figurative language, expository and narrative writing, and literature.

SPED 5970 - Transition Assessment and Curriculum

3 Credits
Trains and equips participants to deliver age-appropriate transition assessments to create a coordinated set of activities to assist students in making the transition from school to work. In addition, covers techniques to assess self-determination, social/emotional learning, and independent living skills as required in the federal IDEIA legislation. Prer., Bachelor's degree.

SPED 9450 - Independent Study

1-4 Credits
Independent investigation of topics of specific interest to the student and completed under the direction of a faculty member. The specifics of the investigation are a joint decision by the student and faculty member. The meeting times, expectations, and evaluations are arranged. Courses leading to licensure are seldom completed through an independent study. Prer., Permission of instructor.

SPED 9500 - Independent Study in Special Education

1-4 Credits
Independent investigation of topics of specific interest to the student and completed under the direction of a faculty member. The specifics of the investigation is a joint decision by the student and faculty member. The meeting times, expectations and evaluations are arranged. Certification and/or endorsement courses are seldom completed through an independent study.

SPED 9550 - Independent Study in Gifted and Talented Education

1-4 Credits
Independent research, study and planning in gifted education may be completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision by the student and faculty member. The meeting times, expectations and evaluations are arranged with the faculty member. Students must have written consent of the instructor.

SPED 9990 - Candidate for Degree

0 Credits
To be used only by those students who will not be registered for coursework during the semester in which the comprehensive examination for the master's degree is taken. Consent of advisor is required.

SPMG - Space Systems Management

SPMG 6190 - Systems Engineering Management

3 Credits
Introduction to the systems engineering process, project management, and engineering management to include systems engineering methods, lifecycle models, risk management, and trade-off analysis. Focus is on the role of the systems engineer throughout a project with emphasis on both technical and project management roles. Exercises and-or project used to increase understanding of concepts introduced in course. Distance MBA course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only.

SPMG 6290 - Information and Communications Systems

3 Credits
Provides students who will be involved in acquisition and operation of information and communication systems with an introduction to these systems. Topics may include: analog and digital systems, circuits, communication methods with emphasis on satellite communications, communication system components, software engineering, embedded systems, networks, and cyber security. Emphasis will be on systems used in the space industry. Distance MBA course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only. Prer., College-level physics, or instructor approval.

SPMG 6390 - Space and Space Systems

3 Credits
Basic introduction to astrodynamics and astronautical engineering. Topics include orbital elements, Kepler's Laws, launch, orbit transfer/injection, spacecraft maneuvers, and spacecraft subsystems. Distance MBA course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only. Prer., College-level algebra, trigonometry, and physics; or instructor approval.

SPMG 6490 - System Lifecycle Management

3 Credits
Provides a background in system acquisition, program management, and test and evaluation. Students will study acquisition processes and standards, cost estimating, analysis of alternatives, program planning, program management, risk management, schedule/cost management, quality assurance, pricing and procurement, test and evaluation approaches, measures of effectiveness; and measures of uncertainty and confidence. Distance MBA course. Tuition schedule differs from on-campus courses. Prer., admitted MBA students only. College-level statistics, or instructor approval.

SPMG 6590 - Space Policy

3 Credits
Provides students an overview of space policies and strategies, both domestic and international. The course provides students with a perspective of how these policies and strategies have evolved over time. Emphasis will be on understanding the current national security strategy, the military space-related doctrines, domestic laws and policies, and international laws, treaties, and agreements. Distance MBA course. Tuition schedule differs from on-campus courses. Open to admitted MBA students only.

SPTM - Sport Management

SPTM 1000 - Intro to Sport Management

3 Credits
A survey of the history of modern sport; examination of the foundation, operations, philosophy, and trends of contemporary sport management. Presentation of skills and techniques to prepare students to administer programs in diverse sport settings; issues and complex problems that confront sport leaders are emphasized. Prer., Sport Management majors only.

SPTM 2000 - Principles of Sport Law

3 Credits
Investigation and analysis of the law and legal issues in sport settings. Topics include negligence theory, risk management, common defenses, product liability, insurance, contracts, and implications for event development and operations. Prer., Sophomore Standing.

SPTM 2350 - Sport Science for Sport Administrators

4 Credits
Integration of exercise training and testing into business practices of sports organizations. Interdisciplinary lecture/lab format introduces and emphasizes roles and impact of human anatomy, exercise physiology, bio-mechanics, growth and development, nutrition, training principles, and drug testing in the development and management of sport. Approved for Compass Curriculum requirement: Explore-Physical and Natural World. Prer., SPTM 1000 or instructor consent. Sport Management students only.

SPTM 2960 - Field Experience in Sport Management

1 Credit
Provides students the opportunity to gain practical knowledge and hands-on experience in event operations, management, and logistics. This course requires 50 hours of field experience, 40 hours of which must be completed prior to enrolling in SPTM 2960; the remaining 10 hours will be completed during the semester of enrollment in the course. Prer., SPTM 1000, Sport Management majors only, 3.0 cumulative GPA. Consent of instructor required.

SPTM 3960 - Internship in Sport Management

3 Credits
Undergraduate internship for Sport Management students. Minimum of 150 hours. Prer., SPTM 2960, Junior standing, Sport Management majors only.

SPTM 3961 - Internship in Sport Management

3 Credits
Undergraduate internship for Sport Management students. Minimum of 150 hours. This course offers full-time student classification due to highly involved and/or non-local internships (Financial Aid Progress Units: 12). Prer., SPTM 2960, Junior standing, Sport Management majors only.

SPTM 3965 - Practicum in Soccer Management

3 Credits
Undergraduate practicum for Sport Management students pursuing the Soccer Management Track. Minimum of 150 hours. Prer., SPTM 2960, Junior standing, Soccer Management majors only.

SPTM 3966 - Practicum in Soccer Management

3 Credits
Undergraduate practicum for Sport Management students pursuing the Soccer Management Track. Minimum of 150 hours. This course offers full-time student classification due to highly involved and/or non-local internships (Financial Aid Progress Units: 12). Prer., SPTM 2960, Junior standing, Soccer Management majors only.

SPTM 4200 - Critical Issues in Sport Management

3 Credits
This required course for Sport Management students focuses on three issues: 1) the social-cultural context within which sports resides, 2) management and leadership of sports organizations, 3) ethical issues faced by sports managers. Prer., SPTM 2000, MKTG 3000, MGMT 3300; Senior standing; SPTM students only.

SPTM 4250 - International and Olympic Sport Governance

3 Credits
This course focuses on three specific areas of study: 1) the broader environmental factors

that shape international, Olympic and amateur sport, 2) the organization and governance of sport, 3) the history, role, and value of the Olympic movement. Sport Management majors may take both SPTM 4250 (Olympic) and SPTM 4450 (Collegiate) but must take at least one. Prer., SPTM 2000, MGMT 3300, MKTG 3000; Sport Management students only, Junior standing.

SPTM 4300 - Sport Facility and Event Management

3 Credits
Designed to assist the student in understanding sport facility management, ticket sales, and event functions and procedures. Includes site visits and discussions of issues and challenges that confront venue managers and operations. Prer., MKTG 3000, SPTM 2000. Coreq., MGMT 3300. Sport Management students only, Junior standing.

SPTM 4350 - Sport Economics and Finance

3 Credits
Provides students with the structure necessary to understand the role of a financial manager and the economics of sport in the sports industry. Considerable time will be spent on time value of money, return on investment, valuation, decision making, and management as it applies to financial roles in sports. Prer., FNCE 3050; SPTM students only, Junior standing or higher.

SPTM 4450 - Collegiate Athletic Administration

3 Credits
This courses focuses on issues of special importance to collegiate athletic administrators, including topics such as governance, compliance, budgeting, program policies, recruiting, public relations, fundraising, and effective leadership. Sport Management majors may take both SPTM 4450 (Collegiate) and SPTM 4250 (Olympic) but must take at least one. Prer., SPTM 2000, MGMT 3300, MKTG 3000; Junior standing; SPTM students only.

SPTM 4550 - Managing Soccer: Global and Local Contexts

3 Credits
This course will examine the operational management of soccer clubs and will involve a detailed examination of marketing, sponsorship, communications, personnel management, and sales and ticketing within the context of a professional soccer environment. The course will also analyze the organizational and governance structures within which soccer clubs reside. This will include consideration of the structure of world soccer, the differences between the North American and European models of sport (and soccer), the long-term development plan for soccer (from grassroots to excellence), and the governance framework which seeks to regulate the behavior of soccer clubs. Prer., Junior standing; Soccer Management majors only.

SPTM 4960 - Internship in Sport Management

4 Credits
Undergraduate internship for Sport Management students. Minimum of 200 hours. Prer., SPTM 3960 or SPTM 3961 or SPTM 3965, Junior standing, Sport Management majors only.

SPTM 4961 - Internship in Sport Management

4 Credits
Undergraduate internship for Sport Management students. Minimum of 200 hours. This course offers full-time student classification due to highly involved and/or non-local internships (Financial Aid Progress Units: 12). Prer., SPTM 3960 or SPTM 3961 or SPTM 3965, Junior standing, Sport Management majors only.

SPTM 4965 - Practicum in Soccer Management

4 Credits
Undergraduate practicum for Sport Management students pursuing the Soccer Management Track. Minimum of 200 hours. Prer., SPTM 3960 or SPTM 3961 or SPTM 3965, Junior standing, Soccer Management majors only.

SPTM 4966 - Practicum in Soccer Management

4 Credits
Undergraduate practicum for Sport Management students pursuing the Soccer Management Track. Minimum of 200 hours. This course offers full-time student classification due to highly involved and/or non-local practicums (Financial Aid Progress Units: 12).Prer., SPTM 3960 or SPTM 3961 or SPTM 3965, Junior standing, Soccer Management majors only.

SPTM 9400 - Independent Study in Sport Management

1-3 Credits
Independent study with the consent of the instructor who directs the study, and the dean.

STDY 1001 - Undergraduate Study Abroad Exchange

1-18 Credits
For lower division students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STRT - Strategy

STRT 4500 - Strategic Management

3 Credits
Takes a general manager's perspective on the administration of the corporation. Topics include the role and responsibility of general management, analysis of threats and opportunities in the competitive environment, strategies for building and sustaining competitive advantage, strategy implementation and management, and strategic management in the international environment. Topics are covered through comprehensive case analysis. Approved for Compass Curriculum requirement: Summit. Prer., INFS 3000, MKTG 3000, FNCE 3050, MGMT 3300, OPTM 3000, ENGL 2080 or ENGL 2090. Business seniors only.

STRT 6500 - Strategic Management

3 Credits
Taking a global perspective, this course focuses on the role of the general manager in articulating a vision for the business, assessing threats and opportunities in the competitive environment, formulating a strategy for achieving competitive advantage, and designing an organizational architecture for effectively implementing the strategy. Utilizes a combination of lectures, group discussions, and case analysis to raise and examine the key issues. Prer., All foundation courses or their equivalents and all MBA core courses. Graduate business students only. Recommended for final semester in the program.

STRT 6590 - Strategic Management

3 Credits
Taking a global perspective, this course focuses on the role of the general manager in articulating a vision for the business, assessing threats and opportunities in a competitive environment, formulating a strategy for achieving competitive advantage and designing an organizational architecture for effectively implementing the strategy. Utilizes a combination of lectures, group discussions, and case analysis to raise and examine the key issues. Prer., All foundation courses or their equiva-

lents and all MBA core courses. Graduate business students only. Recommended for the final semester in the program. Online graduate course. Tuition schedule differs from on-campus courses.

STYB - Study Abroad, Coll. of Business

STYB 1001 - Study Abroad - College of Business & Admin

1-18 Credits
For lower division students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYB 3001 - Study Abroad - College of Business & Admin

1-18 Credits
For upper division students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYC - Study Abroad, Coll. of LAS

STYC 1001 - Study Abroad - College of Letters, Arts & Sciences

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYC 3001 - Study Abroad - College of Letters, Arts & Sciences

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYD - Study Abroad, Coll. of Education

STYD 1001 - Study Abroad - College of Education

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYD 3001 - Study Abroad - College of Education

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYE -Study Abroad, Coll. of Engineering

STYE 1001 - Study Abroad - College of Engineering & Applied Science

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYE 3001 - Study Abroad - College of Engineering & Applied Science

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYN - Study Abroad, Coll. of Nursing

STYN 1001 - Study Abroad - Beth-El College of Nursing

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYN 3001 - Study Abroad - Beth-El College of Nursing

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYP - Study Abroad, School of Public Affairs

STYP 1001 - Study Abroad - School of Public Affairs

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

STYP 3001 - Study Abroad - School of Public Affairs

1-18 Credits
For students studying abroad. Admission and approval of exchange course of study is required to enroll in this course.

SYSE - Systems Engineering

SYSE 5010 - Intro to the System Perspective

3 Credits
Develops the systems engineering viewpoint and makes the central objective the system as a whole along with the satisfaction of a stated need. Offers the language and principles of each constituency in order to understand their requirements and negotiate balanced solutions. Prer., Graduate students only. Meets with EMGT 5010.

SYSE 5050 - Engineering Project Management

3 Credits
Presents the fundamentals of project selection, analysis, evaluation, scheduling, and control. Includes engineering economic analysis, project screening and selection, methods of evaluation, project structure, configuration management and control, and project scheduling, budgeting, and control. Prer., Graduate students only. Meets with EMGT 5050.

SYSE 5110 - Systems Engineering Processes

3 Credits
An in-depth examination of the System Engineering process through exposure to the structured approach necessary for the design of complex systems. The formulation of systems problems and the solution approach will be emphasized. Includes a model-based approach to key systems engineering design activities, process modeling, requirements analysis and functional allocation, trade-off analysis, and management of cost, schedule, and risk. Prer., SYSE 5010; Graduate students only. Meets with EMGT 5110.

SYSE 5150 - System Analysis

3 Credits
Provides an introduction to rigorous quantitative modeling techniques. Focus is on development of appropriate mathematical models, computer implementation of the models, and application of the models to decision-making scenarios. Includes linear and nonlinear techniques as well as deterministic and stochastic models. Prer., SYSE 5010; Graduate students only.

SYSE 5210 - Systems Architecture

3 Credits
Provides the foundations for developing and evaluating architectures for modern complex systems. Multiple domains are introduced in order to understand the architecture para-

digms. The core architecting process of modeling and representation is introduced, fully developed and applied to a diverse array of systems. Prer., SYSE 5010, SYSE 5150; Graduate students only.

SYSE 5310 - Project Estimation and Risk Analysis

3 Credits
Successful project management includes estimation and proactive risk identification and development of mitigation techniques. System uncertainty is reduced when project risks are identified, quantified, and mitigation strategies implemented. Tools, techniques, and methodologies used by successful project managers will be examined. Prer., SYSE 5050, SYSE 5110; Graduate students only. Meets with EMGT 5310.

SYSE 5350 - Engineering Modeling and Simulation

3 Credits
Designed with the builder of mathematical models, analytical model users, and those engineers who use computer simulations in the exercise of their disciplines, in mind. The first part of the course covers the fundamentals of mathematical modeling in the context of dynamic, optimizing, and stochastic models. The second part is devoted to the examination of discrete-event computer simulation. Prer., SYSE 5110, SYSE 5150; Graduate students only.

SYSE 5450 - Systems Engineering Project

1-3 Credits
Team systems engineering capstone project. Methods and techniques covered in previous coursework must be used to employ the systems engineering processes on a current system or system concept. Prer., SYSE 5210, SYSE 5310, SYSE 5350; Graduate students only.

TED - Teacher Education

TED 2010 - Beginning School Field Experience

1 Credit
This course provides an overview of curriculum, instruction, operation and the culture of area public schools through a combination of structured field experience and seminars. For undergraduates this is a prerequisite to TED 3000 and TED 3010.

TED 2020 - Beginning School Field Experience II

1 Credit
Provides an overview of curriculum, instruction, operation, and the culture of area public schools through a combination of structured field experiences, lectures, and teaching in the classroom. Prer., TED 2010.

TED 3000 - Contemporary American Education

3 Credits
Provides an introduction to contemporary American education for anyone interested in today's schools as well as for potential teachers.

TED 3010 - Early School Diversity Practicum

1-3 Credits
Provides early school diversity experiences for potential teachers in public school classrooms. This experience focuses on the roles, responsibilities and qualities of the professional teacher through practical experience. Open to juniors/seniors only. Can be repeated for up to 3 credits.

TED 3400 - ESL Professional Development Courses for Special Education Teachers

2-6 Credits
A series of three 2 credit hour courses. Series 1 - Special Education Assessment for ESL Learners with Disabilities and Developing a Culturally Responsive, Individualized Curriculum. Series 2 - Providing Specialized Instruction to ESL Learners with Disabilities and Building Partnerships: Collaboratively Meeting the Needs of ESL Learners. Series 3 - Developing Leadership Skills among ESL Learners with Disabilities and Developing Cultural Proficiency: Awareness-building for Special Educators.

TED 3700 - Intro to Esl/Multicultural Education

3 Credits
Provides comprehensive survey of ESL and multicultural educations programs. Includes history and legislation of bilingual/ESL education, instructional models, philosophies, theories of bilingual/ESL education,the culture of ESL classroom, instructional strategies and important considerations for teaching the LEP student.

TED 3710 - Materials and Methods in ESL/Multi-Cultural Education

3 Credits
Provides an in-depth study of curriculum options available for the ESL classroom. Presents, reviews and critiques specific methods and strategies for teaching language minority students. Gives students the opportunity to develop and present teaching units using ESL methodology as appropriate in classrooms. Prer., TED 3700.

TED 3720 - Literacy for Linguistically Different Learners

3 Credits
Presents current and emerging philosophies and methods on teaching reading to culturally diverse second language learners. Includes review of materials, strategies for teaching reading and writing skills, and important considerations for transference from L1 to L2 reading, and field-based assignments. Prer., TED 3700.

TED 3730 - Assessment: Methods, Materials, and Theories for ELL's

3 Credits
Prepares teachers to assess and evaluate ESL students in a field-based setting. Includes particular assessment instruments, mediation strategies and materials, and formal and informal diagnostic strategies. Covers both theoretical and applied aspects of assessing language learning and teaching. Prer., TED 3700.

TED 3740 - Practicum in ESL/Multicultural Education

3 Credits
A field-based, standards-based course that provides at least 150 hours of site-based work in addition to in-school work. Students are placed into classrooms with ELLs if they do not already have such classrooms. Instructors supervise the placements. Prer., TED 3700, TED 3710, TED 3720, and TED 3730.

TED 3750 - Second Language Acquisition

3 Credits
Presents a broad survey of second language acquisition research. Stresses theoretical concerns and research findings and practical applications to teaching second languages. Focuses on social and economic factors that contribute to success for ELLs in schools. Meets with CURR 5705.

TED 3760 - Curriculum for Multicultural Education

3 Credits
Analyzes curriculum programs used in the classrooms, and applies principles and innovation for education of ethnic minority and majority students in the elementary grades.

TED 3770 - Pro-Seminar: Parent and Community Involvement

3 Credits
Focuses on models and strategies for improving parent and community involvement in the schools. Discusses administrative concerns, such as parent advisory councils, instructional concerns, such as helping children with school assignments, and family literacy issues and programs. Field-based assignments are required.

TED 4400 - Children's Literature

3 Credits
This course is an introduction to children's literature. Students will read a variety of genres, explore issues related to children's literature, and engage in a significant amount of responsive and evaluative writing. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures; Writing Intensive.

TED 4410 - Writing in the Elementary School

1 Credit
An introduction to writing instructional practices. Includes a critical overview of current approaches, methods, and materials. Supported by a basic understanding about the reciprocal relationship between reading and writing in the learning process. Prer., CURR 4800, TED 3010, TED 4520, TED 4580, TED 4620, and SPED 3001.

TED 4440 - Mathematical Connections and Concepts

3 Credits
Exploration of current mathematics curriculum topics in ways which will allow students to develop deeper conceptual knowledge and a better understanding of the connections between various mathematical topics. Applications of mathematics to other disciplines. Historical background of secondary curriculum.

TED 4500 - The Professional Educator

1 Credit
Provides student teachers in the final semester of teacher training with the skills and strategies to successfully enter the teaching profession including portfolio development, interviewing, philosophies, and application processes.

TED 4520 - Educational Psychology

3 Credits
Provides teachers with the knowledge of psychology most relevant to teaching. The focus is on areas of child development and major learning theories and their application in the classroom.

TED 4530 - Social Foundations of Educational Issues

1 Credit
Addresses the relationship of schooling to society by focusing whether the schools can significantly reduce the environmentally related inequalities in achievement which exist in America on relationships between the state and federal government and education. Includes an overview of multicultural education and an outline of recent legislative changes enacted at the state and federal level.

TED 4540 - Education of Exceptional Children

2 Credits
Includes an overview of the major current issues in special education as well as a description of the most commonly encountered handicapping conditions. Students gain an understanding of different learning styles and adapting instruction to meet individual needs. Information regarding the general legal requirements for handicapped students and due process is also provided. Requires volunteer work with special populations.

TED 4570 - Elementary Literacy Methods

4 Credits
Elementary literacy strategies to successfully implement reading and writing teaching and assessment with emphasis on Colorado Model Content Standards. Prer., Acceptance into Teacher Education and Licensure Program (TELP).

TED 4580 - Elementary Curriculum, Instruction, and Classroom Management

3 Credits
Principles of curriculum design, instructional models and practice, standards-based curriculum and assessment, planning, organization, and classroom management and discipline. Prer., Acceptance into TELP.

TED 4590 - Elementary Physical and Wellness Education Methods

1 Credit
Examines the contribution physical and wellness education makes to the curriculum. The components of the curriculum will be explained and students will have direct experience with most activities. Emphasis will be on low-organized games, rhythm, perpetual motor activities, conflict resolution, class management, and the importance of individual skill development. Prer., Accepted TEP students only.

TED 4600 - Elementary - School Experience

3 Credits
Pre-student teaching field experience. Summer involves participating in organizing, planning, conducting and evaluating a reading clinic experience in a public school. Fall involves observing a variety of schools and classrooms and serving as a teaching associate at assigned Professional Development School. Open to juniors/seniors only. Prer., CURR 4800, TED 3010, TED 4520, TED 4580, TED 4620, and SPED 3001.

TED 4620 - Elementary Reading Methods

3 Credits
An introduction to reading literacy instructional practices. Includes a critical overview of current approaches, methods and materials, supported by a basic understanding about the reading and literacy learning process.

