College of Arts and Sciences

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Aims and Objectives

The College of Arts and Sciences (A&S) is committed to providing a balanced education that matches cultural breadth with disciplinary depth. Students in the College of Arts and Sciences learn to address complex contemporary problems and to place them in their wider social, historical and ethical contexts. To achieve these goals, degree programs require students to develop expertise in a particular field, gain critical understanding of major areas of human knowledge and select from required courses and free electives to prepare for the challenges of the new century.

A successful student in any of the departments and programs in the College of Arts and Sciences will have an excellent foundation for professional success, graduate study, and a passion for lifelong learning.

Through hands-on research and creative projects (either on faculty projects or independently with faculty guidance and mentoring), fieldwork, internships, and study abroad, students integrate and bring coherence to their classroom learning.

Student Responsibilities

To graduate from the College of Arts and Sciences, students must satisfy all university, college, and major requirements for a given degree. These requirements apply whether the work is taken within the college or transferred from anywhere else within or outside the university (please refer to section below "Acceptance of Transfer Credit").

The college holds students responsible for knowing degree and major requirements and for completing the necessary courses. Students are also expected to know the regulations that govern the academic standards needed to continue study at the university. Students should be aware that changing majors and/or colleges may result in delays in meeting degree requirements and that requirements themselves sometimes change (see "Graduation: Requirements and Procedures" section of this *Catalog*).

Academic Advising

To help plan a program of study, students are assigned an academic adviser by the department/program of their major. Students undecided about a major are advised in the UW Center for Advising and Career Services (222 Knight Hall).

Students should consult regularly with their academic adviser not only for course scheduling, but also to discuss educational and career goals. Faculty and professional advisers can connect students to the many college and university resources to assist undergraduate study. Instructors are also willing to discuss concerns students may have regarding specific courses.

Changing/Declaring a Major or Minor

When ready to declare or change a major, minor, or dual/concurrent major in a department or program in the college, the appropriate form is available from the Office of the Registrar (167 Knight Hall) or the Registrar's Web page. Approval is required from the appropriate department heads/program directors. Departments/programs will assign advisors at the time of signing their approval on the form.

Programs of Study

Undergraduate Degrees

A variety of specialized concentrations are offered within many of the following degree programs. Take a look at the department sections in this *Catalog* that follow this section or the departments' Web sites. Additionally, there are several inter-college or interdisciplinary degrees/majors such as Microbiology, Earth System Science, and the affiliated major in Environment and Natural Resources that draw courses from several disciplines. See more detailed descriptions in this *Catalog* or the University of Wyoming home page at www.uwyo.edu, click on the A-Z Directory.

Bachelor of Arts

- American Indian studies
- American studies
- Anthropology
- Art
- Art History
- Chemistry
- Communication
- Criminal justice
- English
- French
- Geography
- Geology and Earth sciences
- Gender and Women's Studies
- German
- History
- Humanities/fine arts
- International studies
- Journalism
- Mathematics
- Mathematics/science
- Music
- Philosophy
- Physics
- Political science
- Religious studies
- Russian
- Self-designed major
- Social science
- Sociology
- Spanish
- Statistics
- Theatre and dance

Bachelor of Science

- Astronomy/astrophysics
- Biology
- Botany
- Chemistry
- Chemistry (ACS approved)
- Communication
- Environmental geology/geohydrology
- Geography
- Geology
- Journalism
- Mathematics
- Mathematics/science
- Physics
- Physics (Plus) {affiliated concentration}
- Physiology
- Political science
- Psychology
- Self-designed major
- Social science
- Sociology
- Statistics
- Wildlife and fisheries biology and management *(professional)*
- Zoology

Bachelor of Fine Arts

- Art
- Theatre and dance

Bachelor of Music

- Music education
- Music performance

Graduate Degrees

Master of Arts

- American studies *(interdisciplinary)*
- Anthropology
- Communication
- English
- French
- Geography
- German
- History
- International studies *(interdisciplinary)*
- Journalism
- Mathematics
- Philosophy
- Political science
- Psychology
- Sociology
- Spanish

Master of Science

- Botany
- Chemistry
- Geology
- Geophysics
- Mathematics
- Natural science *(interdisciplinary)*
- Physics
- Psychology
- Reproductive biology
- Statistics
- Zoology and physiology

Master of Arts in Teaching

- History
- Mathematics

Master of Fine Arts in Creative Writing

Master of Music

Master of Music Education

Master of Planning
(community and regional)

Master of Public Administration

Master of Science in Teaching

- Chemistry
- Geography
- Mathematics
- Natural science *(interdisciplinary)*
- Physics

Doctor of Philosophy

- Anthropology
- Botany
- Chemistry
- Geology
- Geophysics
- Mathematics
- Physics
- Psychology
- Reproductive biology
- Statistics
- Zoology and physiology

Minors in Arts and Sciences

The College of Arts and Sciences offers all university students systematic studies leading to recognized academic minors. Minors are available in all academic programs in the college and in a number of interdisciplinary areas.

A&S minors have two aims: to encourage students to create a focus for their course work outside their major by coordinating their elective studies; and to enhance chances of employment or graduate admission with a formally recognized field of study.

Minors consist of course requirements ranging from 18-24 credit hours of study, typically including significant work at the junior and senior level. A&S departments and programs offering minors and interdisciplinary degrees may have further conditions and restrictions regarding requirements in the minor. To be counted toward a minor, courses must be completed with a grade of C or better.

Students desiring a minor must notify the department in which the minor is offered. Forms for declaring a minor are available in the Office of the Registrar (167 Knight Hall) or on the Registrar's Web page. The department of the minor will assign an adviser.

For a description of the minors in A&S, see department offices or Web sites.