TED 4630 - Elementary - Student Teaching

12-12 Credits
Elementary education students, in consultation with members of the school of education faculty, will be assigned to an elementary professional development school for full-day teaching for a period of sixteen weeks. During this time students will demonstrate, through direct site development experience, competence and understanding of the teaching-learning process. Open only to juniors/seniors. Approved for Compass Curriculum requirement: Summit. Prer., CURR 4800, TED 3010, TED 4410, TED 4520, TED 4570, TED 4580, TED 4600, TED 4620, TED 4640, TED 4650, TED 4660, and SPED 3001.

TED 4640 - Elementary Mathematics Methods

3 Credits
Provides teachers with a laboratory approach for teaching mathematics and acquaints them with a variety of materials and methods. Emphasis is on fostering skills in problem-solving; creative/critical thinking; and inductive/deductive processes and addressing the Colorado content standards for math. Prer., CURR 4800, TED 3010, TED 4520, TED 4580, TED 4620, and SPED 3001.

TED 4650 - Elementary Science Methods

2 Credits
Designed to acquaint teachers with materials and methods for teaching science to elementary school children. Consideration will be given to various programs and textbook series as well as the Colorado content standards in science. Teachers will complete a number of laboratory activities. Prer., CURR 4800, TED 3010, TED 4520, TED 4580, TED 4620, and SPED 3001.

TED 4660 - Elementary Social Studies Methods

1 Credit
Elementary social studies disciplines of history, civics, economics, and geography, writing standards-based instructional units, and characteristics of high quality social studies programs and instruction. Prer., CURR 4800, TED 3010, TED 4520, TED 4580, TED 4620, and SPED 3001.

TED 4680 - Expressive Arts Methods

1 Credit
Introduces prospective teachers to methods for teaching the expressive arts within the regular classroom. Students will learn how to meaningfully integrate the expressive arts into all subject areas. Visual arts, music drama, puppetry, dance, expressive literature, creative story telling and writing will all be explored. Prer., Accept TEP students only.

TED 4700 - School Experience - Secondary

3 Credits
Pre-student teaching field experience. Summer: Teaching in a summer program for area secondary schools. Fall: 8 weeks in a PDS middle school site and 8 weeks in a PDS high school site observing, assisting, teaching. Open only to juniors/seniors or post-bac students in the Professional Year. Prer., Acceptance to TELP program.

TED 4710 - Methods for Secondary Education

3 Credits
Introduces the fundamentals of teaching methods. Focus is on the decision-making model of teaching including planning, implementing, assessment, and modifying teaching. Skill in developing instructional objectives and planning and presenting lessons are emphasized. Prer., Acceptance into TELP.

TED 4720 - Teaching Reading and Writing in the Content Area

3 Credits
Designed to help secondary teachers become aware of the reading and writing process and how they apply to subject matter material. A framework for functionally teaching reading and writing within a particular content area is developed and strategies for increasing student independence with print are emphasized. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4730 - Secondary - Student Teaching

12-12 Credits
Secondary education students, in consultation with members of the school of education faculty, will be assigned to a secondary professional development school for full-day teaching for a period of sixteen weeks. During this time students will demonstrate, through direct experience, competency and understanding of the teaching-learning process. Open only to juniors/seniors. Approved for Compass Curriculum requirement: Summit. Prer., CURR 4800, TED 3010, TED 4520, TED 4700, TED 4710, TED 4720, TED 4790, TED 4910, TED 4920, TED 4930, TED 4940, TED 4950, and SPED 3001.

TED 4790 - Secondary Curriculum, Instruction and Evaluation

3-4 Credits
Students develop an understanding of the context in which instruction takes place in today's middle and high schools, as well as principles of curriculum design, including standards-based lesson and unit planning. Methods of assessment, interpretation of results, and diagnostic teaching will be addressed. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4800 - English as a Second Language for Educators

3 Credits
Presents current and emerging philosophies, theories,and methods on teaching literacy and content areas to culturally and linguistically diverse students. Open to juniors/seniors only. Prer., Core program courses 3000 and 3010. Meets with TED 5800.

TED 4820 - Workshop in Educational Development

1-4 Credits
Current trends and issues in education. In-depth study of selected topics. Advanced-level work but counts toward a graduate degree only as a minor.

TED 4830 - Instructional Workshop

1-4 Credits
Current instructional approaches are considered. Focus is upon classroom applications with in-depth study of selected topics.

TED 4910 - Secondary English Methods

3 Credits
Secondary English Methods gives an overview of instructional theory, methods, and materials in English and helps the students develop teaching strategies and address the Colorado model content standards. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4920 - Secondary Math Methods

3 Credits
Secondary Math Methods gives an overview of instructional theory, methods, and materials in mathand helps students develop teaching strategies and address the Colorado model content standards. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4930 - Secondary Science Methods

3 Credits
Secondary Science Methods gives an overview of instructional theory, methods, and materials in science and helps students develop teaching strategies and address the Colorado model content standards. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4940 - Secondary Social Studies Methods

3 Credits
Secondary Social Studies Methods gives an overview of instructional theory, methods, and materials in social studies and helps students develop teaching strategies and address

the Colorado model content standard. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 4950 - Secondary Spanish Methods

3 Credits
Secondary Spanish Methods gives an overview of instructional theory, methods, and materials in Spanish and helps students develop teaching strategies and address the Colorado model content standards. Prer., CURR 4800, TED 3010, TED 4520, TED 4710, and SPED 3001.

TED 5010 - Early School Diversity Practicum

1-3 Credits
Provides early school diversity experience in a practicum setting for potential teachers in public school classrooms. Focuses on the roles, responsibilities and qualities of the professional teacher through practical experience. Open only to graduate students. Can be repeated for up to 3 credits. Prer., TED 5000, prior or concurrent.

TED 5300 - SpecTopics in Teacher Education

1-3 Credits
This course explores special topics in teacher education. Course cannot be used in a degree program.

TED 5410 - Writing in the Elementary School

1 Credit
An introduction to writing instructional practices. Includes a critical overview of current approaches, methods, and materials. Supported by a basic understanding about the reciprocal relationship between reading and writing in the learning process.

TED 5520 - Educational Psychology

3 Credits
Provides teachers with the knowledge of psychology most relevant to teaching. The focus is on areas of child development and major learning theories and their application in the classroom. Additional requirements for TED 5520 Students.

TED 5570 - Elementary Literacy Methods

4 Credits
Elementary literacy strategies to successfully implement reading and writing teaching and assessment with emphasis on Colorado Model Content Standards. Prer., Graduate students only.

TED 5580 - Elementary Curriculum, Instruction, and Classroom Management

2 Credits
Principles of curriculum design, instructional models and practice, standards-based curriculum and assessment, planning, organization, and classroom management and discipline. Additional requirements for TED 5580 students. Prer., Acceptance into TEP.

TED 5600 - Elementary - School Experience

3 Credits
Pre-student teaching field experience. Summer involves participating in organizing, planning, conducting and evaluating a reading clinic experience in a public school. Fall involves observing a variety of schools and classrooms and serving as a teaching associate at an assigned Professional Development School. Open to graduate students only. Prer., Acceptance in TEP.

TED 5620 - Elementary Reading Methods

3 Credits
An introduction to reading literacy instructional practices. Includes a critical overview of current approaches, methods and materials, supported by a basic understanding about the reading and literacylearning process. Additional requirements for TED 5620 students. Prer., Acceptance into TEP.

TED 5630 - Elementary - Student Teaching

12-12 Credits
Elementary education students, in consultation with members of the school of education faculty, will be assigned to an elementary professional development school for full-day teaching for a period of sixteen weeks. During this time students will demonstrate, through direct site development experience, competency and understanding of the teaching-learning process. Open to graduate students only. Prer., TEP students only.

TED 5640 - Elementary Mathematics Methods

3 Credits
Provides teachers with a laboratory approach for teaching mathematics and acquaints them with a variety of materials and methods. Emphasis is on fostering skills in problem-solving; creative/critical thinking; and inductive/deductive processes and addressing the Colorado content standards for math. Prer., Acceptance into TEP.

TED 5650 - Elementary Science Methods

2 Credits
Designed to acquaint teachers with materials and methods for teaching science to elementary school children. Consideration will be given to various programs and textbook series as well as the Colorado content standards in science. Teachers will complete a number of laboratory activities. Prer., Acceptance into TEP.

TED 5660 - Elementary Social Studies Methods

1 Credit
Elementary social studies disciplines of history, civics, economics, and geography, writing standards-based instructional units, and characteristics of high quality social studies programs and instruction. Additional requirements for TED 5660 students. Prer., Acceptance into TEP.

TED 5700 - Secondary - School Experience

1-5 Credits
Pre-student teaching field experience. Summer: Teaching in a summer program for area secondary schools. Fall: 8 weeks in a PDS middle school site and 8 weeks in a PDS high school site observing, assisting, teaching. Open to graduate students only. Prer., Acceptance in TEP.

TED 5710 - Methods for Secondary Education

1-3 Credits
Introduces the fundamentals of teaching methods. Focus is on the decision-making model of teaching including planning, implementing, assessment, and modifying teaching. Skill in developing instructional objectives and planning and presenting lessons are emphasized. Additional requirements for TED 5710 students. Prer., Acceptance into TEP.

TED 5720 - Teaching Reading and Writing in the Content Area

3 Credits
Designed to help secondary teachers become aware of the reading and writing process and how they apply to subject matter material. A framework for functionally teaching reading

and writing within a particular content area is developed and strategies for increasing student independence with print are emphasized. Additional requirements for TED 5720 students. Prer., Acceptance into TEP.

TED 5730 - Secondary - Student Teaching

12-12 Credits
Secondary education students, in consultation with members of the school of education faculty, will be assigned to a secondary professional development school for full-day teaching for a period of sixteen weeks. During this time students will demonstrate, through direct experience, competency and understanding of the teaching-learning process. Open to graduate students only. Prer., TEP students only.

TED 5790 - Secondary Curriculum, Instruction and Evaluation

3-4 Credits
Students develop an understanding of the context in which instruction takes place in today's middle and high schools, as well as principles of curriculum design, including standards-based lesson and unit planning. Methods of assessment, interpretation of results, and diagnostic teaching will be addressed. Additional requirements for TED 5790 students. Prer., Acceptance into TEP.

TED 5800 - English as a Second Language for Educators

3 Credits
Presents current and emerging philosophies, theories, and methods on teaching literacy and content areas to culturally and linguistically diverse students. Open only to graduate students. Prer., Core program courses 5000 and 5010. Meets with TED 4800.

TED 5830 - PDS Workshop

1 Credit
Provides experiences and principles that address the roles, structures, and expectations of Professional Development School sites for new sites. Designed for site coordinators and clinical teachers at sites.

TED 5910 - Secondary English Methods

3 Credits
Secondary English Methods gives an overview of instructional theory, methods, and materials in English and helps students develop teaching strategies and address the Colorado model content standards. Prer., Acceptance into TEP.

TED 5920 - Secondary Math Methods

3 Credits
Secondary Math Methods gives an overview of instructional theory, methods, and materials in math and helps students develop teaching strategies and address the Colorado model content standards. Prer., Acceptance into TEP.

TED 5930 - Secondary Science Methods

3 Credits
Secondary Science Methods gives an overview of instructional theory, methods, and materials in science and helps students develop teaching strategies and address the Colorado model content standards. Prer., Acceptance into TEP.

TED 5940 - Secondary Social Studies Methods

3 Credits
Secondary Social Studies Methods gives an overview of instructional theory, methods, and materials in social studies and helps students develop teaching strategies and address the Colorado model content standard. Prer., Acceptance into TEP.

TED 5950 - Secondary Spanish Methods

3 Credits
Secondary Spanish Methods gives an overview of instructional theory, methods, and materials in Spanish and helps students develop teaching strategies and address the Colorado model content standards. Prer., Acceptance into TEP.

TED 9400 - Independent Study

1-6 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. The specifics of the investigation and the topic are a joint decision by the student and faculty member. The meeting times, expectations, and evaluation are arranged with the faculty member. Students must have written consent of the instructor.

TED 9500 - Independent Study in TED

1-6 Credits
Independent investigation of topics of specific interest to the individual student and completed under the direction of a faculty member. Specifics are a joint decision by student and faculty member. Students must have consent of instructor.

THTR - Theatre

THTR 1000 - Introduction to Theatre

3 Credits
An introduction to the art and practice of theatre, including acting, directing, playwriting, scenic and lighting design. Course includes required attendance at theatre productions. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

THTR 2000 - Introduction to Technical Theatre

4 Credits
A hands-on introduction to scene construction and decoration, stage lighting and effects, basic safety, costume shop procedures, sound technology, and all the fundamentals of technical theatre. Students will attend one lecture and one lab per week. Labs may include field trips.

THTR 2010 - Stagecraft Laboratory

1 Credit
A hands-on practicum in stagecraft. Students will be given specific responsibilities in production work.

THTR 2020 - Acting Workshop I

3 Credits
An introduction to stage acting, with an emphasis on theatre games designed to develop imagination and concentration. Several physical and improvisational exercises and a basic approach to character development. Approved for LAS Oral Communication requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

THTR 2030 - Acting Workshop II

3 Credits
Continuation to THTR 2020, designed for those who have completed THTR 2020 or who have had previous acting experience. Increased emphasis on character development and scene work. Approved for LAS Oral Communication

requirement. Prer., THTR 2020 or consent of instructor.

THTR 2040 - Voice and Articulation I

3 Credits
Special training of the voice. Topics include breathing techniques, voice quality, projection, articulation, and basic IPA (International Phonetic Alphabet). Prerequisite for THTR 3040-Voice and Articulation II. Approved for LAS Oral Communication requirement.

THTR 2050 - Improvisational Theatre

3 Credits
Improvisation covers the techniques involved in improvisatory theatre. Comedy games and dramatic long-form scenes are covered as well as historical and theoretical analysis of improvisation in the theatre. Approved for LAS Oral Communication requirement.

THTR 2060 - Music Theatre Performance and Practice

1-3 Credits
Focuses on the developing musical skills and developing a historical context of the genre of musical theatre. Topics include vocal techniques, music theatre repertoire, audition and rehearsal techniques, role preparation, as well as acting and dancing basics. Meets with MUS 2450.

THTR 2600 - Theatre for Children

3 Credits
A lecture and practicum in Children's Theatre and educational theatre techniques. Various sources examined for dramatizing: children's stories, fairy tales, poems, and existing scripts. Recommended for actors and soon-to-be educators. Fall only. Prer., THTR 1000.

THTR 2700 - Fundamentals of Dance Technique

3 Credits
An introduction to dance technique. Students will focus on technique exercises, stretching, body alignment, choreography, and movement explorations. The course is a beginning dance class and the foundation for other dance classes.

THTR 2900 - Special Topics in Theatre

3 Credits
Topics will vary from year to year, and may be taught by guest instructors.

THTR 3020 - Advanced Acting Studio I

3 Credits
Intensive studio work on scenes and monologues with increased attention to movement. Focus is on period styles of performance. Prer., Open only to those who have THTR 2030, or by special audition and permission of instructor prior to first day of class. May be repeated once with consent of instructor.

THTR 3030 - Advanced Acting Studio II

3 Credits
A continuation of THTR 3020, or by special permission of the instructor. Students will study, research, and perform a variety of works by one or two playwrights or a specific theatrical genre. Class will culminate with a performance. Prer., THTR 2020, or consent of instructor. May be repeated once with consent of instructor.

THTR 3040 - Voice and Articulation II

3 Credits
Continuation of THTR 2040. Intense study of Edith Skinner's vocal technique and the IPA. Introduction of dialects and voice-over commercial work. Prer., THTR 2040 or permission of instructor.

THTR 3050 - Stage Combat

3 Credits
Introduces the advanced actor to the art of stage combat. The course culminates with a certification in at least one form of stage combat. May be repeated once with consent of instructor.

THTR 3060 - Advanced Musical Theatre: Performance and Practice

3 Credits
Continuation of beginning musical theatre course (THTR 2060 or MUS 2450). Intense scene study, vocal training and coaching lead to a final showcase. Meets with MUS 3450. Prer., THTR 2060 or MUS 2450.

THTR 3100 - On-Camera Performance

3 Credits
An introduction to skills necessary for communicating through a camera, to include basic acting techniques. This is a studio course which will involve on-camera experiences with commercial copy, commentary, newscopy, dramatic scenes and industrial copy. Approved for LAS Oral Communication requirement.

THTR 3110 - Auditions and the Business of the Theatre

3 Credits
A professional practice course that teaches audition technique and the ins and outs of a successful career in the theatre. Prer., THTR 2020.

THTR 3201 - Topics in Early Theatre History

3 Credits
Covers the development of theatre from the Greeks to the Restoration. Each semester the course is taught there will be a special focus on a specific genre or style of theatre. Approved for LAS Humanities area requirement.

THTR 3202 - Topics in Modern Theatre History

3 Credits
Covers the development of theatre from the 19th century to the present. Each semester that the course is taught there will be a special focus on a specific genre or style of theatre. Approved for LAS Humanities area requirement.

THTR 3230 - What's Funny? The Nature and Form of Dramatic Comedy

3 Credits
An advanced survey of dramatic comedy from ancient times to the present with particular emphasis on continuity of routines, comic acting, and variety of comic forms.

THTR 3240 - Women in Theatre

3 Credits
An exploration and examination of women's history of, participation in, and contributions to the performing arts as actresses, playwrights, directors, theorists. Combining theory and practice, each semester the students will prepare a staged reading of a female-authored text. Approved for LAS Cultural Diversity requirement.

THTR 3390 - Theatre Practicum: Acting

1-3 Credits
Students will receive practical experience as

an actor on a student production. Prer., Enrollment by audition and/or permission of instructor only.

THTR 3391 - Theatre Practicum: Technical

1-3 Credits
Students will receive practical experience as a technician on a student production. Prer., Enrollment by audition and/or permission of instructor only.

THTR 3392 - Theatre Practicum: Directing/ Stage Management

1-3 Credits
Students will receive practical experience in directing/stage management on a student production. Prer., Enrollment by audition and/or permission of instructor only.

THTR 3400 - Shakespeare in Production

1-6 Credits
Special production-related projects in conjunction with the Theatreworks Summer Shakespeare Festival. Enrollment by permission of instructor only. Prer., THTR 1000.

THTR 3510 - Stage Management

3 Credits
A practical course that examines the responsibilities of a stage manager from preproduction through rehearsal and perfomances. Prer., THTR 2000.

THTR 3520 - Costume Design

3 Credits
Introduction to design, construction, and history of costuming for theatre and film.

THTR 3530 - Theatre Make-up: Design

3 Credits
Emphasizes the fundamentals of theatre make-up design and application techniques. Techniques include basic corrective, character, old age, and fantasy application.

THTR 3540 - Properties and Set Dressing

3 Credits
An in-depth course that investigates the details that go into set creation from props to furniture to upholstery and carpentry. Prer., THTR 2000.

THTR 3550 - Lighting for Theatre

3 Credits
An introduction to lighting design including color theory, script analysis, light plotting, and electrics. Prer., THTR 2000.

THTR 3560 - Theatre Set Design

3 Credits
This course is designed to teach and immerse the student in scenic design in the theatre. Topics include script analysis, scenic preparation, sketching, and drafting. The student will learn by practical example, field, study, and hands-on activity.

THTR 3590 - Advanced Topics in Technical Theatre

3 Credits
Advanced course covering various technical topics of theatre production. Topics may include set design and construction, scenic artistry, costuming, make-up, sound, stage lighting, props, etc. Prer., THTR 2000.

THTR 3600 - The World of the Play

1-3 Credits
Students in this course will be involved in interdisciplinary studies clustered around a Theatreworks major production. Topics considered may include visual arts, music, history, literature, science, technology and philosophy relevant to the world of the designated play.

THTR 3700 - Special Topics in Dance

3 Credits
Focus is on various forms of dance. Each semester the course will use technique, research, and performance to highlight a specific dance genre. Prer., THTR 2700 or DNCE 2700. Meets with DNCE 3700.

THTR 3900 - Special Topics in World Theater

3 Credits
Varying topics relating to theory, practice, and text of world theater. May be repeated for credit if topic is different.

THTR 3960 - Nationalism, Romanticism, and Melodrama

3 Credits
An in-depth look at theatre of the 19h century from the French Revolution to the Grand-Guignol. Emphasis on melodrama and related examples from visual art and music. Meets with VAPA 3960.

THTR 3970 - The Nordic Legacy

3 Credits
An in-depth look at the art of the Scandinavian countries with a specific focus on Henrik Ibsen, August Strindberg, Edvard Munch, and Ingmar Bergman. Meets with VAPA 3970.

THTR 3980 - The Manifestoes of the Avant-Garde

3 Credits
An in-depth look at the history, practice, and manifestoes of the major artists of the historical Avant-Garde, from 1880-1950. Meets with VAPA 3980.

THTR 4000 - Internship in Theatre

1-3 Credits
Designed theatrical experiences involving specific application of relevant concepts and skills in supervised professional situations. Pass/Fail only. Prer., Permission of Program Director.

THTR 4060 - Directing I

3 Credits
An introduction to directing for the stage. Exploration of various staging techniques and the essential technical areas (lights, sound and design) as well as intense script analysis. Prer., THTR 1000 and/or THTR 2030.

THTR 4070 - Directing II

3 Credits
A seminar and practicum in directing for the stage. Students will apply learned techniques from THTR 4060 by directing one-act plays, which will be performed in the Spring Student Theatre Festival. Prer., THTR 4060.

THTR 4200 - Special Topics in Dramatic Literature

3 Credits
Varying topics related to the history of dramatic literature. May focus on a particular playwright, genre, or period. May be repeated for credit if topic is different.

THTR 4400 - Culminating Directing Project

1-3 Credits
A culminating experience reserved for advanced students in directing. Students selected for the class are given a slot in the Osborne Studio Theatre to produce a full-length production. Prer., THTR 4060, THTR 4070, or consent of instructor.

THTR 4980 - Theatre Capstone: Advanced Theatre Production

3 Credits
This course engages students in the theatre experience from conception to completion in scholarship and performance. All students will be involved in a semester-long project, a dramatic production typically lasting 30-50 minutes. Students will be asked to bring their experience and expertise to this unique collaboration. Approved for Compass Curriculum requirement: Summit. Prer., Senior standing.

THTR 9400 - Independent Study in Theatre

1-6 Credits
Independent study in theatre history, production or performance by permission of department chair.

UTED - UTeach - Coll. of Education

UTED 1010 - Step I: Inquiry Approaches to Teaching

1 Credit
Lectures, audio and visual media, readings from supplementary journal articles, classroom discussions, technology-mediated interactions, student presentations, in-class small group activities, observations in selected elementary intermediate (grades 3-5) classrooms and three field experiences in elementary classrooms. Req.; Undergrad only.