Minors available in the College of Arts and Sciences include:

- African American and Diaspora Studies
- American Indian Studies
- American Studies
- Anthropology
- Art
  - Art history
  - Ceramics
  - Drawing
  - Graphic Design
  - Metalsmithing
  - Museum Studies
  - Painting
  - Photography
  - Printmaking
  - Sculpture
- Biology
- Botany
- Chemistry
- Communication and journalism
  - Communication
  - Journalism
  - Marketing Communication
  - Public Relations
- Criminal Justice
  - Criminal Justice
  - Prelaw
- English
  - Creative writing
  - Literary studies
  - Professional writing
- Ethnomusicology
- Gender and Women's Studies
  - Gender and Women's Studies
  - Queer Studies
- Geography
  - Geographic Information Sciences
  - Geography
  - Planning
- Geology/geophysics
- Geology
- History
- International studies
  - Asian studies
  - European studies
  - International studies
- Latina/o Studies
- Mathematics
- Modern and classical languages
  - Chinese
  - Classical Civilization
  - French
  - German
  - Japanese
  - Latin
  - Russian
  - Spanish
- Music
- Paleoenvironmental studies (interdisciplinary)
- Philosophy
  - Environmental values
  - Ethics
  - Philosophy
- Physics/astronomy
  - Astronomy
  - Physics
- Political science
  - American politics
  - International relations and comparative government
  - Political theory
  - Public law
- Psychology
- Religious studies
- Remote Sensing
- Sociology
- Statistics
- Theatre and dance
  - Dance
  - Theatre
- Wildlife and fisheries biology and management

Zoology/physiology
Animal and human physiology
Neuroscience
Zoology

College Degree Requirements-The 2015 A&S Core

Bachelor of Arts or Science Programs

Beginning fall 2015, new university and college general education curricula, the 2015 University Studies Program (USP) and the 2015 A&S Core, were implemented. Refer to the USP section of this *Catalog* for details regarding University Studies requirements. Students who matriculate for the first time at UW or a Wyoming community college in fall 2015 or after are required to follow both the new USP and A&S Core. Students transferring from a Wyoming community college with an associate's degree and the Wyoming Core completed between May 2013 and fall 2015, may continue to complete the 2003 USP and 2003 A&S Core requirements (if there has been no interruption in their enrollment for a year or more). Students who matriculated at UW or a Wyoming community college prior to fall 2015 and choose the 2015 USP must also complete the 2015 A&S Core requirements. For additional information please refer to the sections in this *Catalog* that describe the university graduation requirements, the 2015 University Studies Program, and the policies for reenrolling at UW after an absence of a year or more.

I. College credit hour requirements

A. **Minimum total semester hours 120** Professional degree programs require 128 hours.

B. **Upper-division credit requirements (42).** Thirty of the 42 hours must be earned from UW. Courses must be taken for a letter grade unless offered for S/U only. This is an all-university requirement for all degree programs and may come from the courses that fulfill the USP, the A&S Core, the major, the minor, and electives.

C. **Major field of study (30-60).** Credit hours in excess of 60 in the major subject may not be used to satisfy the requirement of 120 hours for graduation (excludes the A&S professional degree programs which require 128 credit hours). At least 30 hours of C grade or better must be earned in the major subject (the major may require more). Courses in the major must be taken for a letter grade unless offered for S/U only.

D. **A&S Core requirements (6).** Courses must be taken for a letter grade unless offered for S/U only.

All other university and college regulations apply. See "Graduation: Requirements and Procedures" section of this *Catalog* for more information. Graduate level "Enrichment" courses do not count toward the requirements for a bachelor's degree.

II. 2015 A&S Core Curriculum

Graduates of the College of Arts and Sciences are expected to be liberally educated, to have the knowledge and skills to deal with the unexpected, and to see opportunities from multiple perspectives. To develop these abilities, the college faculty implemented the A&S Core.

The approved courses for the following requirements are searchable within WyoRecords under the Look-Up Classes feature.

1. **U.S. Diversity (ASD).** This requirement allows students to explore the complexity of cultural identities in the U.S. and interdependence of the cultures. Students will gain an understanding of the influences of categories such as race, class, ethnicity, gender, disability, sexual orientation, religion, and age on American behaviors, institutions, values, and beliefs.
2. **Global Awareness (ASG).** Because citizens ever more frequently encounter behaviors and practices based on beliefs, conditions, and assumptions different from their own, they need to understand the nature and function of culture. Our students should have an awareness of the multiple links that affect the living conditions and range of action of peoples of the world, including international systems of commerce, art, science, technology, politics, communication, belief, and justice, among other.

College Degree Requirements Prior to Fall 2015 for Continuing and Reenrolling Students

A&S Core requirements for a student continuing a degree program in effect at the time of matriculation at UW are found in the relevant previous *Catalog*. Contact the Dean's office with any questions.

Students who re-enter the university after an absence of a year or more should refer to other sections of this *Catalog* for university policies and procedures. Unless approved otherwise, reenrolling students, after a year's absence, are required to follow the University Studies and A&S Core requirements in effect the semester of their re-enrollment. However, all majors in A&S who have yet to complete the A&S Core, regardless of their initial enrollment, must refer to the current list of approved courses.

Checksheets and lists of courses that satisfy A&S college core requirements are available on the Web at www.uwyo.edu/as or in the Dean's office.

Departments and programs in the College of Arts and Sciences may require reenrolling students to complete requirements in the major that meet the current expectations of the discipline.

Transfer Students and Acceptance of Transfer Credit

The College of Arts and Sciences and its departments reserve the right to grant transfer credit toward the bachelor's degree only for those courses where a grade of C or better was earned. Students transferring credits from a university or college outside Wyoming with questions about how courses taken elsewhere fulfill the A&S Core may contact the Center for Advising and Career Services (222 Knight Hall, 766-2398).

Courses Taken for S/U Credit

Students may include up to 20 semester credit hours in free electives with a grade of S as part of the total hours required by the College of Arts and Sciences for graduation. However, no S/U hours may be used to satisfy university and college core general education requirements or major requirements, including the required 42 upper-division credit hours unless the course is offered for S/U grading only.

Students registering in courses for S/U grades are subject to all general regulations.

Professional Degree Programs

Professional curricula are available in seven fields. A minimum of 128 hours is required. Students enrolled in professional curricula must earn a grade of C or better in the major and fulfill all other college and university requirements including at least 42 hours of course work at the upper-division level with 30 of these from UW. Students should verify curriculum requirements with the appropriate

department and/or the college dean's office. The eight professional programs consist of the following:

Art	B.F.A.
Chemistry (ACS certified)	B.S.
Music Education	B.M.
Music (Performance)	B.M.
Physics Plus	B.S.
Theatre and dance	B.F.A.
Wildlife and fisheries biology and management	B.S.