UTED 1020 - Step II: Inquiry-Based Lesson Design

1 Credit
Lectures, audio and visual media, readings from supplementary journal articles, classroom discussions, technology-mediated interactions, student presentations, in-class small group activities, observations in selected middle schools, and three field experiences in middle schools. Prereq., UTED 1010. Undergrad only.

UTED 2010 - Knowing and Learning in Mathematics and Science

3 Credits
The goal of this course is to develop approaches to knowing and learning mathematics and science. Other topics include studying how standards for knowing are used, how knowing and learning are structured, how change develops, how connections between assessments and theories of knowing occur, and how technology is connected to learning. Req., UTED 1010, UTED 1020. Undergrad only.

UTED 3020 - Classroom Interactions

3 Credits
This course focuses on interactions between teachers, students, and content, and how effective teacher-student interactions in the classroom play a pivotal role in students' achievement. Students work in pairs to plan and teach inquiry-based lessons at the high school level. Preq., UTED 1010, UTED 1020, UTED 2010; acceptance into UCCSTeach program.

UTED 4710 - Project-Based Instruction

3 Credits
This is the capstone course in the sequence of professional development courses for UCCS Teach. Project-Based Instruction (PBI) is centered on the premise that project-based instruction engages learners in exploring authentic, important, and meaningful questions of real concern to students. Prereq., UTED 2010 and UTLS 3040.

UTED 4720 - Reading in the Content Area

3 Credits
Designed to help secondary teachers become aware of the reading processes as well as current issues in adolescent literacy research and how they apply to subject matter material. Req., UTED 1010, UTED 1020, and UTED 2010. Undergrad only.

UTED 4730 - Apprentice Teaching UCCS Teach and Seminar

12-12 Credits
Reinforces and expands teaching strategies that teacher candidates have developed through their coursework and field experiences. The course focuses on classroom management and time management strategies, parent/teacher communication strategies, school culture, and school dynamics. Approved for Compass Curriculum requirement: Summit. Prer., Successful completion of all UCCS Teach program courses.

UTED 4731 - Apprentice Teaching Seminar UCCS Teach

1 Credit
Provides opportunities for students to synthesize and apply what they have learned in prior UCCS Teach courses and field experiences as they develop the habits of mind and practices of an effective teacher. Prer., successful completion of all UCCS Teach program courses.

UTLS - UTeach - Coll. of LAS

UTLS 3030 - Perspectives on Science & Math

3 Credits
Examination of philosophy and history of science for science and math students seeking to become secondary school teachers. Topics such as the philosophy, sociology, methodology, economics, politics and morality of science and mathematics will be explored with applications to teaching these materials in the secondary school classroom.

UTLS 3040 - Science Research Methods

3 Credits
An inquiry based introduction to scientific research for science and math students seeking to become secondary school teachers. Lecture and lab sections cover topics such as experimental design, statistical analysis, mathematical modeling, and presentation of research. Satisfies the LAS and Compass Curriculum Quantitative and Qualitative Reasoning requirement as a statistics course when taken by a student who has either 1) successfully completed MATH 1040 (or a mathematics course that has college algebra as a prerequisite), OR 2) scored 87% or higher on the College Algebra placement test and scored 50% or higher on the Business Calculus placement test. Juniors/Seniors Only.

UTLS 3480 - Functions and Modeling

3 Credits
Data collection and exploration of a variety of situations that can be modeled using linear, exponential, polynomial, and trigonometric functions. Use of technology in teaching, connections between various areas of mathematics, non-routine problem solving, problem-based learning, and applications of mathematics. Meets with MATH 3480. Prer., MATH 2350.

VA - Visual Arts

VA 1010 - Beginning Studio-2D

3 Credits
Explores the essential concepts used in the creation of two-dimensional art, including composition and color theories. Prerequisite to all 2000, 3000 and 4000 level VA courses. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

VA 1020 - Beginning Studio 3D

3 Credits
A basic course in fundamental three-dimensional concepts and processes of form, space, and 3D construction techniques. Prerequisite to all 2000, 3000 and 4000 level VA courses. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures.

VA 1040 - Beginning Drawing

3 Credits
Explores fundamental drawing principles such as mark making, light, value, space, and composition. Emphasis is on conceptual development through a perceptual drawing approach to a variety of subject matter, including still life, landscape, and the human figure. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. This course is a prerequisite to all 2000, 3000, and 4000 level VA courses.

VA 2000 - Special Topics

3 Credits
A thematically based exploration of various approaches, processes and hybrid practices across a broad spectrum of the visual arts. Prer., VA 1010, VA 1020, VA 1040, or permission of instructor.

VA 2010 - Intermediate Drawing

3 Credits
Expands upon the understanding of the fundamental drawing principles introduced in VA 1040. Significant emphasis is placed on conceptual development through both perceptual and experimental drawing processes. Prer., VA 1010, VA 1020, VA 1040 or instructor permission.

VA 2020 - Printmaking

3 Credits
Introduction to selected printmaking techniques, including silkscreen, Xerox, intaglio, and etching. Specific content will be determined by instructor. Prer., VA 1010, VA 1020, VA 1040 or permission of instructor.

VA 2080 - Beginning Sculpture

3 Credits
A continuation of the technical and conceptual skills developed in VA 1020. A broad range of sculptural concerns are explored including assemblage, sound, motion, and site-specific works. Emphasis is on the process of idea development, experimentation with various media and techniques, merging concept and form, and the amalgamation of multiple disciplines. Prer., VA 1010, VA 1020, VA 1040 or instructor permission.

VA 2090 - Textiles

3 Credits
Introduction to various non-loom fiber processes, including sewn forms, crochet, knotting, net-making, and hand-made felt. Prer., VA 1010, VA 1020. Meets with VA 3090.

VA 2100 - Digital Imaging

3 Credits
Introduction to digital media and the process of editing through the examination of multiple software programs. An inquiry into the three fundamentals of media: text, audio, and video. Prer., VA 1010, VA 1020, VA 1040 or instructor permission.

VA 2110 - Introduction to Photography

3 Credits
An overview of photography with an introduction to fine art techniques and concepts. Students will learn basic black and white film development and darkroom skills.

VA 2120 - Introduction to Artists' Books

3 Credits
Students will explore various methods of book construction, including use of several media for page/cover design, as well as book-binding fundamentals. Prer., VA 1010, VA 1020, VA 1040 or instructor permission. Meets with VA 3120.

VA 2130 - Beginning Painting

3 Credits
Explores fundamental painting principles such as color, composition, space, and surface quality. Emphasis is on conceptual development through a perceptual approach to a wide range of subjects including still life, portraits, and landscapes. Prer., VA 1010, VA 1020, VA 1040 or permission of instructor.

VA 2150 - Beginning Digital Photography

3 Credits
Explores digital photography from the camera to the processes used for computer-based prints and digital media. Addresses historical, theoretical, formal, conceptual, technical aspects of digital photo along with digital cameras and darkroom, and image output.

VA 2190 - Weaving

3 Credits
Introduction to the four-harness loom, including pattern drafting, 3D forms, and basic weaving techniques. Prer., VA 1010, VA 1020, VA 1040 or permission of instructor.

VA 2222 - Spec Topics at Bemis School of Art

1 Credit
Various media approaches and processes across a broad spectrum of the visual arts. Specific content will be determined by the instructor. Taught at the Bemis School of Art.

VA 2440 - Papermaking

3 Credits
Exploration of paper and pulp in the creation of handmade papers and related two-dimensional and three-dimensional objects. Prer., VA 1010, VA 1020, VA 1040 or permission of instructor.

VA 3000 - Special Topics Advanced

3 Credits
A thematically based advanced exploration of various approaches, processes and hybrid practices across a broad spectrum of the visual arts as an interdisciplinary practice. Prer., VA 1010, VA 1020, VA 1040, or permission of instructor.

VA 3010 - Advanced Drawing

3 Credits
Investigates a variety of traditional and experimental drawing media and processes to cre-

ate a personal, passionate, and culturally pertinent body of artwork. Special emphasis is placed on helping students develop a critical understanding of both the work they produce and the larger role of drawing in contemporary art and culture. Req., VA 2010 or VA 3150 or permission of instructor.

VA 3020 - Advanced Printmaking

3 Credits
Continuation of VA 2020, with emphasis on experimentation and development of skills and concepts.

VA 3080 - Advanced Sculpture

3 Credits
Continuation of VA 2080, with an emphasis on development of student's personal visual language. Covers digital processes as applied to sculptural works, installation and site specificity, with an open approach of experimentation and risk taking. The objective is to establish individualized studio practices that will continue into the post-academic stages of students' artistic practices.

VA 3090 - Advanced Textiles

3 Credits
Fiber sculpture using basic fiber construction principles and processes. Meets with VA 2090.

VA 3100 - Advanced Digital Imaging

3 Credits
An exploration of electronic media as the primary tool for refining an individual approach to art-making. This class is structured to address the integration, expansion, and deepening of a conceptual reference point. Prer., VA 2100 or permission of instructor. Meets with VA 4100.

VA 3110 - Intermediate Photography

3 Credits
Exploration of photographic concepts dealing with the development of personal expression and a continuation of photographic technique. Prer., VA 2110 or VA 2150 or permission of instructor.

VA 3120 - Intermediate Artists' Books

3 Credits
Emphasis will be placed on the sculptural aspects of the book as an art object, including experimentation with a variety of media and formats. May meet with VA 2120 or VA 4120. Prer., VA 2120.

VA 3130 - Intermediate Painting

3 Credits
Expands upon the fundamental principles of painting begun in VA 2130. Emphasis is on conceptual development through the continued use of perceptual art-making approaches, as well as the use of experimental processes and alternative media and formats. Prer., VA 2130 or permission of instructor.

VA 3150 - Investigations in Contemporary Painting and Drawing

3 Credits
Through the thematic development of their creative work, students will examine the form, content, and context of contemporary painting and drawing practice. Subjects examined include the historical intersection of these fields and the importance of developing a personal, passionate, and pertinent expressive language. Prer., VA 2010 or VA 3130.

VA 3160 - Alternative Photographic Processes

3 Credits
Learn the fundamentals of silver and non-silver alternative photographic processes. Explore the creative possibilities of a variety of experimental and historic processes through non-observational photography. Study historic and contemporary artists. Prer., VA 2110 or permission of instructor.

VA 3170 - The Plastic Camera

3 Credits
Explore the beauty and freedom to create compelling conceptual and formal images within a low-fidelity aesthetic using a Holga, medium format inexpensive "toy" camera. Learn black-and-white film developing and darkroom skills. Prer., VA 2110 or permission of instructor.

VA 3190 - Advanced Weaving

3 Credits
Continuation of VA 2190, with both four- and eight-harness loom work and 3-D forms.

VA 3200 - Video Art

3 Credits
Create videos through a variety of conceptual and stylistic approaches including: appropriation, installation, stop motion animation, narrative, documentary and abstraction. Explore the history of video from its inception in the 1960's through contemporary practices. Prer., VA 1010, VA 1020, VA 1040, or permission of instructor.

VA 3440 - Advanced Papermaking

3 Credits
A continuation of VA 2440 with advanced processes and dyeing techniques.

VA 3980 - Seminar in Studio Problems

3 Credits
Required visual arts course emphasizing the thematic development, articulation of content, and consideration of processes necessary to complete a body of work reflecting personal expressiveness. Req., Junior level standing in Visual Art or permission of instructor. Concurrent enrollment with AH 3860 is required.

VA 4010 - Contemporary Drawing: An Interdisciplinary Approach

3 Credits
Explores drawing as an interdisciplinary practice by critically engaging its processes with disciplines outside of its traditional context. Emphasis is on conceptual development through the creation of a body of artwork and through a critical investigation of drawing's relationship with the larger world. Prer., VA 3010 or VA 3150 or permission of instructor.

VA 4030 - Internship in Visual Arts

1-3 Credits
Supervised opportunities for advanced studio students to apply relevant concepts and skills in professional situations. Pass/Fail only. Prer., Permission of advisor.

VA 4100 - Adv Projects in Electronic Imaging

3 Credits
Emphasizes the articulation of a personal aesthetic, independent project development, and advanced expertise in multiple programs. Prer., VA 3100. Meets with VA 3100.

VA 4110 - Advanced Photography

3 Credits
Exploration of advanced concepts and tech-

niques dealing with the development and execution of a long-term photographic project. Prer., VA 3110 or permission of instructor.

VA 4120 - Advanced Artists' Books

3 Credits
Intended for students with previous experience in the book arts. Emphasis will be placed on sculptural mixed media aspects of book construction and on unique personal expression in the book format. Prer., VA 3120.

VA 4130 - Advanced Painting

3 Credits
Utilizes a variety of painting media and processes to create a personal, passionate, and culturally relevant artistic language. Special emphasis is placed on helping students develop a critical understanding of both the work they produce and the larger role of painting in contemporary art and culture. Req., VA 3130 or VA 3150 or permission of instructor.

VA 4440 - Contemporary Handmade Papermaking Techniques

3 Credits
Supplemented with lectures on historical methods. Includes in-depth exploration of pulp varieties and coloring processes, as well as numerous three-dimensional possibilities.

VA 4980 - Professional Seminar

3 Credits
A required course for visual art majors. Preparation for a professional art practice including portfolios, resumes, marketing and gallery representation, contracts, artist statements, grants, exhibition organization, legal liabilities and obligations, and graduate school applications. Approved for Compass Curriculum requirement: Summit. Prer., VA 3980 and AH 3860 or permission of instructor.

VA 9400 - Independent Study in Visual Art

1-4 Credits
Independent Study in Visual Arts undergraduate. May be taken in any media with any full-time professor for up to 4 credit hours, by arrangement.

VAPA - Visual & Performing Arts

VAPA 1020 - Ethnography of Performing Arts

3 Credits
Through the study of ethnography, students learn to describe, compare, and write about performance and cultural practices. Investigate performances from around the world, including ritual, spirit possession, and staged dramas. Examine how performance creates meaning and shapes social life.

VAPA 1050 - Visual and Performing Arts Foundation

3 Credits
An interdisciplinary foundational topics course integrating the theory and practice of a minimum of three disciplinary processes and approaches from across the arts (art history, film studies, gallery management, music, theatre, visual arts) in a thematic/conceptually-based course. Topics will vary. See course schedule for specific topics.

VAPA 1100 - Art in Time and Space

3 Credits
Explores time and space in the creation, perception, exhibition, and performance in contemporary art practice: audio, film, performance, and visual art. Examines experimental and traditional art forms, historical and contemporary theories, and collaborations across a variety of creative and cultural contexts.

VAPA 1500 - Arts Innovations: Methods and Practices

3 Credits
Arts Innovations is an interdisciplinary foundation course exploring the nature, social context and application of innovation and creativity across a variety of fields, such as art history, film, music, theatre, visual arts, sciences and entrepreneurship. Approved for Compass Curriculum requirement: Writing Intensive.

VAPA 3900 - Theory and Practice in the Visual Performing Arts

3 Credits
A thematic/conceptually based advanced exploration of the integration of the visual and performing arts. The topic will develop the intersection/collaboration of a minimum of two disciplinary processes and approaches, focusing on the integration of theory, practice, or both, between the intersecting disciplines of the topic. Topics will vary depending on the semester. Prer., Any one VAPA 1000-level course, or permission of instructor.

VAPA 3910 - Animating the Human

3 Credits
Animation in its various forms and practices brings together the discussions most central to the visual and performing arts in the arenas of critique, theory and application. This course will examine the issues of representation, of concepts of the human, and of the significance of animation forms and choices in the exploration of these issues through a combination of applied and critical study. Prer., One VAPA 1000-level course.

VAPA 3920 - Folk Arts, Folk Expressions, and Folkscapes

3 Credits
This course investigates different cultural expressions from belief systems to folk performances, vernacular architecture, and yard art where ingenuity creates senses of place, action, and performance. Includes visits to collections and folk art sites plus folk craft workshops. Meets with AH 3920. Prer., Any one 1000-level VAPA course, or permission of instructor.

VAPA 3950 - Sound Art: Creative Sonic Worlds and Practices

3 Credits
This course will explore sound art as a multidimensional "meta-genre," situated in time in both physical and virtual space. Imbedded in many interdisciplinary practices across the arts, students will investigate these sonic landscapes and build a clear picture of creative work throughout the 20th Century and beyond. Prer., Any one 1000-level VAPA course, or permission of instructor.

VAPA 3960 - Nationalism, Romanticism, and Melodrama

3 Credits
An in-depth look at theatre of the 19h century from the French Revolution to the Grand-Guignol. Emphasis on melodrama and related examples from visual art and music. Meets with THTR 3960. Any one 1000-level VAPA course, or permission of instructor.

VAPA 3970 - The Nordic Legacy

3 Credits
An in-depth look at the art of the Scandinavian countries with a specific focus on Henrik Ibsen, August Strindberg, Edvard Munch, and Ingmar Bergman. Meets with THTR 3970.

Prer., Any one 1000-level VAPA course, or permission of instructor.

VAPA 3980 - The Manifestoes of the Avant-Garde

3 Credits
An in-depth look at the history, practice, and manifestoes of the major artists of the historical Avant-Garde, from 1880-1950. Meets with THTR 3980. Prer., Any one 1000-level VAPA course, or permission of instructor.

VAPA 3990 - Performance Art

3 Credits
Investigates the nature, social context, and application of performance art as it pertains to the interarts, multimedia, and other forms of interdisciplinary performance practice. Students learn about and create performance art combining multiple disciplines through the practice of this field. Prer., Any one 1000-level VAPA course, or permission of instructor.

VAPA 5950 - Sound Art: Creative Sonic Worlds

3 Credits
This course will explore sound art as a multidimensional interdisciplinary genre that involves music, sound, and environment, but often spans the distance across other arts fields and disciplines.

VAPA 9400 - Independent Study

1-6 Credits
Undergraduate independent study in Visual and Performing Arts with a full time professor by arrangement.

WEST – Women's & Ethnic Studies

WEST 1010 - Introduction to Social Justice Studies: Leadership, Inclusion, and Engagement

3 Credits
Through critical analysis, this course focuses on how systems of inequality are maintained and perpetuated, with an emphasis on the concept of social change. Approved for LAS Social Science area and Cultural Diversity requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. GT-SS3.

WEST 1310 - A Lab of Her Own: Science and Women

3 Credits
Introduction to natural science and its methods for non-science majors. Focuses on women's participation in both the formation of scientific concepts and the development of methodology. Modern concepts of science and mathematics with an emphasis on women's contributions to these fields will be presented. Also offers a feminist critique of the traditional methods of science. Approved for the LAS Natural Science area requirement. Meets with PES 1310 and PHIL 1310.

WEST 1400 - Intro to Restorative Justice

3 Credits
This course introduces the principles and practices of restorative justice. Students will examine specific restorative methods and models, and will have hands-on opportunities to learn and practice restorative dialogue facilitation and conflict conversation skills, becoming trained RJ facilitators by the course end. Meets with SOC 1400 and CJ 1003.

WEST 2020 - Introduction to Diversity Issues

3 Credits
Through critical analysis, this course will examine the impact that categories of difference have on our lives, the history of discrimination in society, and how systems of inequality are maintained and perpetuated. Open only to students who have NOT taken WEST 1010 (formerly WEST 2010). Approved for Cultural Diversity requirement.

WEST 2030 - Hiphop and the Performance of Identities

3 Credits
This course uses Hiphop as a medium to explore identity narratives in U.S. culture. It is not a chronological history nor an exhaustive study of Hiphop culture, but a practical use of Hiphop as a tool to access multiple dramas in converging identity developments across the United States with global effects. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Prer., WEST 1010 (formerly WEST 2010).

WEST 2040 - Global Black Women Writers

3 Credits
This course explores the fictional and biographical narratives of black women writers around the globe for intersections of race, gender, class, sexuality, religion and other positionalities in their socially and historically contextualized experiences. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

WEST 2070 - Foundations in Native American Studies

3 Credits
Introduces students to current theories and methods in Native American Studies. Designed to give students a foundation in the discipline, providing needed historical and political background. A preliminary course to undertake the Certification in Native American Studies offered by WEST. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Prer., WEST 1010.

WEST 2500 - Race and Gender at the Movies

3 Credits
Through critical analysis, this class will focus on race and gender in movies to facilitate an understanding of students' own identities, roles, and behavior in society, and the potential for social change. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior; Inclusiveness (Global/Diversity). Prer., WEST 1010 (formerly WEST 2010).

WEST 2900 - Special Topics Lower Division

1-4 Credits
Allows lower-division study of a specific topic. Cannot be repeated for credit. Prer., WEST 1010 (formerly WEST 2010).

WEST 3010 - Women in Politics

3 Credits
An examination of the role of women in U.S. politics. Topics include a historical perspective of women's political activity, the political interests and group activities of women, legal status of women, political attitudes of and toward women, and women's political behavior. Meets with PSC 3010.

WEST 3020 - Me, Myself, and I: Life Writing, Autobiography and the Creation of the Self

3 Credits
Designed to introduce students to the manner in which identity has been conceptualized in terms of race/ethnicity, gender, ability, class, sexuality, cultural heritage, and nation. The

manner in which artists and authors from various backgrounds have positioned themselves as subjects within both their own communities and within dominant society will be considered. Approved for the LAS Humanities area requirement. Prer., WEST 1010 (formerly WEST 2010).

WEST 3030 - Dis/Ability Studies in Education

3 Credits
An introduction to how disability, race, class, sexual orientation, and gender are defined, represented, and acted upon in schools today. Students will examine school as a social/political environment where the meaning of disability can be understood in democratic ways.

WEST 3040 - Women Around the World

3 Credits
Provides a global, cross-cultural perspective on women, using an anthropological framework to examine women's status, issues, and general cultural experience in the context of gender systems of different types of societies. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Prer., WEST 1010 (formerly WEST 2010), or ANTH 1040, or permission of instructor. Meets with ANTH 3040.

WEST 3050 - Race and Ethnicity in American Politics

3 Credits
An examination of the role of U.S. ethnic minority groups in American politics from the perspectives of the groups themselves. Topics will include historical and contemporary perspectives on the political activities, interests, and legal status of U.S. ethnic minorities; the relationship of power, race/ethnicity, class, gender, ability, and sexual orientation, etc. in determining the effects of the political system on these groups; and the impact of these groups on the political system. Meets with PSC 3050.

WEST 3060 - Multi-Racial Identities

3 Credits
This course posits a more complex theoretical framework with which to approach and understand multi-racial and multi-ethnic identity formations, especially as they pertain to intersecting categories such as class, gender, sexuality, ability, etc. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., WEST 1010 (formerly WEST 2010).