Concurrent Majors

Students may pursue two or more majors simultaneously. With careful planning, A&S students may be able to use all or most of the free elective hours for requirements in the other majors. Refer also to the section, "Graduation: Requirements and Procedures" in this *Catalog*.

The A&S Core must be met only once by students whose primary major is in the College of Arts and Sciences. Students whose degree programs are in other UW colleges are welcome to earn a concurrent major in A&S. These students do not have to meet the A&S Core requirements. The student earns one degree with one diploma.

Students pursuing a concurrent major must contact both departments involved for assignments to advisers.

Dual Degrees

Students may simultaneously pursue degrees in the same or more than one UW college. In addition to requirements described in the section "Graduation: Requirements and Procedures" in this *Catalog*, students in another UW college who wish to earn a degree from A&S must also complete the A&S Core. A&S students working on dual degrees in the A&S College need to meet the A&S Core just once. A diploma is awarded for each degree.

Each additional degree requires 30 more credit hours added to the 120 credits (or 128 for professional degrees) to the primary degree. Of these 30 credits, 12 have to be at the 3XXX-4XXX levels.

Second Bachelor's Degrees

For students seeking a second bachelor's degree in the College of Arts and Sciences whose **first degree is from another university**, the minimum requirements include:

- 30 semester hours earned from the University of Wyoming, 12 of which must be upper division (3XXX-4XXX level) or graduate level (credit by examination does not count as UW hours).
- Completion of the U.S. and Wyoming Constitutions requirement (V courses in the University Studies Program course list in this *Catalog*).
- If the first degree is from an institution where English is not the predominant language, the COM1 and COM2 requirements of the University Studies Program must be completed successfully.
- Students must also meet the 2015 A&S Core requirements.

For students whose **first degree is from UW**:

- The additional required 30 hours (12 of these at the 3XXX-4XXX) are added to the degree requiring the least number of hours. For example, for a first degree in a non-professional program, A&S requires 120 hours. So the total credits a UW student would have to complete for the second bachelor's degree is a minimum of 150 credits. Since the University requires a total of 42 upper division hours for a degree, for the second degree from A&S, a UW student would need to earn a total of 60 hours at the 3XXX-4XXX level. For more information, please see the Second Bachelor's Degree entry in the section, "Graduation: Requirements and Procedures" in this *Catalog*.
- Students whose **first degree is from another UW college** must meet the 2015 A&S Core requirements.
- In situations in which a student is subsequently required to take coursework from another collegiate institution to fulfill major and overall hour requirements for a second degree from the university, the student's department can ask the Office of the Registrar to load selected courses into the student's record.

Distributed Majors Degree Programs

The specific requirements for majors in humanities/fine arts, mathematics/science and social science are outlined below. Required courses in these majors are selected from several A&S departments and in some cases, outside the college. The basic college requirements are those as described above for the Bachelor of Arts or Science degrees. Appropriate courses from outside A&S may be substituted after consultation with the adviser.

1. Humanities and Fine Arts (B.A. only)

To fulfill the 42 credit hours required in the major, the student selects three areas of emphases from the participating departments/programs with a minimum distribution of 18 hours in the first area of emphasis and 12 hours in each of the two other areas. Participating departments/programs include American Studies, African American and Diaspora Studies, American Indian studies, anthropology, art, Latina/o studies, communication and journalism, English, history, modern and classical languages, music, philosophy, political science, religious studies, theatre and dance, and women's studies. See the A&S dean's office or the Web at www.uwyo.edu/as/majors-and-minors/index.html for approved courses and detailed checksheet.

In addition to the 42 hours in this major, students are required to take 12 hours of a single foreign language, or the equivalent (American Sign Language is acceptable) with a grade of at least a C. Only classics 2010 and 2020 and other language courses numbered above 2030 may be counted toward the 42 hours in the major.

The 42 credits must include:

- At least 24 credit hours of upper division courses are required in the major with a distribution of at least 12 credits in one area of emphasis and 6 credits in a second area.
- A grade of C or better must be earned in all 42 credit hours in the major and all courses must be taken for a letter grade unless offered for S/U only.

A maximum of 4 credit hours of music lessons and dance technique courses may apply.

Students may not minor in the department/program that is selected as the first area of emphasis.

All other university and college degree requirements apply.

Students pursuing this major may go to the Department of Philosophy in Ross Hall for assignment to an adviser.

2. Social Science (B.A. or B.S.)

To fulfill the 48 credit hours required in the major, the student selects four core areas of emphasis from the participating departments/programs, with a minimum distribution of 15 credit hours in the first area of emphasis and 6 hours in each of the other three areas. Participating department/programs include African American and Diaspora studies, American Indian studies, American studies, anthropology, Latina/o studies, communication and journalism, criminal justice, economics, geography, history, philosophy, political science, psychology, sociology, and women's studies. The first area of emphasis cannot be in economics or philosophy. See the A&S dean's office or the Web at www.uwyo.edu/as/majors-and-minors/index.html for approved courses and detailed checksheet.

The 48 credits must include:

- STAT 2050 or 2070. These also fulfill the Q requirement for the University Studies Program (USP).
- A USP-approved COM3 course that is also an approved College of Arts and Sciences social science discipline course.
- A minimum of 24 credit hours of upper-division courses in the major. At least one course, 3 credits, in the first area of emphasis must be at the 4XXX level.
- A grade of C or better must be earned in all 48 credit hours in the major and all courses taken for a letter grade unless offered for S/U only.

It is also recommended that students complete an upper-division social science research methods and a social science theory course. See the list of Approved courses.

Courses taken for the U.S./Wyoming Constitutions requirement do not count in the 48 credit hours in this major.

Students may not minor in the department/program that is selected as the first area of emphasis.

All other university and college degree requirements apply.

Students pursuing this major may go to the Center for Advising and Career Services in Knight Hall, room 222, for assignment to an adviser.