WEST 3070 - Global Men and Masculinities

3 Credits
With the recent emergence of critical masculine studies, conversations of manhood(s), masculinity(ies), and male identity(ies) have moved to the foreground of academic and popular inquiry. This course will examine a diversity of contemporary roles and experiences of masculinities within domestic and global public discourses through the intersectionality of race, class, ethnicity, sexuality, and gender politics produced through scholarship, film, international affairs and popular media. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior.

WEST 3090 - Peep Show: Sexuality in Popular Culture

3 Credits
Examines the significance of popular culture in constructing social identities and reinforcing ideologies of sexuality. Critically and intersectionally analyzes the cultural production of sexual scripts vis-a-vis television, film, advertising, pornography, internet, and music lyrics and videos. Approved for LAS Cultural Diversity and Social Science area requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior.

WEST 3100 - Women of Color: Image and Voice

3 Credits
Examines how the intersections of race, ethnicity, and gender are constructed both within and against traditional U.S. feminism and gender critiques. Addresses areas of divergence from mainstream feminism, as well as the construction of alternative representations by women of color. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures.

WEST 3110 - Women and Religion

3 Credits
Examines the ways women have been and continue to be viewed in various religions through comparing sacred and other texts with actual religious practices and beliefs. Engenders an appreciation of the tension between the ideal expectation for and the real possibilities available to women in religious traditions. Meets with PHIL 3110.

WEST 3130 - Gender, Race, and Sexuality

3 Credits
An introductory course that presents both the history of philosophical treatments of women and contemporary philosophical analyses of women's social, political, artistic, scientific, and philosophical roles. Approved for LAS Cultural Diversity requirement. Prer., WEST 1010 (formerly WEST 2010) or PHIL 1000. Meets with PHIL 3230.

WEST 3140 - Women in Classical Antiquity

3 Credits
Analysis of the philosophical views of women and by women in ancient Greek, Roman, and Egyptian thought. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with HIST 3010 and PHIL 3140.

WEST 3150 - Power, Privilege, and Social Difference

3 Credits
Examines the processes and conditions that produce the systems of differences and privilege shaping our lived experiences. Critically analyzes the prevailing cultural ideologies surrounding class, race, gender, sexuality, and ability. Emphasizes awareness, respect, justice, and resolution. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 1110 or equivalent. Meets with SOC 3250.

WEST 3160 - Women, Visual Arts, & Culture I

3 Credits
A survey of the lives and contributions of women artists from the Renaissance to c. 1900. The primary objectives are to introduce issues of gender in the production of visual culture and familiarize the student with the critical literature of art history. Prer., permission of instructor. Meets with AH 3250.

WEST 3180 - Introduction to Feminist Film, Video, and Digital Media

3 Credits
A survey of major themes in feminist independent film, video, and web-based projects

produced since the mid-1970s. Meets with AH 3280.

WEST 3220 - Native Communities

3 Credits
Examines the development and current nature of indigenous populations world-wide, with in-depth analyses of Native America. Includes issues of social structure, collective identity, cultural survival, and access to resources. Also examines consequences of public policy and development policy. Prer., WEST 1010 (formerly WEST 2010), SOC 1110, or SOC 2500. Meets with SOC 3270.

WEST 3230 - The Chicano Community

3 Credits
Study of the origin, development, and current order of the Chicano community. Includes studies of the "Barrio," ethnic-identity, social values, and the consequences of prejudice and discrimination. Prer., SOC 1110 or SOC 2200. Meets with SOC 3230.

WEST 3240 - African American Community

3 Credits
Study of the origin, development, and contemporary nature of the black community. Encourages an understanding of black culture and values, and the consequences of prejudice and discrimination. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., WEST 1010 (formerly WEST 2010), or SOC 1110, or SOC 2200. Meets with SOC 3240.

WEST 3250 - The Prehistory and History of Native American Cultures of the Southwest

3 Credits
The prehistory and ethnography of the Indian cultures of the Southwest. Approved for LAS Cultural Diversity requirement. Meets with ANTH 3250.

WEST 3260 - Women, Visual Arts, & Culture II

3 Credits
Introduction to feminist theory and women's artistic production from 1970 to present. Focuses on how women's art attempts to resist normative ideals of femininity, subvert aesthetic hierarchies, and illuminate the intersections of race, gender, and sexual orientation. Prer., AH 2000 or permission of instructor. Meets with AH 3260.

WEST 3270 - Archaeological Approaches to Gender and Sexuality

3 Credits
Examines archaeological approaches to studying gender and sexuality in past societies. Discussion of the theoretical and methodological implications of these archaeological approaches and analysis of various case studies, spanning periods from the Paleolithic to the recent past. Prer., ANTH 1020. Meets with ANTH 3280.

WEST 3280 - The Asian American Community

3 Credits
A general introduction to Asian American Studies. Surveys Asian American social organizations and political history from the 1800s to the present through the lens of immigration, family, labor, community, activism, and resistance. Prer., WEST 1010 (formerly WEST 2010), or SOC 1110, or SOC 2200. Meets with SOC 3280.

WEST 3290 - Perspectives on Race and Ethnic Relations

3 Credits
A survey of racism, discrimination, prejudice, and an exploration of the relationships between dominant and minority groups in selected areas of the world. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., SOC 2200 or consent of instructor. Meets with SOC 3290.

WEST 3300 - Methodologies in Women's and Ethnic Studies

3 Credits
Examines methodologies, the research process, and epistemological and ethical implications from a range of perspectives depending on the instructor teaching the course. Emphasizes the interrelationship among social power, inequality, and knowledge production. Provides conceptual tools for understanding the major methodological paradigms and for critically analyzing the issues integral to the research process. Prer., WEST 1010 (formerly WEST 2010).

WEST 3310 - Sociology of the Family

3 Credits
The family as a social institution. Historical development and contemporary cross-cultural analysis with emphasis on the contemporary American family. Prer., Six hours of Sociology. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Meets with SOC 3310.

WEST 3320 - African American Families

3 Credits
Examines the various manifestations of "Family" within the African American community and highlights the historical and contemporary structural forces that contributed to these shifting arrangements. Emphasis is also placed on gender and class variations in black family experiences. Prer., WEST1010 (formerly WEST 2010). Meets with SOC 3320.

WEST 3330 - Restorative Dialogue

3 Credits
Restorative practices are used in our judicial system, schools, and the work place. This highly interactive course will focus on the fundamental principles and practices of restorative justice (a victim-centered response to harm) and restorative dialogue (conflict conversation skills). Prer., SOC 1400 or WEST 1400 or CJ 1003; or the GPS 1010 section, Peacebuilders. Meets with SOC 3330 and CJ 3230.

WEST 3350 - Psychology of Diversity

3 Credits
A basic survey of myths and realities of multiculturalism and diversity using the theories and data from several subfields within psychology. Racial and ethnic diversity are emphasized, but diversity due to gender, age, sexual preference, and socioeconomic status will also be explored. Prer., PSY 1000. Meets with PSY 3450.

WEST 3360 - U.S. Latina/o Literature

3 Credits
Introduces students to a range of U.S. Latina/o writing, and engages them in the ongoing debate regarding how Latina/o identity is constructed in both a domestic and global/transnational context, with special focus on the intersectional roles of race/ethnicity, class, gender, sexuality, and disability. Approved for LAS Cultural Diversity requirement. Meets with FCS 3360. Prer., WEST 1010 (formerly WEST 2010).

WEST 3380 - Caribbean Literature, History, and Theory

3 Credits
Introduces students to a wide range of literary

and artistic works from various nations in the Caribbean. Approached from a historical and a cultural studies perspective, it will highlight the literary and artistic expressions of writers and artists residing both on and off the islands, and explore the manner in which they have been inscribed by western culture and, in turn, transcribed or transformed their national and cultural identities. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with FCS 3380.

WEST 3400 - Advanced Theory: An Intersectional Approach

3 Credits
Examines foundational and contemporary theories of race, gender, class, sexuality, disability, and environmental justice within domestic and global contexts, with particular focus on the concepts of oppression, privilege, intersectionality, resistance, and social change. Prer., WEST 1010 (formerly WEST 2010).

WEST 3420 - North American Indians

3 Credits
A survey of the native cultures of America north of Mexico. Examines major institutions by culture area and type of social organization. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., ANTH 1040 or ANTH 2400 or consent of instructor. Meets with ANTH 3420.

WEST 3430 - African American Art

3 Credits
Introduction to contemporary (1970-) African American art forms with inclusion of traditional African art's influence on American Black culture. Meets with AH 3430.

WEST 3440 - Sex and Gender in Islam

3 Credits
A historical perspective of women's status and rights in the teachings of Islam. Explores specific issues, including women's sexual, economic, and inheritance rights as well as differences between Muslim women's lives in Sunnah and Shia communities.

WEST 3470 - Criminology

3 Credits
A basic survey course in criminology. The nature and development of law, theories of causation, empirical studies, crime, delinquency, courts, police, and corrections are studied. Approach is multidisciplinary. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 3400.

WEST 3480 - Global Women's Issues

3 Credits
Examines global women's issues from an interdisciplinary perspective. The transnational approach considers key ideas related to gender, race, class, sexuality, and ability, with a focus on power and inequality. Topics include globalization, politics, identity, religion, culture, media, and violence. Approved for LAS Global Awareness requirements. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity).

WEST 3490 - Youth Gangs

3 Credits
A sociological examination of youth gangs. Factors related to formation and maintenance of youth deviant culture in different historical periods. The social construction of gangs, gang resistance to social control, and criminalization of youth of color. Structural, community, and neighborhood influences. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 3490.

WEST 3520 - History of Latinos in the United States

3 Credits
Course covers the history of U.S. Latino communities and Latin American immigrants to the United States from the 1820s to the present. Approved for LAS Cultural Diversity requirement. Meets with HIST 3520.

WEST 3550 - Native American Literature

3 Credits
Provides students with the necessary cultural and literary backgrounds to understand and appreciate some of the major works of Native American literature. Approved for LAS Humanities area requirement. Approved for Compass Curriculum requirement: Explore-Arts, Humanities, and Cultures. Prer., ENGL 1500 or ENGL 1900 or WEST 1010 (formerly WEST 2010), and ENGL 1310 or validated equivalent.

WEST 3560 - Women and Aging International: Diversity, Challenges, and Contributions

3 Credits
Overview of diversity in the aging experience for women throughout the major regions of the world: Americas, Africa, Middle East, Asia, and Europe. Explores current, historical, social, economic, legal, and health realities of older women with emphasis on cultural roles and expectations. Approved for LAS Global Awareness requirement. Meets with GRNT 3560.

WEST 3580 - Immigrant Histories

3 Credits
Examines the history of immigrants/migrants from Latin America, Africa, the Middle East, and Europe from 1840 to the present. Emphasis is on U.S. immigration laws, the development of ethnic-based communities, and connections to U.S. policy. Approved for LAS Cultural Diversity requirement. Meets with HIST 3580.

WEST 3600 - Contemporary African American Literature

3 Credits
Provides students with the necessary cultural and literary background required to understand and appreciate some of the major works of African American literature. Prer., ENGL1310 or validated equivalent and ENGL 1500 or ENGL 1900 or WEST 1010 (formerly WEST 2010).

WEST 3610 - Gender and Society

3 Credits
Examines the social construction of gendered difference and the consequences of that difference for individuals, relationships, social institutions, and society in general. The course emphasizes critical analysis and encourages personal contribution. Approved for LAS Social Science area requirement. Prer., 6 hours of sociology or consent of instructor. Meets with SOC 3610.

WEST 3620 - Media and Consumption: Monopolies, Myths, and Misrepresentations

3 Credits
Students will analyze the monopolies, myths, and misrepresentations propagated by the media industry to better understand the consequences of media messages on ourselves, on our society, and on our planet. Approved for LAS Social Science area requirement. Approved for Compass Curriculum requirement:

Explore-Society, Health and Behavior; Sustainability. Prer., WEST 1010 (formerly WEST 2010).

WEST 3630 - Gender and Race in Biblical Literature

3 Credits
This course examines the presence(s), result(s), and interpretation(s) of gender and race in biblical literature and the issues and problems those categories present to the reader. Prer., WEST 1010 (formerly WEST 2010). Meets with PHIL 3630.

WEST 3660 - Community Service and Learning

1-4 Credits
Provides students the opportunity to put into practice the theoretical knowledge gained in WEST courses within the context of placements with community-based organizations. Prer., WEST 1010 (formerly WEST 2010). Meets with SOC 3570.

WEST 3680 - Islam and the West: Contacts, Representations, and Approaches

3 Credits
Examines how the history of contacts produced and affected contemporary understanding of Islam and the West. Considers cultural, trade, and diplomatic contact in different historical periods, and the way that contact is negotiated through gender, race, class, and religion. Approved for Global Awareness requirement. Meets with HIST 3680.

WEST 3710 - Good Wives and Nasty Wenches: American Women's History, 1607-1877

3 Credits
A survey of the history of American women from the Colonial era through the Civil War, concentrating on the nineteenth century. Introduces students to the changing economic, gender, and familial roles of American women. Meets with HIST 3710.

WEST 3720 - From Slavery to Freedom: Slavery and African-American Experience in Colonial and Antebellum America

3 Credits
Introduces students to the major political, social, and cultural developments in the history of African Americans from 1619 through Reconstruction. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with HIST 3720.

WEST 3740 - African American Social and Political Thought, 1790-1980

3 Credits
Surveys the historical basis of socio-political thought in North America's diasporic (African American) communities. Meets with HIST 3740.

WEST 3800 - Restorative Discipline in Schools

3 Credits
Exposes students to the restorative justice perspective as applied in the school setting. Investigates how restorative practices can strengthen schools through transformation of the classroom, including improved school safety and reduced discipline infractions, suspensions, and expulsions. Prer., SOC 1400 or WEST 1400 or CJ 1003; or the GPS 1010 section, Peacebuilders. Meets with SOC 3800.

WEST 3820 - Native American Languages and Cultures

3 Credits
Examines Native American languages focusing on their cultural value in traditional/historic and contemporary contexts. Students study comparative linguistic typology of Native American languages, endangerment and revitalization efforts, and explore relations among Native American languages, cultures, nations, and bilingual needs. Prer., ANTH 2800 or ANTH 3420 or WEST 3420 or WEST 2010. Meets with ANTH 3820.

WEST 3900 - Special Topics Intermediate

1-7 Credits
Allows intermediate study of a specific topic. Courses will vary and can be repeated for credit up to 9 credits as long as the topics are different. Prer., WEST 1010 (formerly WEST 2010).

WEST 3950 - Women in Film

3 Credits
Selected topics dealing with the various roles of women in international cinema history. Meets with FILM 3950.

WEST 3990 - Readings in Multiethnic Literature

3 Credits
This course introduces students to the manner in which authors have engaged with the question of identity formation, and the manner in which they have conceptualized identity in terms of categories such as race, class, gender, sexual or religious orientation, ability, and age, with particular attention to issues of culture, language, nation, history, and memory. More specifically, this course will consider the ways in which authors from various backgrounds have used their writing to position themselves as subjects within, and engage in a dialogue with, both their own communities and within dominant society. Topic varies by semester and instructor. Approved for Compass Curriculum requirement: Writing Intensive.

WEST 4020 - Significant Support Needs

3 Credits
This course presents the development, implementation, and evaluation of instructional programs for students with severe cognitive and physical needs at the elementary and secondary levels. Service delivery models, issues, and intervention approaches are examined in light of efficacy research. Thirty (30) hours of field experience is required. Prer., SPED 3000/5000, SPED 3001/5001, CURR 4170/5170. Coreq., SPED 4030/5030, TED 4570/5570. Meets with SPED 4020/5020.

WEST 4040 - Gender and Sexuality

3 Credits
Focuses on the various roles of women in American society within historical, socioeconomic, and cultural contexts; changes of these roles and contexts. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., 3 credits in WEST, or SOC 2250 or WEST 1010 (formerly WEST 2010). Meets with SOC 4040.

WEST 4050 - From the Harem to the War Zone: Women Writers Encountering the Orient and Occident

3 Credits
Examines the connection between the harem and war zone by examining Ottoman, Egyptian, American, and British 19th and 20th century travel accounts, blogs, memoirs, and novels. Considers the ways in which these two zones differ or overlap over time and place, exploring the historical realities of colonialism, empire, nationalism, and modernity. Central themes include the imaginary, feminism, identity, dislocation, war, and urban encounters. Approved for LAS Humanities area and

Global Awareness requirements. Approved for Compass Curriculum requirement: Writing Intensive. Meets with HIST 4050.

WEST 4060 - Middle East Women in Film

3 Credits
Focuses on the historical dimension of gendered society (family, personal status, war, feminism, and colonialism) in the Middle East and the ways that transnational filmmakers navigate and narrate various issues through feature film and documentary forms. Approved for LAS Global Awareness requirement. Meets with HIST 4060.

WEST 4080 - Men and Masculinities

3 Credits
A critical exploration of men and masculinities, exploring men as gendered beings. It explores manhood as a social construct, both historically and cross-culturally, and provides an overview of theories of male gender role development as well as a variety of topics including power and patriarchy; race, class, and sexuality; men in families; work; violence; health; friendship and intimacy; men's movements; and the growing field of men's studies. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Prer., WEST 1010 (formerly WEST 2010). Meets with SOC 4080.

WEST 4100 - Native American Perspectives on Museums

3 Credits
Explores the history of the museum enterprise vis-a-vis Native Americans: development of museum collections; poetics and politics of representation; the Native American Graves Protection and Repatriation Act (NAGPRA); and the reinterpretation of museology from indigenous perspectives, looking especially at the National Museum of the American Indian. Approved for LAS Social Science requirement. Approved for Compass Curriculum requirement: Explore-Society, Health and Behavior. Prer., Junior or Senior standing. Meets with MSGP 4100.

WEST 4120 - Indigenous Views on Sustainability: All My Relations

3 Credits
When Native people come together they say "All my relations," a phrase that lies at the heart of indigenous views on sustainability. This course explores its meaning and many of its implications for connectedness, relatedness, and sustainability. Approved for LAS Cultural Diversity and Social Science requirements. Approved for Compass Curriculum requirement: Sustainability; Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Prer., Junior or Senior standing.

WEST 4140 - Unnatural Disasters: Hurricane Katrina, Climate, and Our Future on a Changing Planet

3 Credits
Treating Hurricane Katrina and its aftermath as a springboard for discussion, this course will explore a range of themes regarding the political, economic, and ecological issues related to global climate change, one of the most pressing issues of our time. Readings and lectures will pay special attention to the role that categories such as race/ethnicity, class, gender, age, ableism and sexuality, etc. play in the disaster and response, especially in respect to issues of social and historical vulnerability; the political and social aftermath of the storm; and the cultural response to the destruction and the question of restoration and rebuilding. Prer., WEST 1010 (formerly WEST 2010). Meets with SOC 4140.

WEST 4160 - The Transatlantic Slave Trade: A Comparative, Cross-cultural Perspective

3 Credits
This course focuses upon and contextualizes the transatlantic slave trade within a comparative framework. It highlights the histories, perspectives, and cultural experiences of ethnic minority groups in the United States, Britain, and Ireland. It encourages students to compare the experiences of a wide range of oppressed peoples and groups in a global context, with special attention to the primary statuses of race/ethnicity, class, gender, sexuality, and ability.

WEST 4170 - The Empire Strikes Back: Postcolonial Literature, History, and Theory

3 Credits
This course introduces students broadly to colonial and postcolonial history, literature, art, and theory. Among other subjects, it will consider the manner in which colonized nations, continents, and regions such as India, Africa, Latin America, and the Caribbean have been inscribed by western thought and discourse, and how authors and artists from previously colonized nations have revised this same thought and discourse by inscribing them with their own indigenous or Creole forms. Approved for LAS Global Awareness requirement. Meets with HIST 3910.

WEST 4180 - Gender in International Politics

3 Credits
Looks at issues of gender and sexuality in an international context. Covers war and militarism and their effect on women, the international division of labor, the effects of religious fundamentalisms, international trafficking in women, and sexual violence issues. Meets with PSC 4180.

WEST 4200 - Sociology of Poverty

3 Credits
Consideration of structural origins of poverty; the underclass and the dual economy. Analysis and evaluation of consequences of poverty, especially in relation to family, children, and career. Review of anti-poverty programs. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 4200.

WEST 4280 - Native American Philosophical Thought

3 Credits
Explores ways Native Americans live, know, think about and describe who they are, what the world is, and how humans should relate to the world. Students study theories that express the truths born of Indigenous knowledge and experience. Prer., Junior or Senior standing. Approved for Cultural Diversity requirement and LAS Humanities area requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Arts, Humanities, and Cultures.

WEST 4300 - Seminar: Sociology of Sport

3 Credits
Advanced analysis of sport from a sociological perspective. This course studies sport as social phenomena, structural relations, and a field of experience that has developed over time. Theoretical perspectives include Marxism, critical race theory, feminist theory, post-structuralism, and figuration theory. Req., SOC 1110. Meets with SOC 4300, SOC 5300, and SL 5000.

WEST 4310 - Seminar: Class, Stratification, and Power

3 Credits
Critical analysis of the theories and research on socioeconomic class and the reproduction of privilege, with a focus on the American class system. Addresses the prevailing cultural ideologies surrounding class as well as the ways in which class intersects with race, gender, and sexuality. Prer., 9 hours of sociology or consent of instructor. Meets with SOC 4310 and SOC 5310.

WEST 4340 - Indigenous Arts of the Americas

3 Credits
An in-depth investigation of the art forms and related social customs of cultures native to the Americas. Meets with AH 4340.

WEST 4380 - Globalization and Development

3 Credits
Analyzes the evolution of global interdependency, studies the interaction between local and global levels in the development process and impacts on areas such as economic, cultural, technological, environmental, ideological, political systems. Discusses transnational organizations, global women's agency, social justice movements, human rights networks. Approved for LAS Global Awareness requirement. Approved for Compass Curriculum requirement: Sustainability; Inclusiveness (Global/Diversity). Meets with SOC 4380 and SOC 5380.

WEST 4390 - Diversity Issues

3 Credits
Examines the impact that categories of difference have on our lives, the nature of discrimination in society, and how systems of inequality and oppression are maintained and perpetuated. Solutions for a more equitable world are identified. Approved for LAS Cultural Diversity requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 4390.

WEST 4400 - Indigenous Peoples and Cultures of the Southwest

3 Credits
Intensive study in cultural anthropology of the indigenous peoples and cultures of the Southwest. Prer., Consent of instructor. Meets with ANTH 4400.

WEST 4410 - Topics on Women in the Middle East

3 Credits
Examines issues facing women in the Middle East, including their economic status, political participation, violence, feminism, fundamentalism, and international development.

WEST 4440 - Hispanic, Chicano/a, and Mexican-American Literature

3 Credits
The literary manifestations of individuals of Mexican origin in theater, prose, and poetry. Taught in Spanish. Meets with SPAN 4440 and SPAN 5440.

WEST 4460 - Studies in U.S.-Mexico Border Literature

3 Credits
The literary manifestation of U.S.-Mexico border writers, including prose, poetry, essays and performance art. Some of the texts will be in Spanish, some will be in English. Taught in Spanish. Prer., consent of instructor. Meets with FCS 4460, SPAN 4460, SPAN 5460.

WEST 4470 - Intersections of Privilege

1-3 Credits
Hybrid/travel course built around the White Privilege Conference, designed to provide foundational knowledge; extend and maximize learning; provide an opportunity to connect the WPC experience with research and best practices in the field; and the apply knowledge gained there. Meets with SOC 4470/5470.

WEST 4480 - Racial Storytelling: Montgomery Travel Course

3 Credits
This hybrid travel course to Montgomery, Alabama uses an interdisciplinary exploration of the ways in which racial history and reality are constructed and given meaning through storytelling and narrative, and the ways in which relations of power imbue these narratives. Approved for LAS Cultural Diversity area requirement. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Navigate. Meets with SOC 4480 and SOC 5480.

WEST 4500 - Social Justice and Sustainability: Living Mindfully

3 Credits
Challenging social inequities and barriers to accessing education, healthy food, and healthy bodies, we will bridge social justice, climate, food, health, etc. and consider mindfulness as a way to heal our bodies, our relationships, and the world. Approved for LAS Social Science area and Cultural Diversity requirements. Approved for Compass Curriculum requirements: Inclusiveness (Global/Diversity); Sustainability. Prer., WEST 1010 (formerly WEST 2010).

WEST 4550 - Feminism, Sexuality, and Culture

3 Credits
An examination of selected philosophical issues in the context of recent developments in feminist thought. Considers the question of whether traditional patterns of philosophical thought express gender bias, and if so, why. Approved for the LAS Cultural Diversity requirement. Meets with PHIL 4550.

WEST 4620 - Race, Ethnicity, and Place

3 Credits
A geographical perspective of the dynamics and processes of racialization in various U.S. urban contexts. Maps the dynamic relationship between social relationships and the built environment. Meets with GES 4620.

WEST 4680 - Inequality USA

4 Credits
This course identifies how inequality is defined, measured, studied, and understood by geographers. Students will analyze quantitative and qualitative data sources to explain inequality in the U.S., and will conduct research identifying spaces of inequality in Colorado Springs. Approved for LAS Cultural Diversity requirement. Meets with GES 4680, GES 5680, SOC 4680, SOC 5680.

WEST 4700 - Global Feminisms

3 Credits
Identifies broad trends and changes in feminist interpretations and approaches to sexual politics, race, migration, religion, geopolitics, and globalization. A global look at women's oppression and strategies of resisting subordination through various transnational feminist praxis, theory, and case studies. Approved for Global Awareness requirement. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity); Explore-Society, Health and Behavior. Meets with SOC 4700 and SOC 5700.

WEST 4710 - Asian American History

3 Credits
Traces the social, political, economic, and cultural history of Asian Americans from the early settlements of the 19th century to the present. Meets with HIST 4710.

WEST 4760 - Women's Space, Women's Place: Women's Role in Changing the Face of the Earth

3 Credits
A re-examination of traditional aspects of cultural and regional geography from a feminist perspective. Meets with GES 4760.

WEST 4900 - Special Topics Upper Division

1-7 Credits
Courses will vary and can be repeated for credit up to 9 credits as long as the topics are different. Prer., WEST 1010 (formerly WEST 2010).

WEST 4910 - Selected Topics in History and Women

3 Credits
These courses are usually taught on a one-time basis. The subject matter will change from year to year and will cover an important but rarely taught subject in history.

WEST 4920 - Spiked: Spike Lee's Cinema

3 Credits
This course analyzes ways in which social identities are represented in American film, particularly through the cinematic lenses of director, producer, actor, and activist Spike Lee. Although this course will focus particularly on the interosculating representations presented by Lee, we will also contextualize his representations as elements of greater American filmic narratives around race, class, sexuality, and so forth gleaned from a variety of perspectives. Approved for LAS Humanities area and Cultural Diversity requirements. Prer., WEST 1010 (formerly WEST 2010). Meets with SOC 4920, SOC 5920.

WEST 4950 - Capstone Senior Seminar

3 Credits
A synthesis of what has been studied in the WEST program. Provides students the opportunity to develop a major research project and put into practice the theoretical knowledge gained in WEST courses within the context of placements with community-based organizations. Approved for Compass Curriculum requirement: Summit. Req., WEST 1010 (formerly WEST 2010), WEST 3300, WEST 3400. For WEST majors only, senior status recommended.

WEST 4960 - Juvenile Delinquency

3 Credits
Factors involved in delinquent behavior. Problems of adjustments of delinquents and factors in treatment and post-treatment and adjustment. Approved for Compass Curriculum requirement: Inclusiveness (Global/Diversity). Meets with SOC 4960 and SOC 5960.

WEST 9400 - Independent Study in WEST

1-4 Credits
Provides an opportunity for advanced students with good scholastic records to independently pursue the study of a subject of special interest. Prer., WEST 1010 (formerly WEST 2010) and consent of Director.

Administration & Faculty

ADMINISTRATION

CARLOS GARCIA
Associate Vice Chancellor for Administration and Finance
BA, MA, University of Texas at El Paso

KELLI J. KLEBE
Associate Vice Chancellor for Research & Faculty Development; Dean, Graduate School; Professor of Psychology
AA, Los Angeles Baptist College; BA, San Francisco State University; PhD, University of Minnesota

DAVID MOON
Senior Associate Vice Chancellor for Undergraduate Education and Academic Planning; Professor of Political Science
BA, Austin College, MA, PhD, University of Texas, Austin

VENKATESHWAR K. REDDY
Associate Vice Chancellor for Online Education and Initiatives; Dean, College of Business and Administration; Professor of Finance
MS, PhD, Pennsylvania State University

GARY REYNOLDS
Associate Vice Chancellor for Campus Planning and Facilities Management
BS, MS, Iowa State University

TERESA P. SCHWARTZ
Interim Executive Vice Chancellor for Academic Affairs; Associate Professor of Public Administration
BA, Oberlin College; MEd, University of North Carolina; MPA, PhD, University of Colorado Denver

GAYANNE SCOTT
Assistant Vice Chancellor for Finance and Human Resources
BS, University of Colorado Colorado Springs

PAMELA S. SHOCKLEY-ZALABAK
Chancellor; Professor of Communication
BA, MA, Oklahoma State University; PhD, University of Colorado Boulder

CHARLES SWEET
Vice Chancellor for Strategic Initiatives
BA, Duke University; JD, University of Virginia

SUSAN SZPYRKA
Senior Vice Chancellor for Administration and Finance
BA, MPA University of Colorado Colorado Springs

KEE R. WARNER
Associate Vice Chancellor for Inclusion and Academic Engagement; Professor of Sociology
BA, Haverford College; MPCD, University of Colorado Denver; MA, PhD, University of California, Santa Barbara

MARTIN WOOD
Senior Vice Chancellor of University Advancement & Chief Operating Officer
BS, MA, Emporia State University

DEANS

PETER A. BRAZA
Dean, College of Letters, Arts, and Sciences; Professor of Mathematics
BA, University of Wisconsin; MS, PhD, Northwestern University

CATHY CLAIBORNE
Associate Dean, College of Business; Professor of Accounting
BA, Carroll College; MAcc, PhD University of Tennessee

VALERIE MARTIN CONLEY
Dean, College of Education; Professor of Leadership, Research, and Foundations
BA, MA, University of Virginia; PhD, Virginia Tech

RAMASWAMI DANDAPANI
Dean, College of Engineering and Applied Science; Professor of Electrical and Computer Engineering
BE, Indian Institute of Science; MSEE, PhD, University of Iowa

BARBARA FRYE
Associate Dean, College of Education
BA, The Colorado College; PhD, University of Minnesota

MARTIN GARNAR
Dean, Kraemer Family Library; Professor of Library Science
MLIS, University of Denver; MA, BA, State University of New York at Binghamton

KELLI J. KLEBE
Dean, Graduate School; Associate Vice Chancellor for Research & Faculty Development; Professor of Psychology

AA, Los Angeles Baptist College; BA, San Francisco State University; PhD, University of Minnesota

STEPHEN LINHART
Dean of Students
BS, U.S. Air Force Academy; MPA, University of Colorado Colorado Springs

CHRISTINA MARTINEZ
Associate Dean, Kraemer Family Library
BA, Arizona State University; MA, University of Denver

VENKATESHWAR K. REDDY
Dean, College of Business and Administration; Associate Vice Chancellor for Online Education and Initiatives; Professor of Finance
MS, PhD, Pennsylvania State University

GEORGE E. REED
Dean, School of Public Affairs; Professor of Public Administration
BS, University of Central Missouri; MFS, George Washington University; PhD, Saint Louis University

NANCY L. SMITH
Dean, Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences; Professor of Nursing
BSN, MS, Adult Nurse Practitioner, California State University at Long Beach; MS, PhD, University of Colorado Denver

SANDY WURTELE
Associate Dean, College of Letters, Arts, and Sciences; Professor of Psychology
BA, University of Nebraska; MA, PhD, University of Alabama

DIRECTORS

JULIE ALBERTSON
Colorado Affiliate, Director of Project Lead the Way
BS, MS, PhD, Washington State University

ERICA ALLGOOD
Director, Communication Center
BA, University of Pittsburgh; MA, Kent State University; PhD, Northcentral University

Z. BENEK ALTAYLI
Director, University Counseling Center
BS, MA, Hacettepe University; PsyD, Colorado School of Professional Psychology

DAVID R. ANDERSON
Director of the Faculty Resource Center; Associate Professor of Chemistry and Biochemistry
BS, University of Minnesota; PhD, University of Colorado

TATIANA BAILEY
Director of the Southern Colorado Economic Forum
BA, Carleton University; MA, MAS, PhD University of Michigan

TRACY L. BARBER
Registrar
BSBA, BA, University of Arizona; MBA, University of Colorado Colorado Springs

IDA BAUER
Director, Family Development Center
BA, Brooklyn College

BRAD BAYER
Director, Student Life and Leadership
BS, MS, University of Wisconsin, La Crosse, Ed. Admin. Licensure, Saint Mary's University of Minnesota

CHRIS BEISWANGER
Director, Student Recruitment and Admissions Counseling
BA, MA, University of South Dakota

MEGAN BELL
Executive Director Auxiliary Community and Learning Initiatives
BA, University of Northern Colorado; MA, Washington State University

CANDIDA BENNETT
Director of Operations, Online and Academic Outreach
BS, University of Colorado Colorado Springs; MA, Webster University

JOHN BROCK
Director, Center for Economic Education; Senior Instructor of Economics
BS, U.S. Air Force Academy; MBA, University of Southern California; PhD, Cornell University

LORI BRYAN
Aging Initiative Project Director
AB, Bryn Mawr College; PhD, University of Pennsylvania

SUZANNE BYERLEY
Faculty Director of Instructional and Research Services Kraemer Family Library
BA, University of Colorado; MLS, Denver University

ROBERT E. CAMLEY
Director, UCCS Center of the Biofrontiers Institute; Director, Center for Magnetism and Magnetic

Nanostructures;
Director of Physics and Energy Science Graduate Studies; Distinguished Professor of Physics
BA, MA, PhD, University of California, Irvine

MINETTE CHURCH
Director, Heller Center for Arts and Humanities; Associate Professor of Anthropology
BA, University of Colorado Boulder; MA, PhD, University of Pennsylvania

ANTHONY J. CORDOVA
Director, CU Opportunity and MOSAIC, Multicultural Office for Student Access, Inclusiveness and Community
BA, MA, University of Colorado Colorado Springs

MATHEW A. COX
Director, Enrollment Management
BS, MS, University of Southern Mississippi

JEFF DAVIS
Executive Director, Auxiliary Facilities
BA, Western Washington College; MS, Western Illinois University

PAUL DENISTON
Director, Retail Sales
BS, University of Colorado Boulder

IDA DILWOOD
Director, Disability Services and University Testing
BA, MPA, University of Colorado Colorado Springs

JENNY DORRINGTON
Director, Mathematics Center; Assistant Professor Attendant Rank of Mathematics
BA, Bryn Mawr College; MA, PhD, Northwestern University

ROB DOUGHERTY
Executive Director, Physical Plant
BS, University of Southern Colorado; MA, University of Phoenix

JOSHUA DUNN
Director, Center for the Study of Government and the Individual; Chair, Political Science; Professor of Political Science
BA, Bob Jones University; MA, PhD, University of Virginia

E. JEANNE DURR
Executive Director, Human Resources
BA, Portland State University; JD, Lewis and Clark Law School

TABATHA FARNEY
Faculty Director of Web Services and Emerging Technologies
Kraemer Family Library
BS, MSLIS, University of Illinois at Urbana-Champaign

CAROLYN FOX
Executive Director, Planning, Design and Construction and University Architect
BArch, Syracuse University

BARBARA A. GADDIS
Executive Director, Office of First Year Experience and Student Retention
BS, University of Colorado Colorado Springs; MS, University of Colorado Boulder; MAT, Colorado College; PhD, University of Colorado Denver

MEGAN GALLEGOS
Director, Auxiliary Services Marketing
BS, University of Puget Sound; MBA, University of Colorado Colorado Springs

CHAD GARLAND
Director, University Center and Conference Services
BA, Ohio Wesleyan University; MEd, Grand Valley State University

GWENDOLYN LOGAN GENNARO
Director, Sponsored Programs
BA, University of Denver; MSS, University of Denver

NATHAN GIBSON
Director of Finance, Department of Athletics
BA, Azusa Pacific University

RALPH GIESE
Director of Operations, Residence Life and Housing
BS, University of Wisconsin at Green Bay

BRIAN GLACH
Director, LAS Extended Studies
BA, University of Colorado Boulder

RHONDA GLAZIER
Faculty Director of Collections Management
Kraemer Family Library
BSE, MLS, Emporia State University

CAITLIN GREEN
Development Director, Theatreworks
BA, MA, Sotheby's Institute of Art, London

BRANTLEY S. HAINES
Technical Director, Theatreworks
BFA, University of Colorado Boulder

JENNIFER HANE
Director of Alumni Relations and Annual Fund
BA, MPA, University of Colorado Colorado Springs

STEPHANIE HANENBERG
Executive Director, Health Services
BSN, Beth-El College of Nursing; MSN, FNP, University of Colorado Colorado Springs

MANDY HANSEN
Director for Global Engagement
BA, University of Pittsburgh; MPA, Alfred University; EdD, Northern Arizona University

MARK HAYES
Director, Dining and Hospitality Services
BS, Slippery Rock University; MPA, Indiana University; EdD, Edgewood College

ANDREA HERRERA
Director, Women's and Ethnic Studies Program; Professor of Women's and Ethnic Studies
BA, St. Joseph's University; MA, West Chester University; PhD, University of Delaware

THOMAS HUTTON
Executive Director, University Communications and Media Relations
BS, University of Kansas; MPA, University of Colorado Denver

MICHAEL KENNY
Director, UCCS Aging Center
BA, Colorado State University; MA, University of Northern Colorado; PhD, University of Denver

DAVID KHALIQI
Director, Pre-Collegiate Support and Success Center
BS, Colorado State University; MA University of Colorado Colorado Springs

STEPHEN W. KIRKHAM
Executive Director, Athletic Department
BA, University of Northern Colorado; MS, Fort Hays State University

DONALD KLINGNER
Director, Graduate Programs in Public Administration, School of Public Affairs; Distinguished Professor of Public Administration
BA, University of California, Berkeley; MA, The George Washington University; PhD, University of Southern California

LINDA KOGAN
Director, Office of Sustainability
BBA University of Wisconsin - Madison; MA, University of Colorado Colorado Springs

BEVERLY KRATZER
Director, Career Center
BA, MA, University of Colorado Colorado Springs

KARIN LARKIN
Director, Curation and Archaeological Services
Instructor of Anthropology
BA University of California at Santa Cruz; MA, PhD University of Colorado Boulder

ROBYN MARSCHKE
Director, Institutional Research
BA, Concordia College - Minnesota; PhD, University of Colorado Boulder

MICHAEL MARTINEZ
Director, Undergraduate Programs in Criminal Justice, School of Public Affairs; Senior Instructor of Criminal Justice
BS, Metropolitan State College; MCJ, University of Colorado Denver

DREW MARTORELLA
Executive Director, UCCS Presents
BA, Drew University

RASHELL MCCANN
Director, College of Business Undergraduate Programs
BA, Boston University

DAISY MCGOWAN
Executive Director, Galleries of Contemporary Art
BA, Colorado College

BRIAN MCPIKE
Executive Director and Chief of Police, Department of Public Safety
BA, University of Colorado Colorado Springs; MA, Webster University

STEVEN MEDLIN
Director, Student Financial Services
BS, University of Phoenix; MBA, University of Colorado Colorado Springs

TAMARA MOORE
Executive Director, Auxiliary Services
BS, University of Wisconsin, Stevens Point; MPA, University of Colorado Colorado Springs

DONNA MORACO
Director, Center of Excellence in Languages; Assistant Professor Attendant Rank of German
BA, Auburn University; MA, University of Georgia; MS, Troy State University; PhD, Utah State University

PHILLIP MORRIS
Program Director, Veteran and Military Student Affairs
BA, Concord University; MA, PhD, University of Florida

CARLA MYERS
Faculty Director of Access Services and Scholarly Communication
Kraemer Family Library
BA, University of Akron; MLIS, Kent State University

MICHELLE NEELY
Director, Writing Across the Curriculum and Portfolio Assessment; Assistant Professor Attendant Rank of English
BA, MA, PhD, University of Texas at Austin

MARGIE OLDHAM
Director, College of Letters, Arts and Sciences Community Relations and National Student Exchange
BA, University of Colorado Colorado Springs

ERIC M. OLSON
Director, Sports Management; Professor of Marketing and Strategic Management
BS, Lewis and Clark College; MBA, Portland State University; PhD, University of Minnesota

JERRY L. PHILLIPS
Director, Science Center; Professor Attendant Rank of Chemistry
BA, University of Colorado; PhD, Colorado State University

NINA A. POLOK
Director of Bachelor of Innovation and Organization Development
BS, PhD, University of Colorado Boulder; MBA, University of Colorado Colorado Springs

SARA HONN QUALLS
Director, Gerontology Center; Director, Lane Center; Professor of Psychology
BS, Middle Tennessee State University; MA, Phd, Pennsylvania State University

STEPHEN RECCA
Executive Director, Center for Human Security, School of Public Affairs
BS, United States Naval Academy; MA, Naval Postgraduate School

CARLEY RIES
Executive Director, Online and Academic Outreach
BA, University of of Nevada, Reno; Master of Business & Human Relations, Amberton University

JEVITA R. ROGERS
Director, Office of Financial Aid, Student Employment and Scholarships
BA, New England College

SKYLER RORABAUGH
Director, Recreation Center
ASc, Brown Mackie College; BSc, MSc, Fort Hays State University

MURRAY ROSS
Artistic Director, Theatreworks; Instructor Attendant Rank in Theatre
BA, Williams College; MA, University of California, Berkeley

CAROLYN RUPP
Controller, Director of Accounting
AAS, Pikes Peak Community College; BS, University of Phoenix; MBA, University of Colorado Colorado Springs

ROBERT SACKETT
Faculty Director of Interdepartmental Studies--Mathematics; Professor of History
BA, Grinnell College; MA, PhD, Washington University

PAMALA SAWYER
Director, Strategic Initiatives and Alumni Relations, School of Public Affairs
BA, MPA, University of Colorado Colorado Springs; MURP, University of Colorado Denver

VICKI SCHOBER
Medical Director of Student Health Services
BA, Northwestern University; MD, Indiana University School of Medicine

SUZANNE SCOTT
Budget Director
BA, MPA, University of Colorado Colorado Springs

JIM SPICE
Executive Director, Department of Parking and Transportation Services
BA, University of Colorado Colorado Springs

CONSTANCE M. STALEY
Director, Gateway Program Seminar; Professor of Communication
BS, Ball State University; MA, PhD, University of Colorado Boulder

MICHAELA STEEN
Director of Visual Resources, Visual and Performing Arts Department
BA, California State University, Long Beach; MA, University of Colorado Colorado Springs

DAVID WEISS
Director of the Compass Curriculum; Associate Professor of Chemistry
BS, University of California, Riverside; PhD, University of Kansas

FACULTY

HALEH ABGHARI
Instructor of Music
BA, University of California, Davis; MM, Peabody Institute

GENE D. ABRAMS
Professor of Mathematics
BA, University of California, San Diego; MS, PhD, University of Oregon

JOHN R. ADAMS
Instructor of Mechanical and Aerospace Engineering
BS, University of Western Australia; PhD, Rostock University, Germany

HEATHER ALBANESI
Chair, Sociology; Associate Professor of Sociology; Director of Graduate Studies
BA, Wesleyan University; MA, PhD, University of California, Berkeley

JULIE ALBERTSON
Senior Instructor of MAE; Colorado Affiliate, Director of Project Lead the Way
BS, MS, PhD, Washington State University

SABINE ALLENSPACH
Instructor of Biology
BA, Fachhochschule Nordwestschwiez; MSc, University of Colorado at Colorado Springs

MARY MARGARET ALVARADO
Senior Instructor of English
BA, University of Notre Dame; MFA, University of Iowa

ANN AMICUCCI
Assistant Professor of English; Director of First Year Rhetoric and Writing Program
BA, Dent State University; MA, Youngstown State University; PhD, Indiana University of Pennsylvania

DAVID R. ANDERSON
Director, Faculty Resource Center; Chair, Chemistry; Associate Professor of Chemistry and Biochemistry
BS, University of Minnesota; PhD, University of Colorado

CYNTHIA APPLEGATE
Senior Instructor of Chemistry
BS, Oklahoma State University; MS, University of Oklahoma

LORRAINE ARANGNO
Senior Instructor of Philosophy
BA, BS, Mercer University; MA, University of Georgia; PhD, University of Colorado Boulder

CARLOS A. PAZ de ARAUJO
Symetrix Professor of Electrical and Computer Engineering
BS, MS, PhD, University of Notre Dame

GEOFFREY R. ASHTON
Assistant Professor of Philosophy
BA, Loyola Marymount University; MA, University of Chicago; MA, PhD, University of Hawai'i at Manoa