3. Mathematics and Science (B.A. or B.S.)

To fulfill the 48 credit hours required in the major, the student selects four core areas of emphases from the participating departments/programs, with a minimum distribution of 8 credit hours in each of the four areas. Participating departments/programs include anthropology, biology, botany, chemistry, geography, geology and geophysics, mathematics, physics and astronomy, psychology, statistics, and zoology and physiology. See the A&S Dean's office or the web at www.uwyo.edu/as/majors-and-minors/index.html for approved courses and detailed checklist. One of the four core areas may be outside the College of Arts and Sciences, if in a related science/math area.

The 48 credits must include:

- A minimum of 24 credits of upper-division courses must be earned across at least three of the core areas with at least 3 upper-division credits in each core area.
- A grade of C or better must be earned in all 48 credit hours in the major and all courses taken for a letter grade unless offered for S/U only.

At least 12 hours applied toward a minor must be from courses outside a core department. All other university and college requirements apply.

Students pursuing this major may go to the Department of Mathematics for assignment to an adviser.

Self-Designed Major

The Self-Designed Major (SDM) is an option for students who want a program of study that allows them to develop intellectual interests not now addressed by traditional majors and minors. The SDM encourages diversity and flexibility while requiring a clear academic focus and a unifying purpose. Most SDMs are interdepartmental and multidisciplinary.

Program requirements. Students are admitted to the program at least 3 semesters before their anticipated graduation. They must have a GPA of 3.0 and are expected to fulfill all university and college requirements. Students must maintain a minimum cumulative 3.0 GPA while in this program.

Application for the Program. Students first see an associate dean of the College of Arts and Sciences (109 A&S) who explains the program and helps with the application process. With the guidance of an appropriate faculty member, students prepare a three- to five-page rationale for the SDM and a specific list of courses, including a minimum of 24 hours of formal course work and 6 hours of independent study to be used to prepare a senior paper or project. Sixteen of the 24 hours of the formal coursework must be in A&S departments or programs. Students also need a letter of support from a primary faculty adviser, as well as consent from two or more additional faculty, to serve on their supervisory committee.

Senior Project. Approximately two months before the end of the senior year, each student submits a project or paper which summarizes or typifies the SDM. The project is then evaluated by the supervisory committee. The supervisory committee makes a recommendation to the Associate Dean who recommends the student for graduation.

Students will receive the appropriate bachelor's degree with the major shown as Self Designed Major: _____ (name of focus).

Earth System Science Interdisciplinary Degree Program

This intercollegiate, interdisciplinary Bachelor of Science program approaches the study of the Earth as a system, integrating the anthrosphere, atmosphere, biosphere, hydrosphere, and lithosphere to understand its complex interactions and prepare students to address issues of global environmental change.

In addition to ESS Core and Foundation courses in math, physics, chemistry, geographic information science, remote sensing, and biogeochemistry, students select a concentration in one of the participating departments. The current participating departments in the College of Arts and Sciences include anthropology, botany, geography, and geology/geophysics and the biology program. The college of the student's concentration department awards the degree. Students whose concentration is in one of the Arts and Sciences departments are also required to complete the A&S Core requirements.

For more information, go to www.uwyo.edu/ESS or see Dr. Robert D. Kelly (rkelly@uwyo.edu) in the Engineering Building, room 6072, or contact the A&S participating departments.

Microbiology Interdepartmental Program

The Bachelor of Science degree program in microbiology is an intercollegiate and interdisciplinary major with faculty and courses from the Colleges of Agriculture, Arts and Sciences, and Health Sciences. Students may obtain their degree in the College of Agriculture and Natural Resources.

For the major requirements, contact Program Director Ken Mills in the College of Agriculture and Natural Resources, 766-6638, kmills@uwyo.edu and the College of Agriculture and Natural Resources section on Microbiology in this *Catalog*.

Concurrent Major in Environment and Natural Resources

A student majoring in any A&S department/program may earn a double major by completing the courses required for the Environment and Natural Resource (ENR) program in addition to the requirements in their A&S major and the College A&S Core. The School of ENR Web site, http://www.uwyo.edu/enr has detailed information, or contact the School at (307) 766-5080.

Preprofessional Studies

The College of Arts and Sciences prepares students to enter professional schools through preprofessional programs of study described below.

Prelaw Study. Students usually need a bachelor's degree prior to beginning the study of law. There is no prescribed course of undergraduate study and no restrictions as to the field in which the degree is earned. However, to prepare for this competitive profession, prelaw students are advised to select courses that help to develop those talents and skills essential to the study and practice of law. Logical and critical thinking, conflict evaluation/resolution and effective verbal/nonverbal communication skills are essential. Additionally, students should understand the political, economic, social and cultural institutions and values that characterize human society. Rigorous courses in any discipline increase abilities in these areas. Regardless of the prelaw major, courses in the broad liberal arts--the sciences, social sciences, fine arts and humanities--increase understanding of the public's diverse interests and backgrounds.

Prelaw students do not have to declare a major at the time of first enrollment if they wish to explore options. Students who are undeclared in the College of Arts & Sciences are assigned advisers in the UW Center for Advising and Career Services until they decide upon a degree program. Please note that a prelaw minor is available.

In addition to an adviser in the major, prelaw students may contact the designated UW prelaw adviser for assistance in developing a program of study, for career counseling and for guidance in applying to law schools. Contact Michell Anderson, A&S 152, 766-2641, manders2@uwyo.edu for information. A bulletin board for prelaw students is located in the south hallway, 1st floor of the A&S Building. Students are encouraged to use these resources.

Additional information and useful resources may be found on the pre-law Web site, www.uwyo.edu/as/current-students/pre-law.html. Detailed information about applying to law schools, the Law School Admissions Test (LSAT) and preparation materials, and links to other web sites are at www.LSAC.org.

The active pre-law club invites all prelaw students to join. For information, contact the prelaw club adviser, Michell Anderson at manders2@uwyo.edu.

Library Preprofessional Study. Librarians are information professionals who research, organize, and classify materials so the public can access information. Not only do they work with printed materials, but all the technological advances in digital media such as electronic databases and eBooks. Some librarians focus on teaching the public, scholars, and students how to access and use these materials, while others concentrate on collecting and maintaining these diverse resources. Librarianship offers many career opportunities to people of different academic backgrounds, interests, and talents. Most public, academic, and special libraries require a Master's degree in library science (MLS).