GREGORY AUGSPURGER
Instructor, College of Business
BA, Wabash College; MA, MBA, University of Colorado Colorado Springs

MARIA F. AUGUSTEIJN
Professor Emeritus of Computer Science
BS, Technical University, Delft, The Netherlands; MS, University of Wisconsin, Madison; PhD, Ohio University

LAURA AUSTIN-EURICH
Senior Instructor of Communication; Director of Undergraduate Studies, Communication
BA, MA, University of Colorado Colorado Springs

WILLIAM E. AYEN
Senior Instructor, College of Business
BS, University of Wisconsin, Platteville; MS, University of Missouri, Rolla; PhD, The Ohio State University

MARGARET A. BACON
Professor Emerita of Education
BA, Michigan State University; MA, EdD, University of Massachusetts

DUSHAN Z. BADAL
Professor Emeritus of Computer Science
BS, Czech Teknika University; MS, University of Saskatchewan, Canada; PhD, University of California, Los Angeles

TATIANA BAILEY
College of Business
BA, Carleton University; MA, MAS, PhD University of Michigan

GINA BALDONI-RUS
Senior Instructor of English
BA, MA, University of Wisconsin-Milwaukee

A. PAUL BALLANTYNE
Professor Emeritus of Economics
BA, University of Southern California; MA, University of Iowa; PhD, Stanford University

MATTHEW R. BARTON
Associate Professor of Visual Arts; co-Director of Visual Arts Program
BFA, Montana State University; MFA, Carnegie Mellon University

CATHARINE BEECHER
Senior Instructor of Counselor Education
BA, University of Colorado Boulder; MD, University of Colorado Health Sciences Center; MA, University of Colorado Colorado Springs

DIANE BELGER
Instructor, College of Business
BS, MBA, University of Colorado

CHRISTOPHER E. BELL
Assistant Professor of Communication; Director, Communication Graduate Studies
BA, University of Northern Colorado; MA, San Diego State; PhD, University of Colorado Boulder

FREDERIC L. BENDER
Professor Emeritus of Philosophy
BS, Polytechnic University of New York; MA, PhD, Northwestern University

CHARLES C. BENIGHT
Chair of Veteran Health and Trauma; Professor of Psychology; Faculty Director, Clinical Training
BS, MA, Arizona State University; PhD, Stanford University

MELISSA J. BENTON
Associate Professor of Nursing
ADN, City College of San Francisco; BSN, MSN, California State University Dominguez Hills; PhD, Arizona State University

MARGARET BERANEK
Associate Professor of Information Systems
BA, MBA, University of Wisconsin; PhD, University of Arizona

JACQUELINE R. BERNING
Chair and Professor of Health Sciences
BA, University of Southern Colorado; BS, Northern Arizona University; MS, University of Colorado Boulder; PhD, Colorado State University

SANDRA L. BERRY-LOWE
Associate Professor of Biology; Director, Graduate Studies, Biology
BS, Louisiana State University; MS, Clemson University; PhD, University of Georgia, Athens

OKSANA BIHUN
Assistant Professor of Mathematics
PhD, University of Missouri, Columbia

ERIC BILLMEYER
Instructor of Geography and Environmental Studies (Geology)
BA, MA, University of Colorado Colorado Springs

CHERYL BIRKELO
Senior Instructor of English
BA, MA, South Dakota State University

ALEXANDER L. BLACKBURN
Professor Emeritus of English
BA, Yale University; MA, University of North Carolina; PhD, Cambridge University

CONNIE BLACKMANN
Senior Instructor of Communication
BS, Colorado Christian University; MA, University of Colorado Colorado Springs

RICHARD A. BLADE
Professor Emeritus of Physics and Energy Science
BS, PhD, University of Colorado Boulder

KATHRYN BLAIR
Professor of Nursing
BSN, Kent State University; MSN, University of Colorado Health Sciences Center; PhD, University of Missouri

DUSTIN BLUHM
Assistant Professor, College of Business
BA, Brigham Young University, MSBA, PhD, University of Washington

GEORGE BOLLING
Senior Instructor of Geography and Environmental Studies (Geology)
BA, MA, University of Northern Colorado

JEREMY M. BONO
Associate Professor of Biology
BA, Kenyon College; PhD, Colorado State University

TERRANCE E. BOULT
EL Pomar Endowed Chair of Innovation and Security; Professor of Computer Science
BS, MS, PhD, Columbia University

JILL BRADLEY-GEIST
Assistant Professor of Management
BS, Truman State University; MS, PhD, Tulane University

PETER BRAZA
Dean, College of Letters, Arts, and Sciences; Professor of Mathematics
BA, University of Wisconsin; MS, PhD, Northwestern University

ANDREA BREHM
Senior Instructor of German
BA, University of Colorado Colorado Springs; MA, Colorado College

JOHN BROCK
Director, Center for Economic Education; Senior Instructor of Economics
BS, U.S. Air Force Academy; MBA, University of Southern California; PhD, Cornell University

JEFFREY P. BROKER
Associate Professor of Biology
BS, California Polytechnic State University; PhD, University of California, Los Angeles

ALBERT BROUILLETTE
Instructor of Computer Science
BS, MS, University of Colorado Colorado Springs

LYNNE BRYANT
Senior Instructor of Nursing
BSN, Mississippi University for Women; MSN, University of Mississippi; PhD, University of Colorado Health Sciences Center

BEVERLY BUCHANAN
Instructor of American Sign Language
BA, Gallaudet University; MS, Western Maryland College

JARRED BULTEMA
Assistant Professor of Chemistry
BS, Calvin College; PhD, Colorado State University, Fort Collins

JAMES F. BURKHART
Chair, Physics and Energy Science; Professor of Physics
BS, University of Wisconsin, LaCrosse; MS, PhD, University of Wisconsin, Milwaukee

GINA BURTON
Instructor of Health Sciences
BS, University of Southern Colorado; MHR, University of Oklahoma

LINDA BUTTON
Senior Instructor of Teaching and Learning
BA, MA, EdD, University of Northern Colorado

SUZANNE BYERLEY
Associate Professor, Kraemer Family Library
BA, University of Colorado Boulder; MA, University of Denver

MICHAEL L. CALVISI
Assistant Professor of Mechanical and Aerospace Engineering
BS, MS, PhD, University of California, Berkeley

ROBERT E. CAMLEY
Distinguished Professor of Physics; Director, UCCS Center of the Biofrontiers Institute; Director of Physics and Energy Science Graduate Studies
BA, MA, PhD, University of California, Irvine

ROBERT C. CARLSON
Professor of Mathematics; Chair, Mathematics
BS, MIT; PhD, University of California at Los Angeles

DICK CARPENTER
Professor of Educational Leadership, Research, and Foundations
BME, University of Colorado Boulder; MA, University of Colorado Colorado Springs; PhD, University of Colorado Denver

PAM CARTER
Instructor of Computer Science
BA, MS, University of Colorado Colorado Springs

STEPHEN CARTER
Assistant Professor of English
BA, Brown University; PhD, University of California Santa Cruz

RADU C. CASCAVAL
Associate Professor of Mathematics
BS, Al. I. Cuza University, Iasi, Romania; MS, PhD, University of Memphis

MEREDITH CASEY
Instructor of Mathematics
BS, University of Georgia; MS, PhD, Georgia Institute of Technology

TAMRA CATER
Instructor of Psychology
BS, Lagrange College; MS, University of South Carolina, Aiken; PhD, University of Southern Mississippi

KATRINA CATHCART
Instructor of Criminal Justice
AAS, Pueblo Community College; BS, Colorado State University; MCJ, Mountain State University

ZBIGNIEW J. CELINSKI
Professor of Physics
MSc, Silesian University, Poland; MA, Temple University; PhD, Simon Fraser University, Canada

TARA CEPON-ROBINS
Assistant Professor of Anthropology
BA, Marquette University; MS, PhD, University of Oregon, Eugene

SARBARISH CHAKRAVARTY
Professor of Mathematics; Director, Mathematics Graduate Studies
BS, MS, Calcutta University, India; PhD, University of Pittsburgh

TIM CHAMILLARD
Associate Professor of Computer Science
BEE, Georgia Institute of Technology; MS, University of Southern California; PhD, University of Massachusetts

LEAH CHANDLER-MILLS
Senior Instructor of Theatre
BFA, The Julliard School

ELAINE A. CHEESMAN
Assistant Professor of Special Education
BS, Western Oregon University; MA, State University of New York; PhD, University of Connecticut

GEORGE CHENEY
Professor of Communication
BA, Youngstown State University; MA, PhD, Purdue University

CHING-HUA EDWARD CHOW
Professor of Computer Science
BS, National Taiwan University; MS, PhD, University of Texas, Austin

THOMAS M. CHRISTENSEN
Professor of Physics; Co-Director, UCCSTeach
BS, University of Minnesota; MS, PHD, Cornell University

MINETTE CHURCH
Associate Professor of Anthropology; Director, Heller Center for Arts and Humanities
BA, University of Colorado Boulder; MA, PhD, University of Pennsylvania

MICHAEL D. CILETTI
Professor Emeritus of Electrical and Computer Engineering
BS, MS, PhD, University of Notre Dame

M. CATHY CLAIBORNE
Associate Professor of Accounting, Associate Dean College of Business
BS, Carroll College; MAcc, University of Tennessee; PhD, University of Tennessee

JENNIFER CLARKE
Senior Instructor of Psychology
BA, University of Richmond; BS, James Madison University; MA, East Carolina University; PhD, University of North Carolina

JAY J. COAKLEY
Professor Emeritus of Sociology
BA, Regis College; MA, PhD, University of Notre Dame

MICHÈLE COMPANION
Professor of Sociology
BA, University of Massachusetts, Amherst; MA, PhD, University of Arizona

SUZANNE E. COOK
Senior Instructor of French
BS, Auburn University; MS, University of Southern California

FREDERICK L. COOLIDGE
Professor of Psychology
BA, MA, PhD, University of Florida

EDGAR COTA-TORRES
Associate Professor of Spanish
BA, MA, San Diego State University; PhD, Pennsylvania State University

MARY E. COUSSONS-READ
Executive Vice Chancellor for Academic Affairs; Professor of Psychology
BS, University of Oklahoma; PhD, The University of North Carolina at Chapel Hill

JOSEPH D. CRAIG
Assistant Professor of Economics
BA, Kenyon College; MA, PhD, University of Colorado Boulder

K. C. CRAIG
Senior Instructor of Health Sciences
BS, ME, Concordia College

MARY ANN G. CUTTER
Professor of Philosophy
BS, MA, PhD, Georgetown University

ANDREW J. CZAPLEWSKI
Professor of Marketing and International Business
BS, BA, Northern Arizona University; MBA, Thunderbird, American Graduate School of International Management; PhD, Arizona State University

JAMES E. DALY
Professor Emeritus of Mathematics
AB, Humboldt State University; PhD, New Mexico State University

ELIZABETH DANIELS
Assistant Professor of Psychology
BA, Georgetown University; MS, PhD, University of California Santa Cruz

ALAN M. DAVIS
Professor of Information Systems
BS, State University of New York, Albany; MS, PhD, University of Illinois

HASKER P. DAVIS
Professor of Psychology
AB, University of California, San Diego; MA, PhD, University of California, Berkeley

SUSAN DAVIS
Senior Instructor of Nursing
BSN, American University; MSN, Grand Canyon University

LEAH DAVIS-WITHEROW
Instructor of History
BA, California State University, Long Beach; MA, University of Colorado

JAMES DAWES
Assistant Professor of Health Sciences
BS, University of Science and Arts of Oklahoma; MS, PhD, Oklahoma State University

DALE R. DEBOER
Chair, Economics; Associate Professor of Economics
BA, University of Washington; MA, PhD, University of California, Davis

KAITLYN DEGHETTO
Assistant Professor of Management
BA, MBA, University of Florida; PhD, Florida State University

DAVID DIAMOND
Assistant Professor of English
BA, Bowdoin Colllege; MA, PhD, University of Chicago

CARLOS DIAZ
Instructor of Chemistry
BS, Universidad Central de Venezuela; PhD, University of Central Florida

LYNDA F. DICKSON
Associate Professor Emerita of Sociology
BA, MA, Western Kentucky University; PhD, University of Colorado Boulder

INES DOLZ-BLACKBURN
Professor Emerita of Spanish
MA, University of Chile; PhD, University of Colorado Boulder

JENNY DORRINGTON
Assistant Professor Attendant Rank of Mathematics; Director, Center for Excellence in Mathematics
BA, Bryn Mawr College; MA, PhD, Northwestern University

CHERYL DOUGHTY
Instructor of Biology
BA, University of New Hampshire; PhD, Boston College

COREY DRIETH
Associate Professor of Visual Arts; co-Director of Visual Arts Program
BA, BFA, Colorado State University; MFA, University of North Carolina at Chapel Hill

DANIEL DRISCOLL
Instructor of Economics
BS, Georgetown University; MA, Air University; MA University of Oklahoma

THOMAS DUENING
Associate Professor of Entrepreneurship, El Pomar Chair of Business and Entrepreneurship
BS, UW Stevens Point; MA, PhD, University of Minnesota

RICHARD L. DUKES
Professor of Sociology
BA, California State University, Northridge; MA, PhD, University of Southern California

JOSHUA DUNN
Chair, Political Science; Professor of Political Science
BA, Bob Jones University; MA, PhD, University of Virginia

REBECCA DURAY
Professor of Operations and Technology Management
BS, MBA, Case Western Reserve University; PhD, Ohio State University

ROBERT L. DURHAM
Associate Professor of Psychology
BA, University of Colorado Boulder; MA, PhD, Vanderbilt University

LISA T. DURRENBERGER
Instructor of Biology
BA, University of Colorado Boulder; MSc, University of Colorado Colorado Springs

BRIAN DUVICK
Associate Professor of History
BA, MA, University of Minnesota; PhD, University of Chicago

LIESL EBERHARDT
Senior Instructor of Communication
BA, MA, University of Colorado Colorado Springs

JAMES G. EBERHART
Professor Emeritus of Chemistry
BS, PhD, Ohio State University

MARINA ECKLER
Instructor of Visual Arts
BA, San Francisco State University; MFA, Maine College of Art

AMANDA ELDER
Associate Professor of Health Sciences
BA, Adams State College; MA, San Jose State University; EdD, Oklahoma State University

CRAIG ELDER
Associate Professor
BS, Berry College, Georgia; MEd, Auburn University; PhD, University of Alabama

MARY ENZMAN-HINES
Professor Emerita for Graduate Nursing
BSN, MS, PhD, University of Colorado

SUSAN EPPERSON
Senior Instructor of Biology, Chemistry and Biochemistry
BS, University of the Ozarks; MS, University of Illinois

MICHELLE ESCASA-DORNE
Assistant Professor of Anthropology
BA, University of California, Santa Barbara; MA, California State University, Fullerton; PhD, University of Nevada, Las Vegas

LARRY S. EUBANKS
Associate Professor of Economics
BS, University of California, Riverside; PhD, University of Wyoming

JOAN M. FAIRCHILD
Associate Professor Emerita of Education
BA, University of Denver; MA, Syracuse University; EdD, Columbia University

TIMOTHY FAL
Instructor of Physics
BSc, MSc, PhD, University of Colorado Colorado Springs

YING FAN
Assistant Professor, College of Business
PhD, Ivey School of Business, University of Western Ontario

SHERRY FARLEY
Instructor of Health Sciences
BS, University of Georgia; PhD, Oregon State University

TABATHA FARNEY
Associate Professor, Kraemer Family Library
BA, MSLIS, University of Illinois at Urbana-Champaign

LEILANI FELICIANO
Associate Professor of Psychology
BA, University of Southern California; MA, University of the Pacific; PhD, Western Michigan University

FERNANDO FELIU-MOGGI
Associate Professor of Spanish
BA, MS, Southern Illinois University; PhD, University of Pittsburgh.

DAVID L. FENELL
Professor of Counselor Education
BS, Oklahoma State University; MS, University of Southern California; PhD, Purdue University

ABBY L. FERBER
Professor of Sociology/Women's and Ethnic Studies
BA, The American University, Washington, D.C.; MS, PhD, University of Oregon, Eugene

JEFFERY M. FERGUSON
Professor of Service Management and Marketing
BA, Denison University; MBA, University of Montana; PhD, Arizona State University

JULAINE E. FIELD
Associate Professor of Counseling and Human Services
BA, MA Edinboro University of Pennsylvania; PhD, North Carolina State University

LIN FIFE
Professor Emerita of Visual Arts
BA, Southern Colorado State College; MFA, Southern Illinois University

SUSAN FINGER
Senior Instructor of English
BA, Purdue University; MA, Florida Atlantic University

SUSAN FINKE
Instructor of Nursing
BSN Newman University; MSN-Ed Grand Canyon University

CAROL A. FINNEGAN
Associate Professor of Marketing
BA, The George Washington University; MBA, Santa Clara University; PhD, Michigan State University

CLINT FISHER
Assistant Professor of Education
BA, MEd, PhD, University of New Mexico

KRISTI FOLLETT
Instructor of Chemistry
BA, MA, University of Colorado Colorado Springs

BERNICE FORREST
Associate Professor of History
BA, Scripps College; AM, Brown University; PhD, Tulane University

PAULINE FOSS
Senior Instructor of Visual Arts
BA, University of California, Davis; MA, Adams State College

CARMEN FRANK
Senior Instructor of Spanish
BS, Albert Einstein University, El Salvador; MBA, Universidad Francisco Marroquin/Fepade, El Salvador

MONIQUE L. FRENCH
Associate Professor of Quantitative Methods
BS, MBA, University of North Florida; PhD, Clemson University

TONY FRIEDHOFF
Senior Instructor of English
BA, University of Arizona; MFA, University of Massachusetts, Amherst

BARBARA FRYE
Associate Professor of Teaching and Learning
BA, The Colorado College; PhD, University of Minnesota

BEN GALATZAN
Senior Instructor of Nursing
BSN, University of Nebraska, MSN, Clarkson College

DONALD G. GARDNER
Professor of Management and Organization
BS, Carroll College; PhD, Purdue University

DENISE GARRETT
Instructor of English
BA, University of Colorado Colorado Springs; MA, University of Colorado University Denver

SUSAN GARRETT
Instructor of Nursing
BS, Pennsylvania State University; MSN, University of Pittsburgh

BRANDON E. GAVETT
Assistant Professor of Psychology
BA, SUNY College at Geneseo; PhD, University at Albany, State University of New York

TERRY A. GEIGER
Instructor of Chemistry and Biochemistry
BS, University of Colorado Colorado Springs; MS, Kansas State University

EILEEN GERRARD-GOUGH
Senior Instructor of Nursing
BSN, MN, University of Florida

CERIAN GIBBES
Assistant Professor of Geography and Environmental Studies
BSc, MSc, PhD, University of Florida

LESLEY GINSBERG
Associate Professor of English
BA, University of California, Berkeley; PhD, Stanford University

ROBERT GIST
Senior Instructor of Physics
BS, West Texas State University; MS, University of Texas, Austin

RHONDA GLAZIER
Assistant Professor, Kraemer Family Library
BSE, MLS, Emporia State University

BLANCA GLISSON-RODRIGUEZ
Senior Instructor of Spanish

BA, University of Colorado Colorado Springs; MA, University of Northern Colorado

ALBERT GLOCK
Instructor of Computer Science
BS, USAFA; MS, Harvard University; PhD, UCCS

ANATOLIY GLUSHCHENKO
Professor of Physics
MSc, Zhytomyr State Pedagogical University, Ukraine; PhD, Ukrainian Academy of Sciences, Kyiv

ADELINA M. GOMEZ
Associate Professor Emerita of Communication
BA, MA, Western New Mexico University; PhD, University of Colorado Boulder

MARIA GONI
Senior Instructor of Spanish
BA, MA, University of Philosophy and Education Science, Donostia, Spain; MA, University of Northern Colorado

TRACY GONZALEZ-PADRON
Associate Professor of Marketing
BS, Aquinas College; MBA, Grand Valley State University; PhD, Michigan State University

PETER J. GORDER
Associate Professor of Mechanical and Aerospace Engineering
BS, MA, PhD, University of California, Davis

JANICE M. GOULD
Associate Professor of Women's and Ethnic Studies
BA, MA, University of California, Berkeley; MA, University of Arizona; PhD, University of New Mexico

MAREK GRABOWSKI
Associate Professor of Physics
MS, Technical University of Wroclaw, Poland; PhD, University of Kentucky

HELEN GRAHAM
Assistant Professor of Nursing
BSN, Arizona State University; MSN, PhD, University of Colorado

CATHERINE GRANDORFF
Instructor of English
BA, MA, South Dakota State University

LESLIE T. GRANT
Associate Professor of Education
BS, University of Wisconsin-Madison; MA, Northern Arizona University; PhD, Northern Arizona University

EDITH L. GREENE
Professor of Psychology; Director, Psychological Science Graduate Program
BA, Stanford University; MA, University of Colorado Boulder; PhD, University of Washington

DAPHNE T. GREENWOOD
Professor of Economics; Director, Center for Colorado Policy Studies
BA, Northern Illinois University; MA, University of Houston; PhD, University of Oklahoma

THOMAS W. GRUEN
Chair, Associate Professor of Marketing
BA, Gordon College; MBA, MS, PhD, Indiana University

EVE C. GRUNTFEST
Professor Emerita of Geography and Environmental Studies
BA, Clark University; MA, PhD, University of Colorado Boulder

LORI GUASTA
Senior Instructor of Sociology
BA, Coe College; MA, University of Northern Colorado; PhD, Gonzaga University

JENNIFER GUESS
Instructor of Biology
BS, Air Force Academy; MPH, University of Michigan, Ann Arbor; MS, PhD, University of Rochester

NADYNE GUZMAN
Professor Emerita of Leadership, Research and Foundations
BS, MA, University of Colorado Colorado Springs; PhD, University of Colorado Boulder

ALFRED HAGEDORN III
Associate Professor Adjoint of Chemistry and Biochemistry
AB, Cornell University; PhD, Michigan State University

SARA HAGEDORN
Assistant Professor of Political Science
BA, Carroll College; MA, PhD, University of Colorado at Boulder

WENDY HAGGREN
Senior Instructor of Chemistry and Biochemistry
BS, University of New Mexico; PhD, University of Texas Health Science Center, San Antonio

ERIK M. HANSON
Instructor of Philosophy
BA, University of Colorado Boulder; MA, University of Bristol; MPhil, University of London, Kings College; PhD, Purdue University

JOHN P. HARNER
Professor of Geography and Environmental Studies
BS, Pennsylvania State; MS, PhD, Arizona State University

MARGARET HARRIS
Assistant Professor of Health Sciences
BS, State University of New York; MS, University of Virginia; PhD, University of North Carolina