The degree programs and minors in the College of Arts and Sciences offer the variety of academic preparation expected by accredited library schools in the country. Most of the graduate schools in library science require a bachelor's degree, a good undergraduate record, and a reading knowledge of a foreign language for admission. The best undergraduate preparation includes a wide range of courses in the sciences, social sciences, and humanities along with a strong concentration in one subject area. The choice of a major will be determined by the student's academic interest and professional objective. The general education that the University Studies and the A&S Core require provide the well-rounded background graduate schools expect of their MLS candidates.

Additional information about library schools, their requirements, and programs as well as career opportunities may be obtained from the reference desk at Coe Library and the Center for Advising and Career Services. The U.S. Bureau of Labor Statistics "Occupational Outlook Handbook" at www.bls.gov/oco/home.htm has detailed descriptions of the varied work of librarians, working conditions, employment outlook, and sources for additional information.

Premedical, Predental and Preoptometry Study. Students with the most promise and the best undergraduate preparation have the competitive advantage in being admitted to these professional programs. These schools are favorably impressed by a broad educational background, including a substantial number of both non-science and science courses; therefore, students are well advised to look beyond the minimum requirements.

Students may select any major in which they are interested. In addition to completing all university, college and departmental requirements, students must include in their curriculum the basic professional school requirements such as courses in biology, chemistry, math, and physics. Professional schools have other specific requirements and students should learn about any additional recommendations from those professional schools in which they are interested. For assistance, contact the preprofessional adviser in the College of Health Sciences, 110 & 112 Health Sciences Center, (307) 766-6704 or 766-3499, or preprof.hs@uwyo.edu.

Common majors in the College of A & S for these preprofessional programs include chemistry, biology, botany, psychology, physiology, and zoology. However, there are preprofessional students in programs as diverse as theatre and dance and anthropology. Students need not declare a major immediately upon first enrollment. Advisers in individual departments can discuss options or if students wish to remain undeclared, they are advised in the UW Center for Advising and Career Services.

Preprofessional assistance is available in the Departments of Chemistry, Physics, Psychology, and Zoology/physiology. The preprofessional advisers in the College of Health Sciences have current information regarding professional school admission requirements, entrance examinations, programs in Western Interstate Commission on Higher Education

(WICHE), Wyoming Medical Contract Program WWAMI (affiliated with the University of Washington School of Medicine) and financial assistance for professional education. The honor society for students enrolled in preprofessional studies, Alpha Epsilon Delta, is also administered in the College of Health Sciences. The Web site, http://www.uwyo.edu/preprof/ includes additional information.

Internships

Many departments in the College of Arts and Sciences offer internships for academic credit, and some provide monetary compensation. Academic internships provide practical, hands-on experience in a professional job setting as a complement to classroom instruction. An internship can provide students with both insight and preparation for future jobs. All internships require a strong background in writing, organizational ability and analytic skills. Junior or senior standing is recommended.

Special Courses (AS)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Intellectual Community of Undeclared Students, Building Connections and Community. 2. [I,L◀▶(none)] Introduction to the intellectual community of the University of Wyoming, information literacy, and higher education in general, and is specifically intended for students who have not yet made a decision about their college major. Students will begin to develop the critical thinking skills that are necessary in higher education and to explore the primary intellectual activities of various disciplines. (Offered fall semester)

1100. Academic and Career Orientation. 1. Provides students with opportunity to explore areas of study available within the colleges of the university and to evaluate their own abilities, interests and skills relative to career choice. Emphasis is placed upon study skills, self-awareness, exploration of the work world and preparation for entry into a given career. (Normally offered both semesters)

1110. Introduction to Academic Writing Skills. 3. Designed to introduce non-native speakers of English, who do not demonstrate the required competency in writing to enter AS 1210, to academic writing skills. Includes instruction in grammar and sentence structure, paragraph and essay writing. *Prerequisites*: TOEFL of 18 and lower; IELTS of 5 and lower.

1210 [ENGL 1210]. English Composition for International Students. 3. [WA◀▶(none)] Accommodates students of different cultures and different levels of English proficiency. The course's objective is to equip students with procedural knowledge – a set of routines that can be applied in various academic writing patterns, such as description, process analysis, argumentation and the research essay. *Prerequisite:* AS 1000.

2000 [ENGL 2110]. Study Abroad. 1-18 (Max. 18). Students may register through the University of Wyoming for up to two semesters of academic work abroad with the approval of the academic adviser, head of the major department and coordinator of the Study Abroad Program.

2110. English Oral Skills. 3. Instruction for Novice to advanced Low speakers in refining English pronunciation, stress and intonation, listening comprehension, oral grammar practice and building vocabulary. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

2200. British Life and Culture. 3. [G◀▶(none)] A study of contemporary British institutions and significant aspects of the culture, with a focus on London. Offered for S/U only. *Prerequisite:* participation in London semester.

2400. Lower-Division Internship in _____. 1-12 (Max. 12). Allows students to gain hands-on experience that will help to bridge the gap between the theory of academia and the practicality of the work world. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Planning will involve the internship agency, the student's academic adviser and the associate dean of the college. *Prerequisites:* sophomore standing and the approval of the adviser, head of the major department and an associate dean of A&S. (Offered both semesters)

2490. Special Topics in____. 1-3 (Max. 6). Courses of broad general appeal and an interdepartmental flavor will be offered from time to time under this title. Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. See current class schedule for topics. *Prerequisite:* sophomore standing.

3100. Career Preparation and Transition. 1. Designed to help students in the College of Arts & Sciences better prepare for and achieve success in career planning and job searching. Primary purpose is to help identify possible careers and to prepare for the transition from college to career. *Prerequisites:* junior class standing and completion of WA.

4280. Chaos, Fractals and Complexity. 3. Designed especially for non-science majors. Explores how new sciences of fractals, chaos and complexity are changing ways in which we describe, predict and understand nature and art. Topics include population models, world economy, weather, biological systems, evolution and aesthetic appreciation of art and music. *Prerequisites:* USP Math QA and QB.