SPENCER HARRIS
Assistant Professor of Marketing/Sport Marketing
BS, University of North London; MA, University of Gloucestershire; PhD, Loughborough University

WILLIE HARRISON
Assistant Professor of Electrical and Computer Engineering
BS, Utah State University; MS, Utah State University; PhD, Georgia Institute of Technology

PAUL HARVEY
Chair, History; Professor of History
BA, Oklahoma Baptist University; MA, PhD, University of California, Berkeley

DAVID G. HAVLICK
Associate Professor of Geography and Environmental Studies
AB, Dartmouth College; MS, University of Montana; PhD, University of North Carolina at Chapel Hill

BARBARA HEADLE
Senior Instructor of History
BA, University of Colorado Colorado Springs; MA, California State University, Northridge

PHILLIP HEASLEY
Instructor of English
BA, University of Central Oklahoma; MA, Oklahoma State University; MA, Northern Arizona University

KERI HEMENWAY
Senior Instructor of English
BA, University of Northern Iowa; MA, University of Colorado Denver

RENEE M. HENRY
Assistant Professor of Chemistry
BA, University of Colorado Colorado Springs; PhD, University of Colorado Boulder

CRYSTAL BAYE HERALD
Instructor of English
BA, Jacksonville University; MA, University of Colorado Denver

C. ANDREA HERRERA
Director, Women's and Ethnic Studies; Professor of Women's and Ethnic Studies
BA, St. Joseph's University; MA, West Chester University; PhD, University of Delaware

CHRISTOPHER V. HILL
Professor of History
BA, University of Utah; MA, PhD, University of Virginia

LISA MEI HINES
Associate Professor of Biology
BS, University of California, San Diego; ScD, Harvard University

ROBERT R. HIRSCHFELD
Associate Professor of Organizational Management
BS, MBA, Tulane University; PhD, Auburn University

EDWARD C. HOANG
Assistant Professor of Economics
BA, Seton Hall University; PhD, University of Houston

JULIA L. HOERNER
Professor Emerita of Visual Arts
BFA, Tulane University; MFA, Yale University

KIMBERLY A. HOLCOMB
Instructor of Women's and Ethnic Studies
BA, MA, University of Colorado Colorado Springs

CURTIS HOLDER
Chair, Geography and Environmental Studies; Professor of Geography and Environmental Studies
BA, PhD, Clark University; MA, University of Georgia

CAROLE HUBER
Senior Instructor of Geography and Environmental Studies
BA, Colorado College; MA, University of Colorado Boulder

NICOLE HUBER
Senior Instructor of Biology
BA, MA, Smith College; MS, California State University

THOMAS P. HUBER
Professor of Geography and Environmental Studies
BS, U.S. Air Force Academy; MA, Syracuse University; PhD, University of Colorado Boulder

ROBERT H. HUGHES
Professor Emeritus of Sociology
BA, MA, PhD, University of Colorado Boulder

MARGARET HUNT
Instructor of Health Sciences
BS, University of Iowa; MS, Syracuse University

ANDREA HUTCHINS
Associate Professor of Health Sciences
BS, Kansas State University; MS, PhD, University of Minnesota

K. ALEX ILYASOVA
Associate Professor of English, Director of Professional and Technical Writing Program
BA, MA, University of Colorado Denver; PhD, Michigan Technological University

ROBERT JACOBS
Assistant Professor of Biology
BS, MS, Colorado State University, Fort Collins; PhD, University of Zurich

LORI E. JAMES
Professor of Psychology
BA, University of California, Los Angeles; MA, PhD, Claremont Graduate School

WERNER JENKINS
Assistant Professor Adjoint of Chemistry and Biochemistry
BA, MPA, University of Colorado Colorado Springs; MS, University of Florida

STEVEN A. JENNINGS
Associate Professor of Geography and Environmental Studies
BS, MS, University of Utah; PhD, University of California, Davis

JENNIFER L. JENSEN
Instructor of Philosophy
BA, Miami University; MA, Biola University; MA, PhD, University of Notre Dame

CHRISTINA JIMENEZ
Associate Professor of History; Director, History Graduate Studies
BA, Georgetown University; MA, PhD, University of California, San Diego

KATHLEEN JOHNSON
Senior Instructor of English
BA, MA, University of Colorado Colorado Springs

STACEY JOHNSON
Instructor of English
BA, MA, Colorado State University, Fort Collins

JENNIFER JONES
Clinical Instructor of Nursing
BSN, Wright State University; MSN, Indiana Wesleyan University

BARBARA JOYCE
Associate Professor of Nursing
BSN, Indiana University; MSN, Texas Women's University; PhD, University of Mississippi

JUGAL K. KALITA
Professor of Computer Science
B. Tech, Indian Institute of Technology; MS, University of Saskatchewan, Canada; PhD, University of Pennsylvania

T. SUBRAMANYA KALKUR
Chair, Electrical and Computer Engineering; Professor of Electrical and Computer Engineering
BS, MS, University of Mysore (India); MTech, Indian Institute of Science; PhD, University of Western Australia

CHRISTI KASA-HENDRICKSON
Associate Professor of Education
BA, California State University, Long Beach; MS, Chapman University; PhD, Syracuse University

ROBERT H. KEELEY
El Pomar Professor Emeritus of Finance
BS, PhD, Stanford University; MBA, Harvard University

DEBORAH KENNY
Associate Professor of Nursing, Associate Dean of Research
BSN, University of Northern Colorado; EdM, Boston University; MSN, Vanderbilt University; PhD, University of Massachusetts

ANDREW KETSDEVER
Chair, Mechanical and Aerospace Engineering; Professor of Mechanical and Aerospace Engineering
BS, MS, PhD, University of Southern California

T. MARTIN KEY
Assistant Professor of Marketing
BS, MA, PhD, Southern Illinois University

INHAN KIM
Assistant Professor of Political Science
BA, MA, Korea University; PhD, University of Virginia

JESSICA KIRBY
Instructor of Health Sciences
BS, MS, University of Colorado Colorado Springs

MICHAEL KISLEY
Chair, Psychology; Professor of Psychology
BS, MS, University of Colorado Boulder; PhD, University of Pennsylvania

KELLI J. KLEBE
Associate Vice Chancellor for Research and Faculty

Development; Dean of the Graduate School; Professor of Psychology
AA, Los Angeles Baptist College; BA, San Francisco State University; PhD, University of Minnesota

GARY S. KLEIN
Chair, Couger Professor of Information Systems
BSIM, MSIA, PhD, Purdue University

DONALD E. KLINGNER
Distinguished Professor of Public Administration
BA, University of California, Berkeley; MA, The George Washington University; PhD, University of Southern California

MARY ANN KLUGE
Professor of Health Sciences
BS, University of Rhode Island; MS, University of Oregon; PhD, The Union Institute & University, OH

IRINA KOPANEVA
Assistant Professor of Communications
BA, Voronezh State University; MA, Voronezh State University; PhD, Voronezh State University; PhD, Washington State University

ANNA E. KOSLOSKI
Assistant Professor of Criminal Justice
BA, University of Minnesota, Morris; MS, PhD, Iowa State University

K. MAJA KRAKOWIAK
Associate Professor of Communication
BS, University of Utah; PhD, Pennsylvania State University

GORDON KRESHECK
Professor Adjunct of Chemistry
BS, MS, PhD, Ohio State University

ROBERT KRESSIN
Instructor of Electrical and Computer Engineering
BS, Milwaukee School of Engineering; MS, University of Colorado Colorado Springs

BETH KUMAR
Electronic Resources and Serials Librarian; Assistant Professor, Library
BS, University of Wisconsin-La Crosse; MS, CAS, EdM, University of Illinois

JOSEPH KUZMA
Instructor of Philosophy
BA, University of Colorado Colorado Springs; MA, PhD, University of Coventry

RICHARD Y.C. KWOR
Professor Emeritus of Electrical and Computer Engineering
BSEE, University of New Hampshire; MSEE, PhD, Cornell University

ANDREW LAC
Assistant Professsor of Psychology
BA University of California, Los Angeles; MPA, CSU Dominguez Hills; MA, CSU Los Angeles; PhD, Claremont Graduate University

ESTHER LAMIDI
Assistant Professor of Sociology
BS, University of Ibadan; MA, Western Illinois University

KEVIN LANDIS
Associate Professor of Theatre; Director of Theatre Program
BA, Colby College; MA, Brown University; MFA, Brandeis University; PhD, Tufts University

MICHAEL LANDON-MURRAY
Assistant Professor of Public Administration
BA, University at Buffalo, SUNY; MPIA, University of Pittsburgh; PhD, University at Albany, SUNY

KARIN LARKIN
Curator, Anthropology; Instructor of Anthropology
BA University of Calilfornia at Santa Cruz; MA University of Colorado Boulder; PhD University of Colorado Boulder

MICHAEL P. LARKIN
Senior Instructor of Geography and Environmental Studies
BA, University of Colorado Colorado Springs; MS, University of Colorado Boulder

ROBERT P. LARKIN
Professor Emeritus of Geography and Environmental Studies
BA, State University of New York, Cortland; MA, University of Colorado Boulder; PhD, Pennsylvania State University

REBECCA LAROCHE
Professor of English
BA, Bates College; PhD, Yale University

MICHAEL LARSON
Associate Vice Chancellor for Research & Innovation; El Pomar Chair of Engineering & Innovation; Professor of Mechanical & Aerospace Engineering
BS, Tulane University; MS, University of Michigan; PhD, Massachusetts Institute of Technology

L. KEN LAUDERBAUGH
Associate Professor of Mechanical and Aerospace Engineering
BS, MS, PhD, University of Michigan, Ann Arbor

CHELSEA LAWSON
Instructor of English
BA, University of Colorado Colorado Springs; MA, University of North Carolina, Wilmington

MICHELLE LeCOMPTE
Instructor of Health Sciences
BA, BS, MS, University of Colorado Colorado Springs

MORGAN LEE
Assistant Professor of Health Sciences
BA, University of Northern California; MPH, PhD, University of Southern Florida

SHERRY LEE
Senior Instructor of Nursing
BSN, MSN, University of Colorado Colorado Springs

DAVID LEUPP
Senior Instructor of Quantitative Methods
BSEE, Air Force Academy; MBA, University of Missouri; MSEE, Air Force Institute of Technology; PhD, University of Colorado Colorado Springs

RORY LEWIS
Assistant Professor of Computer Science
BS, Syracuse University; MBA, College of Law - Syracuse University; PhD, University of North Carolina at Charlotte

JOHN LINDSEY
Instructor of Electrical and Computer Engineering
BA, Colorado College; BS, Columbia University; PhD, University of Colorado Colorado Springs

ROCHE M. LINDSEY
Senior Instructor of Anthropology
BA, University of Wyoming; MA, University of Kansas

JOSEPH J.F. LIU
Associate Professor Adjunct in Master of Engineering; Mathematics
BS, Cheng Kung University, Taiwan; MS, PhD, Auburn University

KAREN L. LIVESEY
Assistant Professor of Physics
BSc, PhD, University of Western Australia

CHRISTY LOFTON
Senior Instructor of Sociology
BA, MA, University of Colorado Colorado Springs

JUNE LOTERBAUER
Instructor of English
BA, MA, University of Colorado Colorado Springs

MICHAEL LUCCHESI
Senior Instructor of Economics
BA, University of Wisconsin, Madison; MBA, Rensselaer Polytechnic Institute; MA, University of Washington

MEGHAN LYBECKER
Assistant Professor of Biology
BS, Eastern Oregon University; PhD, University of Montana

DANIEL R. LYKINS
Instructor of Biology
BS, United States Air Force Academy; MAS, Embry-Riddle Aeronautical University; MBS, University of Colorado Colorado Springs

JIAN JAMES MA
Assistant Professor of Information Systems
BS, Peking Univeristy; MS, University of Texas; PhD, Univeristy of Arizona

SUZANNE MACAULAY
Chair, Visual and Performing Arts; Professor of Art History
BA, University of Minnesota; MA, University of Colorado Boulder; PhD, University of Pennsylvania

KATHERINE MACK
Chair, English; Associate Professor of English
BA, Columbia University; MA, PhD, University of California, Irvine

MARY LOU MAKEPEACE
Instructor of Political Science
BA, University of North Dakota; MA, University of Colorado Colorado Springs

CECILE F. MALEK
Senior Instructor of English
BA, Colorado State University; MA, University of Colorado Boulder; MFA, Goucher College

MARK R. MALONE
Professor of Education
BS, MEd, Clarion University of Pennsylvania; PhD, University of Colorado

LAURA HUBER MARSHALL
Senior Instructor of Special Education
BA, University of Iowa; MA, University of Colorado Colorado Springs

QUENTIN MARTIN
Senior Instructor of English
BA, MA, Western Michigan University; PhD, Ohio State University

CHRISTINA M. MARTINEZ
Senior Instructor, Kraemer Family Library
BA, Arizona State University; MA, University of Denver

MICHAEL MARTINEZ
Senior Instructor of Criminal Justice
BS, Metropolitan State College; MCJ, University of Colorado Denver

ROGER MARTINEZ
Assistant Professor of History
BA, PhD, University of Texas at Austin; MPP, University of California at Berkeley

MOLLY MAXFIELD
Associate Professor of Psychology; Director of Graduate Clinical Geropsychology MA and PhD Training
BA, Skidmore College; MA, PhD, University of Colorado Colorado Springs

JAMIE MAY
Senior Instructor of English
BA, MA, Southeastern Louisiana University

BRETT MAYER
Instructor of Chemistry
BS, Baylor University; MS, MBA, Seton Hall University

NORAH MAZEL
Reference Librarian; Instructor, Kraemer Family Library
BA, Mount Holyoke College; MS, University of Illinois at Urbana-Champaign

RIEKO McADAMS
Senior Instructor of Japanese
BA, MA, University of Colorado Colorado Springs

BRIAN MCALLISTER
Associate Professor of Accounting
BSBA, University of Colorado Colorado Springs; PhD, University of Nebraska

COLIN McALLISTER
Music Professional of Visual and Performing Arts
BS, University of Colorado Denver; MA, DMA, University of California, San Diego

JENNIFER McARDLE
Instructor of English
BA, University of New Hampshire; MA, Northern Arizona University

MARK L. McCONKIE
Professor of Public Administration
BA, MPA, Brigham Young University; PhD, University of Georgia

SHERRY McCORMICK
Instructor of Nursing
BSN, University of Vermont; MSN, University of Kansas Medical Center

FRED R. McFADDEN
Professor Emeritus of Information Systems
BS, Michigan State University; MBA, University of California, Los Angeles; PhD, Stanford University

MATTHEW McHARG
Assistant Professor Adjoint of Physics
BS, Missouri Southern State College; MS, Air Force Institute of Technology; PhD, University of Alaska, Fairbanks

HOLLIS McLEROY
Instructor of Biology
BA, Colorado Mesa University; MS, Feature University of Colorado

MELONIE McMICHAEL
Senior Instructor of English
BA, Texas A&M University; MA, Texas State University; PhD, Texas Tech University

TERESA L. MEADOWS
Chair, Languages and Cultures; Associate Professor of Film Studies and Languages and Cultures; Head, French Program; Director, Humanities
BA, MA, PhD, University of Oregon

LIZ MEDENDORP
Instructor of English
BA, University of Michigan, Ann Arbor; MA, University of Massachusetts, Amherst

SYLVIA MENDEZ
Chair, Educational Leadership, Research, and Foundations; Associate Professor of Educational Leadership, Research, and Foundations
BA, Washington State University; MS, Colorado State University; PhD, Kansas University

TISHA MENDIOLA JESSOP
Instructor of Chemistry
BA, MA, University of Colorado Colorado Springs

ZACHARY MESYAN
Associate Professor of Mathematics
BS, Brown University; PhD, University of California, Berkeley

MATTHEW METZGER
Assistant Professor of Innovation
BA, University of Colorado Boulder; MBA, University of Notre Dame; PhD, University of Oregon

NANNA MEYER
Associate Professor of Health Sciences
BS, University of Wyoming; MS, Arizona State University; PhD, University of Utah

SHANNON MICHAUX
Senior Instructor of Mathematics
BS, University of Colorado Boulder; MS, University of Colorado Colorado Springs

SAM MILAZZO
Senior Instructor of Physics
BS, MS, University of North Texas

JOHN C. MILLER
Professor Emeritus of Spanish
BA, Rutgers University; MSEd, Southern Illinois University; MA, University of Maryland; PhD, Middlebury College

JOHN F. MILLIMAN
Professor of Management and Organization
BA, University of California, Santa Barbara; MS, University of California, Los Angeles; PhD, University of Southern California

DENISE MILLOT
Senior Instructor of Nursing
BSN, West Virginia Wesleyan College; MSN, Graceland University

JEFFREY MONTEZ DE OCA
Associate Professor of Sociology
BA, University of California, Berkeley; MA, New York University; PhD, University of Southern California

OMAR MONTOYA
Instructor of English
BA, MA, New Mexico State University

JANOL MONTROY
Instructor of Nursing
BS, Marymount College; MS, Walden University

DAVID MOON
Associate Vice Chancellor for Undergraduate Education and Academic Planning; Professor of Political Science
BA, Austin College, MA, PhD, University of Texas, Austin

EMILY MOONEY
Assistant Professor of Biology
BS, SUNY College; PhD, West Virginia University

SHERWYN P. MORREALE
Professor of Communication
BA, University of Colorado Colorado Springs; MA, University of Colorado Denver; PhD, University of Denver

GREGORY J. MORROW
Professor of Mathematics
BS, MA, MS, PhD, University of Illinois, Urbana-Champaign

CHERYL MORTIMER
Clinical Instructor of Nursing
BS, University of Texas; MS, Seton Hall University

EDIN MUJKIC
Assistant Professor of Public Administration
BS, MIR, PhD, Auburn University

R. DAVID MULLIN
Instructor of Economics
BA, Adrian College; MBA, Duke University; MA, PhD, University of Virginia

CARLA S. MYERS
Assistant Professor, Kraemer Family Library
BA, University of Akron; MLIS, Kent State University

JANET L. MYERS
Senior Instructor of History
BA, MA, University of Colorado Colorado Springs

WILLIAM MYERS
Senior Instructor of English
BS, University of Southern Colorado; MA, University of Colorado Denver

THOMAS J. NAPIERKOWSKI
Professor of English
BA, University of Wisconsin; MA, PhD, University of Colorado Boulder

MICHELLE NEELY
Assistant Professor Attendant Rank of English; Director, Writing Across the Curriculum and Portfolio Assessment
BA, MA, PhD, University of Texas at Austin

DAVID NELSON
Chair, Communication; Professor of Communication
BA, National College of Education; MFA, University of California, Los Angeles

JENENNE NELSON
Professor Emeritus of Nursing

BS, Pennsylvania State University; MA, University of Northern Colorado; MS, University of North Dakota; PhD, University of Colorado Health Sciences Center

JOHN D. NORGARD
Professor Emeritus of Electrical and Computer Engineering
BSEE/Co-Op, Georgia Institute of Technology; MS, PhD, California Institute of Technology

JAMES A. NULL
Professor Emeritus of Political Science
BA, MA, University of Nevada; PhD, University of Arizona

EUGENIA C. OLESNICKY KILLIAN
Assistant Professor of Biology
BA, Drew University; MS, PhD, New York University

GERALD M. OLESZEK
Professor Emeritus of Electrical and Computer Engineering
BS, Wayne State University; MS, PhD, Syracuse University

DOROTHEA OLKOWSKI
Professor of Philosophy
BA, State University of New York, Binghamton; MS, PhD, Duquesne University

SOLVEIG OLSEN
Instructor of Music
BM, University of Iowa; MM, Indiana University

ERIC M. OLSON
Professor of Marketing and Strategic Management; Director, Sports Management
BS, Lewis and Clark College; MBA, Portland State University; PhD, University of Minnesota

GREG OMAN
Assistant Professor of Mathematics
BA, MS, PhD, The Ohio State University

KEITH OPPENHEIM
Instructor of Chemistry
BS, Missouri Southern State University; MS, PhD, Syracuse University

EDWARD B. OPPERMANN
Professor Emeritus of Management Science and Information Systems
BS, U.S. Naval Academy; MBA, Air Force Institute of Technology; PhD, Indiana University

KIRSTEN BARTHOLOMEW ORTEGA
Associate Professor of English
BA, New York University; MA, PhD, University of Florida

JANEL E. OWENS
Associate Professor of Chemistry
BS, Southwestern University; PhD, University of California, Davis

JENNIFER PANKO
Instructor of English
BS, Western Oregon University; MA, Minnesota State University

JAMES PARMENTER
Instructor of Mathematics
BS, University of California, Davis; MS, University of Colorado Colorado Springs

GREGORY W. PAULS
Instructor of Electrical Engineering and Computer Engineering
BS, Walla Walla College; MS, Washington State University; PhD, University of Colorado Colorado Springs

JAMES PEARSON
Assistant Professor of Biology
BSc, Liverpool John Moores University; MSc, University of North Wales, Bangor; PhD, Brunel University

C. KENNETH PELLOW
Professor of English
BA, Northern Michigan University; MA, PhD, University of Nebraska

KERRY PETERSON
Assistant Professor, Clinical Teaching Track of Nursing
BA, University of Colorado; BSN, MSN, DNP, Shenandoah University; PhD, Johns Hopkins University

JENNIFER PHARR
Assistant Professor of Health Sciences
BS, Stephen F. Austin State University; MS, Texas A&M; MBA, University of Phoenix;

JERRY L. PHILLIPS
Professor Attendant Rank of Chemistry; Director, Center for Excellence in Science
BA, University of Colorado; PhD, Colorado State University

LYNN PHILLIPS
Assistant Professor of Nursing, Clinical Simulation Learning Center Director
BS, Idaho State University; MS, University of California; PhD, University of Northern Colorado

JON C. PIGAGE
Associate Professor of Biology

BS, University of Wyoming; MS, PhD, University of North Dakota

NIKKI PIKE
Instructor of Visual Arts
BFA, University of Colorado at Denver; MFA, University of South Florida

DEBORAH PINA-THOMAS
Instructor of Nursing
BSN, Northeastern University; MSN, University of Phoenix

ANATOLIY O. PINCHUK
Associate Professor of Physics
BS, Kyiv Electric-Mechanical College; MS, National Taras Shevchenko University; PhD., National Academy of Sciences of Ukraine

GEORG PINGEN
Assistant Professor of Mechanical & Aerospace
BA Sanford University, MS Washington University; PhD University of Colorado Boulder

LEWIS J. PINSON
Associate Professor Emeritus of Computer Science
BS, University of Alabama; MS, PhD, University of Florida