4400. Upper-Division Internship in ___. 1-12 (Max. 12). Permits students to contribute in the areas of their expertise and gain hands-on experience that will help to bridge the gap between academia and the real world of work. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Such planning will involve the internship agency, the student's academic adviser and the associate dean of the college. *Prerequisites:* approval of adviser, head of the major department and an associate dean of A&S. (Offered both semesters)

4500. Washington Center Internship. 1-12 (Max. 12). Affiliated with the Washington Center, a private, nonprofit, educational organization which provides comprehensive learning opportunities in the nation's capitol for both undergraduate and graduate students. Includes placement (in congressional offices, executive agencies, judicial institutions, public and special interest groups and community programs), supervision, evaluation, orientation, housing, seminars, counseling, a lecture and debate series, special events and other support services. See associate dean, College of Arts and Sciences, for details, but plan on a six-month lead time. *Prerequisite:* junior standing. (Offered both semesters)

4510. Washington Center Seminar. 3-6 (Max. 6). Taken in conjunction with the Washington Center internship program (A&S 4500). Extension of internship experience via discussion-sized groups, led by faculty who are practitioners functioning in the same contexts of action as the internship. *Prerequisite:* junior standing. (Offered both semesters)

4900. Special Topics in _____. 1-3 (Max. 6). Courses of broad general appeal and an interdepartmental flavor will be offered from time to time under this title. Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. See current class schedule for topics. *Prerequisite:* junior standing. (Offered based on sufficient demand and resources)

4975. Independent Study. 1-3 (Max. 6). Offers the advanced student the opportunity to pursue an individualized topic of interest with the assistance and direction of an instructor. *Prerequisites:* junior/senior standing and consent of instructor.

African American and Diaspora Studies

111 Ross Hall, 766-2481
Director: Tracey Owens Patton
Web site: www.uwyo.edu/AADS

Professor:
JACQUELYN BRIDGEMAN, B.A. Stanford University 1996; J.D. University of Chicago 1999; Professor of Law 2008, 2002.
TRACEY OWENS PATTON, B.A. Colorado State University 1993; M.A. 1996; Ph.D. University of Utah 2000; Professor of Communication and Journalism 2012, 2003.

Associate Professor:
DEBORAH L. MCGRIFF, B.S. University of Nebraska-Lincoln 1976; M.S.W. University of Nebraska-Omaha 1981; Ph.D. University of Wyoming 1999; Associate Professor of Counselor Education 2008, 2002.
CHERYL WELLS, B.A.H. Queens University 1995; M.A. University of South Carolina 1997; Ph.D. 2002. Associate Professor of African American and Diaspora Studies 2014.

Assistant Professors:
ULRICH ADELT, M.A. University of Hamburg, Germany 2000; Ph.D. University of Iowa 2007; Assistant Professor of African American and Diaspora Studies and American Studies 2009.
ERIN FORBES, B.A. Reed College 2002; Ph.D. Princeton University 2009; Assistant Professor of English 2009.
KERRY PIMBLOTT, B.A. Kings College London 2005; Ph.D. University of Illinois at Urbana Champaign 2012; Assistant Professor of African American and Diaspora Studies and History 2014.
MARCUS WATSON, B.S. SUNY Brockport 1995; M.A. Cornell University 2005; Ph.D. 2009; Assistant Professor of Global and Area Studies 2010.

Assistant Academic Professional Lecturer:
MARY L. KELLER, B.A. Williams College 1987; M.A. Syracuse University 1992; Ph.D. 2002.

Lecturers:
LUCAS STRICKER, B.A. University of Wyoming 2005; M.F.A. 2007.

The African American and Diaspora Studies Program, through an interdisciplinary course of study, examines the experiences of African Americans in the Western United States, in the context of Africa and its Diaspora in Europe and the Americas.

African American and Diaspora Studies Minor

African American and Diaspora Studies offers a self-designed undergraduate major or undergraduate minor. The minor in African American and Diaspora Studies requires 21 credit hours; this includes the three-credit hour independent research. Three of those courses or (9) credit hours must include the required core courses, and the remaining courses must be at the 2000 level or higher.

The thematic tracks are recommended as a structural guide, not a requirement, to help students focus their coursework with their major.

Minor Required Courses
AAST 1000 3
AAST/HIST 2360 3
AAST 3130 3

Capstone Courses
AAST 4975 3

Thematic Tracks

History
AAST/HIST 2360 3
AAST 3100 3
AAST 3110 3

Culture & Aesthetics
AAST 2410 3
AAST 2730 3
AAST 3000 3
AAST 3010 3
AAST 3670 3
AAST 4020 3

Politics & Law
AAST 4000 3
AAST 4400 3
AAST 4990 3

Rhetoric & English
AAST 2350 3
AAST 4160 3
AAST 4200 3
ENGL 4450 3

Religion & Philosophy
AAST 2450 3
AAST 4100 3

Media Studies
AAST 4990 3

Additional Courses
AAST 1030 3
AAST 4970 1-12
AAST 4990 3

At present, no program for graduate degrees in African American and Diaspora Studies is offered; however, some courses may be counted at the graduate level.

African American and Diaspora Studies (AAST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Introduction to African American Studies. 3. [D◀▶(none)] Surveys African presence in America. Selected teachings are designed to give the student a concise understanding of the heritage of African people in America.

1030. Social Justice in the 21st Century. 3. [I,D◀▶(none)] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AIST/AMST/WMST/CHST 1030. Enrollment preference will be given to We The People FIG students.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2240. Introduction to African Studies. 3. [WB◀▶COM2] Confront African stereotypes by exploring the continent's complex history and current affairs. These realities will be reached with the help of different disciplinary perspectives, such as economics, political science, and anthropology. Equipped with the basics, students will be primed to tackle more advanced courses on Africa. Cross listed with INST 2240. *Prerequisites*: WA or equivalent.

2350. African American Literature. 3. [WB,D◀▶(none)] Encompasses poetry, fiction, drama and autobiography from the Harlem Renaissance and earlier to present. Cross listed with ENGL 2350. *Prerequisite:* WA.

2360. African American History. 3. [CH,D◀▶COM2] Surveys African-American history in America, particularly emphasizing issues of identity, class, and progress as well as exploring African-Americans' quest for full participation in American life. Cross listed with HIST 2360.

2410. Survey of Afro-Caribbean Cultures. 3. Examines the diverse cultural dimensions of the Caribbean (e.g., music, language, religion, politics, and lifestyles) in relation to its historical retentions in West Africa. Critical study of pre and post colonialism and its affects on contemporary Caribbean society is a

major emphasis. These critical paradigms also include the study of Afro-Caribbean populations in America.

2450. Traditional African Religion. 3. [CH,G◀▶COM2] Surveys traditional religions of Africa, both ancient and contemporary. Cross listed with RELI 2450.

2730. African Creativity and Ritual. 3. [CA,G◀▶(none)] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with ART/ANTH 2730.

3000. African American Studies in Music. 3. [(none)◀▶H] Surveys African American music from its origins in Africa to current, popular jazz, rock, soul and rap forms. *Prerequisite:* AAST 1000 or any AAST 2000-level course.

3010. The African American Aesthetic. 3. Examines interrelationship of the creative process with cultural and philosophical motifs, as well as the spiritual and the artistic amongst African people on the continent and Diaspora. *Prerequisite:* AAST 1000 or any AAST 2000-level course.

3100. The African American Experience before 1865. 3. Lecture, discussion, and writing on the experience of African Americans in the United States. Begins with the northern migration of Afro-Mexicans, in the 17th Century, CE; ends with the Civil War and the emancipation of the slaves. *Prerequisite*: AAST 1000 or 3 hours in history; and WA.

3110. The African American Experience After 1865. 3. Experience of African Americans in the United States. Begins with emancipation of slaves and traces the evolution of "black" culture and identity; construction and destruction of racial segregation, the continuing struggle for freedom. *Prerequisite:* AAST 1000 or 3 hours in history.

3130. Global Impact of African Cultures. 3. Examines concepts of culture and value systems as applied to Africa and African-derived cultures and the impact on civilizations around the globe. Using the lens of the Diaspora, this course examines aspects of African culture on the African continent along with the traditions, experiences, socialization, and histories that continue for dispersed peoples of African descent. *Prerequisite:* AAST 1000 or any AAST 2000-level course.

3260. African Spirits in the New World. 3. [CH,G◀▶(none)] Begins with Yoruba roots in Africa travels with the African Diaspora focusing on spirit possession in Haitian Vodou, Cuban Santeria, Jamaican Revival Zion, Jamaican Rastafarianism, Brazilian Candomblé, and "Black Church" in the United States using ethnography and postcolonial theory of religious studies. Cross listed with RELI 3260. *Prerequisites:* AAST 1000 or any AAST 2000 level course or RELI 1000.

3670. African Diaspora. 3. [CS,G◀▶(none)] Examines process through which aspects of African culture have endured in Diaspora. Analyzes social relations between Diaspora Africans and non-African populations in N. and S. America, the Caribbean, Britain, Asia and the Mediterranean. Discusses cultural hybridization as a product of culture contact. Cross listed with HIST 3670. *Prerequisite:* AAST 1000, any AAST 2000-level course, or AAST/HIST 2360.

4000. Black Freedom Movement, 1955-Present. 3. [CH,D◀▶(none)] Presents the struggle of African Americans for self-definition, self-development, and self-determination from the inception of the modern civil rights movements to the contemporary period. Prerequisite: 3 hours of AAST courses.

4020. The Black West. 3. [CH,D◀▶(none)] This course explores the historical experiences and contributions of people of African descent to the American West from their earliest recorded presence in the 16th Century through the present. Cross listed with HIST 4020. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior/senior standing, or three hours of any level of HIST course.

4050. Development, Africa, and Culture. 3. Focuses on the complex and checkered relationships between Western-inspired development and African cultures. Striking a balance among ethnographic case studies, theoretical lenses, and practical implications, understand what Euro-American efforts at foreign development, including contemporary globalization, look like from an African perspective. Provides an understanding of African expectations of development and developers. Dual listed with AAST 5050; cross listed with INST 4050. *Prerequisites:* junior standing and instructor consultation.

4060. NGOs, Development, and Culture. 3. Non-governmental organizations (NGOs) have grown exponentially in number and are often viewed as the new and best vehicle for international development. Focuses on international non-governmental organizations (INGOs), in contexts of Western aid to postcolonial societies and the role they play in the international aid system. Understand INGOs from historical, global, and cultural perspectives. Dual listed with AAST 5060; cross listed with INST 4060. *Prerequisites:* junior standing and instructor consultation.

4100. African American Religious Culture. 3. [WC,D◀▶(none)] Mid-level writing-intensive seminar. Comparative study of African American religious celebration, primarily in the context of Afro-Christianity, but touching on Islam, Candomble, "Voodoo," Santeria, and Rastafarianism. Cross listed with RELI 4100. *Prerequisite:* WB and one of the following: AAST 1000 or any AAST 2000-level course or RELI 1000.

4160. African American Rhetoric. 3. [CH,D◀▶COM3] African American discourse and its relationship to equality and participation. Through examination of various media, music, speeches, and art this course uses the struggle of African Americans as an instructive exemplar, to come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Dual listed with AAST 5160; cross listed with COJO 4160. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

4190. Dimensions of Racism. 3. Explores the effects of racism on African people in America using an African centered framework. We will look at the ways racism intersects with sexism, classism, and heterosexism/homophobia within the African community both in America and throughout the Diaspora. Dual listed with AAST 5190; cross listed with COJO 4190. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

4233. Race, Gender, Ethnicity in the Media. 3. [WC,D◀▶COM3] Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with COJO 4233 and WMST 4233; dual-listed with AAST 5233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

4250 [4200]. The Harlem Renaissance. 3. [D◀▶(none)] Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. This movement had a tremendous impact on African American culture in and outside of

the U.S., including Africa and the Caribbean. Dual listed with AMST 5250; cross listed with AMST 4200. *Prerequisites:* AAST 1000, AMST 2010, AMST 2110, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level AMST course.