CHRISTINE PIPER
Reference/Instruction Librarian and Kraemer Intergenerational Librarian; Instructor; Kraemer Family Library
BA, BS, John Brown University; MLIS, University of Washington

STEVEN PITTZ
Assistant Professor of Political Science
BA, University of Colorado Colorado Springs; MA, PhD, University of Texas, Austin

SALLY PLANALP
Professor of Communication
BS, University of Missouri, Columbia; MA, University of Colorado Denver; PhD, University of Wisconsin, Madison

STACY PLATT
Instructor of Visual Art
BA, University of Tennessee, Chattanooga; MFA, Columbia College of Chicago

GREGORY L. PLETT
Professor of Electrical and Computer Engineering
BEng, Carleton University; MSEE, PhD, Stanford University

DEBORAH POLLARD
Associate Professor of Nursing
BSN, West Liberty State University; MSN, West Virginia University; PhD, University of Pittsburgh

EDWARDO PORTILLOS
Associate Professor of Sociology; Faculty Director, Sociology Graduate Studies
BA, University of Colorado Boulder; MA, PhD, Arizona State University

ALLISON POSTELL
Instructor of Philosophy
BA, St. Norbert College; MA, PhD, University of Dallas

JOSEPH POSTELL
Assistant Professor of Political Science
BA, Ashland University; MA, Institute of Philosophic Studies; PhD, University of Dallas

REBECCA POSUSTA
Senior Instructor of English
BA, MA, Georgia State University

BARBARA PRINARI
Professor of Mathematics
PhD, University of Lecce

THOMAS A. PYSZCZYNSKI
Distinguished Professor of Psychology
BA, University of Wisconsin, Milwaukee; MA, PhD, University of Kansas

SARA HONN QUALLS
Kraemer Family Professor of Aging Studies, Director, Gerontology Center; Professor of Psychology
BS, Middle Tennessee State University; MA, PhD, Pennsylvania State University

RICHARD D. RADABAUGH
Instructor of Criminal Justice
BA, Chapman University; JD, University of Denver

MAURA LEON RAINEY
Senior Instructor of Spanish
BS, MA, University of Alabama

AL RAMIREZ
Professor of Educational Leadership, Research, and Foundations
BA, Southern Illinois University; MA, Northeastern Illinois University; MEd, University of Nevada, Las Vegas; EdD, University of Nevada, Reno

KULUMANI M. RANGASWAMY
Professor Emeritus of Mathematics
BS, MS, PhD, Madras University (India)

JIA RAO
Assistant Professor of Computer Science
BS, Wuhan University; MS, Wuhan University; PhD, Wayne State University

LESLIE RAPPARLIE
Instructor of English
BA, Gettysburg College; MS, Minnesota State University, Mankato; MFA, Rutgers University

CLAIRE RAU
Senior Instructor of Visual Arts
BA, University of Maine; MFA, University of North Carolina, Chapel Hill

JOAN E. RAY
Professor Emerita of English and President's Teaching Scholar
BA, State University of New York, Stony Brook; AM, PhD, Brown University

VENKATESHWAR K. REDDY
Associate Vice Chancellor for Online Education and Initiatives; Dean, College of Business and Administration; Professor of Finance
MS, PhD, Pennsylvania State University

GEORGE E. REED
Dean, School of Public Affairs; Professor of Public Administration
BS, University of Central Missouri; MFS, George Washington University; PhD, Saint Louis University

JANE RIGLER
Assistant Professor of Music
BM, Northwestern University; MA, PhD, University of California, San Diego

LEONARD RILEY
Senior Instructor of Political Science
BA, MPA, University of Colorado Colorado Springs; MA, Regis University

CHRISTINA ROBINSON
Instructor of English
BA, Western Washington University; MA, Colorado State University

STEPHANY ROSE
Associate Professor of Women's and Ethnic Studies
BA, Clark Atlanta University; MA, PhD, Purdue University

KACEY G. ROSS
Instructor of English
BA, University of Colorado Colorado Springs; MA, University of Colorado Denver

JAMES T. ROTHE
Professor of Emeritus Marketing, Strategy, and International Business
BBA, MBA, PhD, University of Wisconsin

RONALD R. RUMINSKI
Professor of Chemistry
BA, BS, MS, PhD, University of New Mexico

MARY RUPP
Archives Librarian and Digital Repository Coordinator; Instructor, Kraemer Family Library
BA, MLS, University of California, Los Angeles

GEORGE A. RUS
Senior Instructor of Mathematics
BS, University of Bucharest, Romania; MS, Western Illinois University; PhD, University of Wisconsin-Milwaukee

STEPHANIE RYON
Assistant Professor of Criminal Justice
BA, University of Tennessee, Knoxville; MS, PhD, Florida State University

ROBERT E. SACKETT
Professor of History
BA, Grinnell College; MA, PhD, Washington University

DENA SAMUELS
Assistant Professor of Women's and Ethnic Studies; Director, Matrix Center
BA, Brandeis University; MA, PhD, University of Colorado Colorado Springs

KRISTIN W. SAMUELSON
Assistant Professor of Psychology
BS, Virginia Commonwealth University; MEd, PhD, University of Virginia

ANTHONY SANTELLA
Instructor of Marketing
BA, Thiel College; MA, Auburn University

ROY JO SARTIN
Instructor of History
BA, Texas Technical University; MA, University of Colorado Colorado Springs

RAPHAEL SASSOWER
Professor of Philosophy
BA, Lake Forest College; MA, PhD, Boston University

KIMBERLY SCHENCK
Senior Instructor of Health Sciences
BS, Colorado State University; MS, University of Kansas

RINALDO B. SCHINAZI
Professor of Mathematics
PhD, University of Sao Paulo, Brazil

DAVID K. SCHMIDT
Professor Emeritus of Mechanical and Aerospace Engineering
BSAE, Purdue University; MSAE, University of Southern California; PhD, Purdue University

ALLEN M. SCHOFFSTALL
Professor of Chemistry
BS, Franklin and Marshall College; PhD, State University of New York, Buffalo

JEFFREY E. SCHOLES
Assistant Professor of Philosophy
BA, Baylor University; MDiv, Princeton Theological Seminary; PhD, University of Denver/Iliff School of Theology

TERESA P. SCHWARTZ
Interim Executive Vice Chancellor for Academic Affairs; Associate Professor of Public Administration
BA, Oberlin College; MEd, University of North Carolina; PhD, University of Colorado Denver

ROBERT W. SEBESTA
Emeritus Associate Professor of Computer Science
BS, University of Colorado; MS, PhD, Pennsylvania State University

RONALD M. SEGA
Professor of Electrical and Computer Engineering
BS, U.S. Air Force Academy; MS, Ohio State University; PhD, University of Colorado

DANIEL SEGAL
Professor of Psychology
BS, Tulane University; PhD, University of Miami

SUDHANSHU K. SEMWAL
Professor of Computer Science
BS, University of Roorkee, India; MS, University of Alberta, Canada; PhD, University of Central Florida

HARLOW ELIZABETH SHEIDLEY
Associate Professor Emerita of History
AB, Stanford University; MA, PhD, University of Connecticut

MORGAN M. SHEPHERD
Professor of Information Systems
BSME, University of Virginia; PhD, University of Arizona

JACK E. SHERMAN
Professor Emeritus of Education
BS, Wisconsin State University; MS, PhD, University of Wisconsin

PAMELA S. SHOCKLEY-ZALABAK
Professor of Communication; Chancellor
BA, MA, Oklahoma State University; PhD, University of Colorado Boulder

CHARLES M. SHUB
Professor of Computer Science
BS, MS, University of Maryland; PhD, University of Kansas

MAX SHULMAN
Assistant Professor of Theatre
BS, Northwestern University; MA, City University of New York; PhD, Tufts University

MATTHEW NATHANIEL SIEBERT
Instructor of English
BA, MA, University of Colorado Colorado Springs

AMY SILVA-SMITH
Chair, Associate Professor of Nursing
BS, MS, PhD, University of Wisconsin

EMILY SKOP
Professor of Geography and Environmental Studies; Director, Graduate Studies, Geography and Environmental Studies
BA, University of Miami, Florida; MA, PhD, Arizona State University

CURTIS F. SMITH
Senior Instructor of Music
BS, Southern Colorado State College; MA, Eastman School of Music of the University of Rochester

HILARY R. SMITH
Assistant Professor of Sociology
BS, Texas Christian University; MS, PhD, Arizona State University

KIMBRA L. SMITH
Associate Professor of Anthropology
AB, Princeton University; MA, PhD, University of Chicago

NANCY L. SMITH
Dean of Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences, Professor of Nursing
BS, MS, California State University; MS, PhD, University of Colorado

BEVERLY A. SNYDER
Professor Emeritus of Counselor Education
BA, University of Florida; MEd, EdD, University of Central Florida

ALEXANDER SOIFER
Professor of Mathematics and Interdepartmental Studies
MS, PhD, Moscow State Pedagogical Institute, USSR

HOYOUNG SONG
Associate Professor of Electrical and Computer Engineering
BS, MS, Woman's University, South Korea; PhD, University of California, Davis

BLAISE SONNIER
Associate Professor of Accounting
BS, University of Lousiana at Lafayette; JD, Louisiana State University; DBA, Grenoble Ecole de Management

VALMIKI SOOKLAL
Instructor of Mechanical and Aerospace Engineering
BS, University of West Indies; MS, Tulane University; PhD, Tulane University

KATHRIN SPENDIER
Assistant Professor of Physics
BA, MA, PhD, University of New Mexico

JEFF SPICHER
Associate Professor of Nursing, Associate Dean of Clinical Affairs
BS, Eastern Mennonite University; BS, MS, University of Virginia; DNP, University of Colorado Denver

STEPHANIE SPRATT
Electronic Resources and Serials Librarian; Assistant Professor, Kraemer Family Library
BS, University of Nebraska at Omaha; MLS, University of Missouri at Columbia

CONSTANCE M. STALEY
Professor of Communication; Director of Gateway Program Seminar
BS, Ball State University; MA, PhD, University of Colorado Boulder

JANAE STANSBERY
Senior Instructor of Communication
BA, MA, University of Colorado Colorado Springs

LE ANNE STARR
Clinical Teaching Assistant Professor of Psychology
BA, University of Colorado Colorado Springs; MA, Colorado School of Professional Psychology; PsyD, University of the Rockies

CARMEN STAVROSITU
Associate Professor of Communication
BA, University of Bucharest; MA, PhD, Pennsylvania State University

MARIA SERGIA STEEN
Associate Professor of Spanish
Licenciatura en Filosofia y Letras, Universidad de Sevilla, Spain; MA, PhD, University of Colorado

JAMES W. STEVENS
Chair, Professor of Mechanical and Aerospace Engineering
BS, MS, PhD, Brigham Young University

COLLEEN STILES
Instructor, College of Business
BA, University of Minnesota; MA, Wake Forest University; PhD, University of Colorado Colorado Springs

GREGORY N. STOCK
Professor of Technology Management
BSE, MS, Duke University; PhD, University of North Carolina

ILSE STRATTON
Senior Instructor Emerita of German and Latin
BS, Ruhr University, Duisburg, Germany; MA, University of Colorado Boulder

DALLAS H. STRAWN
Senior Instructor of Educational Leadership, Research, and Foundations
BA, Olivet Nazarene University; MA, PhD, Michigan State University

GORDON M. STRINGER
Senior Instructor of Finance and Information Systems
BA, University of Colorado Boulder; MBA, University of Colorado Colorado Springs

ANDREW SUBUDHI
Chair, Biology; Associate Professor of Biology
BA, Colorado College; MS, Colorado State University; PhD, University of Utah

STEPHEN SUH
Assistant Professor of Sociology and Women's and Ethnic Studies
BA, University of California, San Diego; MA, PhD, University of Minnesota, Twin Cities

BARBARA R. SWABY
Professor of Education
BA, Tusculum College; MA, PhD, University of Minnesota

BENJAMIN SYN
Instructor of English
BA, MA, University of Colorado Denver

SONJA TANNER
Associate Professor of Philosophy
BA, University of California, Irvine; MA, PhD, New School for Social Research

SUSAN TAYLOR
Professor of English
BA, Swarthmore College; AM, PhD, Brown University

LESLIE TEKAMP
Instructor of Electrical and Computer Engineering
BSEE, Wright State University; MSEE, Wright State University

MORGEN THOMAS
Instructor of Sociology
BA, MA, University of Colorado Colorado Springs

RICHARD THOMAS
Instructor of English
BA, University of California, Berkeley; MA University of Colorado Boulder

CATHY THOMPSON
Visiting Professor of Nursing
BSN, MSN, University of Texas; PhD, Texas Woman's University

JANICE THORPE
Senior Instructor of Communication
BS, University of Tennessee; MA, University of Colorado Colorado Springs

MEGHAN TIFFT
Senior Instructor of English
BA, MFA, University of Arizona

TIFFANY TINSLEY WEEKS
Instructor of Dance and Theatre
BFA, University of Florida

RAMON TIRADO
Senior Instructor of Physics
BS, University of Maryland European Division, Heidelberg, Germany & Vicenza, Italy; MS, Marymount University, Arlington, VA

KATHLEEN TOMLIN
Assistant Professor of Management
BA, Rutgers University, MA, PhD, Princeton University

MYSHA TOMPKINS
Instructor of Nursing
BSN, University of Virginia; MS, Grand Canyon University

JOEL TONYAN
Systems and User Experience Librarian; Assistant Professor; Kraemer Family Library
BA, University of Central Missouri; MA, University of Arkansas; MLIS, University of Oklahoma

STEVEN G. TRAGESSER
Associate Professor Mechanical and Aerospace Engineering
BS, University of Illinois; MS, PhD, Purdue University

CAROLE TRAYLOR
Assistant Professor, Clinical Teach Track of Nursing
BSN, Spalding University; MSN, Virginia Commonwealth University; DNP, University of Colorado

SARAH TRESCHL
Senior Instructor of English
BA, Elon University; MA, North Carolina State University

M. SCOTT TRIMBOLI
Assistant Professor of Electrical and Computer Engineering
BS, U.S. Air Force Academy; MS, Columbia University; PhD, Oxford University

SHERI TRUMPFHELLER
Senior Instructor of Accounting
BA, Colorado State University; MBA, University of Colorado Colorado Springs

JUSTIN TUCKER
Instructor of English
BA, University of Texas at San Antonio;MA, Texas State University

DEBORAH TUFFIELD
Instructor of Nursing
BSN, University of Missouri; MSN, University of Colorado Colorado Springs

GREGORY TUMBUSH
Instructor of Electrical and Computer Engineering
BS, Wright State University; MS, The Ohio State University; PhD, University of Cincinnati

KEVIN TVRDY
Assistant Professor of Chemistry
BS, University of Nebraska; PhD, University of Notre Dame

ZEK VALKYRIE
Instructor of Sociology

BA, MA, University of Colorado Colorado Springs; PhD University of Colorado Boulder

SCOTT VAN NESS
Instructor of Operations Management
BS, University of Colorado; MA, Golden Gate University; ABD, Univeristy of the Rockies

KEVIN VAN WINKLE
Instructor of English
BA, University of Colorado Colorado Springs; MA, Colorado State University, Pueblo; PhD, Texas Technical University

JAMES VAN SCOTTER
Assistant Professor, College of Business

JONATHAN VENTURA
Assistant Professor of Computer Science
BS, University of California, Santa Barbara; MS, University of California, Santa Barbara; PhD, University of California, Santa Barbara

JAMES T. VIVIAN
Instructor of Chemistry
BA, Michigan State University; MS, Montana State University; PhD, University of Nevada, Reno

BRANDON J. VOGT
Associate Professor of Geography and Environmental Studies
BS, University of Missouri; MA, PhD, Arizona State University

ROBERT VON DASSANOWSKY
Professor of German and Film Studies; Head, German Program; Director of Film Studies
BA, MA, PhD, University of California, Los Angeles

MARY CLAIRE WAHL
Instructor of Nursing
BSN, Chico State University; MS, Georgetown University

THOMAS WAHL
Senior Instructor of English
BA, Seattle University; MA, University of Nevada, Las Vegas

KRISTEN WALCOTT-JUSTICE
Assistant Professor of Computer Science
BS, Allegheny College; MS, University of Virginia; PhD, University of Virginia

KIM B. WALKER
Professor of Communication
BA, Millikin University; MS, PhD, Southern Illinois University

RODNEY S. WALKER
Instructor of Criminal Justice
AAS, Pikes Peak Community College; BS, University of Southern Colorado; MCJ, University of Colorado Denver

CHIA-JIU (Charlie) WANG
Professor of Electrical and Computer Engineering
BS, National Central University (Taiwan); MSEE, Tatung Institute of Technology (Taiwan); PhD, Auburn University

KEE R. WARNER
Associate Vice Chancellor for Inclusion and Academic Engagement; Professor of Sociology
BA, Haverford College; MPCD, University of Colorado Denver; MA, PhD, University of California, Santa Barbara

DONALD D. WARRICK
Professor of Management and Organizational Change
BA, MBA, University of Oklahoma; DBA, University of Southern California

LINDA K. WATTS
Chair, Anthropology; Associate Professor of Anthropology
BA, State University of New York College at Buffalo; MA, State University of New York Center at Buffalo; PhD, Arizona State University

REBECCA WEBB
Associate Professor of Mechanical and Aerospace Engineering
PhD, Oregon State University; MS, Pennsylvania State University; BS, University of Rhode Island

JOSEPH D. WEHRMAN
Chair, Department of Counseling and Human Services; Associate Professor of Counseling and Human Services
BS, Montana State University, Billings; MS, St. Cloud State University; PhD, The University of South Dakota

YANG WEI
Assistant Professor of History
BA, Nanjing University, PRC; MA, University of Illinois in Urbana-Champaign; PhD, Harvard University

DIANE WEIMAR
Lecturer of Nursing, Academic Coordinator
BS, Drake University; MEd, Regis University

BARRY K. WEINHOLD
Professor Emeritus of Counselor Education
BS, Millersville University; PhD, University of Minnesota

HENRIIKKA WEIR
Assistant Professor of Criminal Justice
BA, MS, PhD, University of Texas, Dallas

DAVID J. WEISS
Associate Professor of Chemistry; Associate Chair, Chemistry; Faculty Director of the Compass Curriculum
BS, University of California, Riverside; PhD, University of Kansas

ROBERT C. WELSHON
Chair, Philosophy; Professor of Philosophy
BA, MA, Colorado State University; PhD, Brown University

ANDREA WENKER
Senior Instructor of English
BA, University of Colorado Colorado Springs; MA, Colorado State University

GLEN WHITEHEAD
Associate Professor of Music; Director of Music Program
BA, New England Conservatory of Music; MA, DMA, University of California, San Diego

MARK A. WICKERT
Professor of Electrical and Computer Engineering
BSEE, MSEE, Michigan Technological University; PhD, University of Missouri, Rolla

RICHARD S. WIENER
Chair, Associate Professor of Computer Science
BEE, MEE, City College of New York; PhD, Polytechnic Institute of Brooklyn

IDA WILDING
Instructor of American Sign Language
BA, Gallaudet University

RHONDA WILLIAMS
Associate Professor of Counseling and Human Services
BS, Kansas State University; MA, University of Colorado Colorado Springs; EdD, Kansas State University

STEVEN H. WILLIAMS
Senior Instructor in Mechanical and Aerospace Engineering
BA, Cornell University; MS, PhD, Arizona State University

BRET WINDOM
Assistant Professor of Mechanical Engineering
BS, MS, PhD, Mechanical Engineering, University of Florida

REGINA WINTERS
Senior Instructor of Public Administration
BA, University of Wyoming; MPA, University of Wyoming

TOM D. WOLKOW
Associate Professor of Biology
AB, Lafayette College; PhD, Purdue University

ROBERT WONNETT
Scholar in Residence, School of Public Affairs
BS, MA, University of Colorado Boulder; JD, University of Denver; MPA, PhD, University of Colorado Denver

G. CAROLE WOODALL
Associate Professor of History and Women's and Ethnic Studies
BA, Southwestern University, Texas; MA, Bogazici University, Istanbul, Turkey; PhD, New York University

GEORGE WOODWARD
Associate Professor of Finance
BA, San Jose State University; MA, University of California, Berkeley; PhD, Monash University

DANA WORTMAN
Senior Instructor of Computer Science
BS, University of Virginia; MS, University of Virginia; PhD, University of Maryland Baltimore County

COLIN D. WREN
Assistant Professor of Anthropology
BA, PhD, McGill University; MSc, University College London

RICHARD M. WUNDERLI
Professor Emeritus of History
BA, MA, University of Utah; PhD, University of California, Berkeley

SANDY K. WURTELE
Associate Dean, College of Letters, Arts, and Sciences; Professor of Psychology; Director of Undergraduate Training, Psychology
BA, University of Nebraska; MA, PhD, University of Alabama

THOMAS G. WYNN
Distinguished Professor of Anthropology
AB, Occidental College, Los Angeles; AM, PhD, University of Illinois, Urbana

YANG XU
Assistant Professor of Accounting
MBA, Pepperdine University; PhD, University of Kansas

PATRICK YARNELL
Senior Instructor of Philosophy
BA, Kansas State University; MA, PhD, University of Nebraska

QING YI
Associate Professor of Computer Science
BS, Shandong University; MS, Institute of Computing Technology; PhD, Rice University

CHUAN YUE
Assistant Professor of Computer Science
BE, Xidian University; ME, Xiadian University; PhD College of William and Mary

KIMBERLY ZAHLLER
Assistant Professor of Accounting
BA, Miami University; MA, The Ohio State University; MBA, Miami University; MSA, PhD, University of Central Florida

ROBERT A. ZAWACKI
Professor Emeritus of Management and International Business
PhD, University of Washington

LEI ZHANG
Professor of Sociology
BA, MA, Peking University; PhD, University of Minnesota

YU ZHANG
Professor of Mathematics
BS, Beijing Normal Institute (China); MS, PhD, Cornell University

MINGMING ZHOU
Assistant Professor of Finance
PhD, Rensselaer Polytechnic Institute

XIAOBO (Joe) ZHOU
Assistant Professor of Computer Science
BS, MS, PhD, Nanjing University, China

RODGER E. ZIEMER
Professor Emeritus of Electrical and Computer Engineering
BS, MS, PhD, University of Minnesota

LAURA B. ZIMMERMAN
Instructor of Chemistry
BA, Colorado College; PhD, University of Michigan

THOMAS J. ZWIRLEIN
Professor of Finance
BS, MBA, University of Wisconsin, LaCrosse; PhD, University of Oregon

University of Colorado
Colorado Springs

Fall 2016

Classes begin August 22, 2016

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