4260. [4985] Rhetoric and Social Justice. 3. [D◆▸COM3] Analyzes concepts of ableism, anti-Semitism, heterosexism, racism, sexism, and socioeconomic class through a critical/social construction framework. It attempts to develop a "working" definition of these concepts by analyzing historical and current conceptualizations and identifying marginalization and disenfranchisement as it is woven in the fabric of American society. Dual listed with AAST 5260; cross listed with COJO 4260. *Prerequisites:* Minimum of 9 credit hours in AAST or COJO and junior standing. (Offered spring semester of even-numbered years)

4400. Black Politics, 1867 to the Present. 3. African American participation in partisan electoral politics in the United States from Reconstruction to the current presidential election. Cross listed with POLS 4400. *Prerequisites:* AAST 1000, any AAST 2000-level course, or POLS 1000 and junior/senior standing.

4450. African American Novel. 3. Considers aesthetic dimension and cultural matrix of novels written by Black Americans. Cross list with ENGL 4450. *Prerequisites:* AAST 1000, any AAST 2000 level course, junior/senior standing, six hours of 2000-level literature courses in ENGL.

4455. Literature of Enslavement. 3-4 (Max. 4). [D◆▸(none)] Students engage in an in-depth study of the literary voices that emerged from the history of enslavement in the Americas from colonial times through the end of Reconstruction in 1877. Dual listed with AAST 5455; cross listed with ENGL 4455. *Prerequisites:* AAST 1000, any AAST 2000-level course, and junior/senior standing, or six credit hours of literature courses in ENGL.

4675. U.S. Women of Color. 3. [D◆▸(none)] Examines in comparative perspective the social conditions that shape the experiences of Chicanas/Latinas in the U.S. Students gain an understanding of how the intersection of race, class, gender, and sexuality shape the lived experiences of U.S. women of color through ideological, economic, and political forces. Cross listed with CHST/WMST 4675. *Prerequisite:* junior standing and/or a combination of 3-6 hours of any level of CHST, WMST, or AAST coursework.

4970. Internship in AAST. 1-12. Designed for students to utilize the knowledge and skills obtained in their program of study to be applied at an organization or institution. Students will provide a job description, sign an internship contract, keep daily work journals, provide work samples, submit a paper, and include a final evaluation by their Internship supervisor. *Prerequisite:* 9 hours in AAST courses.

4975. Independent Research. 1-3 (Max. 6). Independent study in African American Studies. *Prerequisites:* AAST 1000 and consent of instructor.

4990. Topics:_____. 3 (Max. 12). In-depth study of a topic not offered as regular course. *Prerequisite:* AAST 1000.

5050. Development, Africa, and Culture. 3. Focuses on the complex and checkered relationships between Western-inspired development and African cultures. Striking a balance among ethnographic case studies, theoretical lenses, and practical implications, understand what Euro-American efforts at foreign development, including contemporary globalization, look like from an African perspective. Provides an understanding of African expectations of development and developers. Dual listed with AAST 4050; cross listed with INST 5050. *Prerequisites:* junior standing and instructor consultation.

5060. NGOs, Development, and Culture. 3. Non-governmental organizations (NGOs) have grown exponentially in number and are often viewed as the new and best vehicle for international development. Focuses on international non-governmental organizations (INGOs), in contexts of Western aid to post-colonial societies and the role they play in the international aid system. Understand INGOs from historical, global, and cultural perspectives. Dual listed with AAST 4060; cross listed with INST 5060. *Prerequisites:* junior standing and instructor consultation.

5160. African American Rhetoric. 3. African American discourse and its relationship to equality and participation. Through examination of various media, music, speeches, and art this course uses the struggle of African Americans as an instructive exemplar, to come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Dual listed with AAST 4160; cross listed with COJO 5160. *Prerequisite:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

5190. Dimensions of Racism. 3. Explores the effects of racism on African people in America using an African centered framework. We will look at the ways racism intersects with sexism, classism, and heterosexism/homophobia within the African community both in America and throughout the Diaspora. Dual listed with AAST 4190; cross listed with COJO 5190. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

5250. The Harlem Renaissance. 3. Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. This movement had a tremendous impact on African American culture in and outside of the U.S., including Africa and the Caribbean. Dual listed with AMST 4250; cross listed with AMST 4200. *Prerequisites:* AAST 1000, AMST 2010, AMST 2110, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level AMST course.

5233. Race, Gender, Ethnicity in the Media. 3. Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with COJO 5233 and WMST 5233; dual-listed with AAST 4233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

5260. [5985] Rhetoric and Social Justice. 3. Analyzes concepts of ableism, anti-Semitism, heterosexism, racism, sexism, and socioeconomic class through a critical/social construction framework. It attempts to develop a "working" definition of these concepts by analyzing historical and current conceptualizations and identifying marginalization and disenfranchisement as it is woven in the fabric of American society. Dual listed with AAST 4260; cross listed with COJO 5260. *Prerequisites:* graduate standing. (Offered spring semester of even-numbered years)

5455. Literature of Enslavement. 3-4 (Max. 4). Students engage in an in-depth study of the literary voices that emerged from the history of enslavement in the Americas from colonial times through the end of Reconstruction in 1877. Dual listed with AAST 4455; cross listed with ENGL 5455. *Prerequisites:* AAST 1000, any AAST 2000-level course, and junior/senior standing, or six credit hours of literature courses in ENGL.

5560. Black Popular Culture. 3. Approaches African American popular culture from theoretical perspectives which include black feminist, postcolonial, and poststructuralist analyses. Cross listed with AMST 5560. *Prerequisites:* graduate standing; instructor consent for undergraduate students.

American Indian Studies

115 Ross Hall, 766-6521
Web site: www.uwyo.edu/aist
Director: Christopher Caskey Russell

Adjunct Faculty:
(See Catalog section following name for academic credentials.)

William Gribb, geography
Michael Harkin, anthropology
Pamela Innes, anthropology
Angela Jaime, educational studies
Jeffrey Means, history
Christopher Caskey Russell, English

Emeriti Faculty:
Judith A. Antell

The American Indian Studies Program offers an academic major at the undergraduate level and a minor at both the undergraduate and graduate level. This interdepartmental course of study examines Native North American cultural and social life, including economic, political, and educational systems. Historical and contemporary perspectives of American Indian experiences are included in this program.

Students may choose an American Indian studies minor to complement a major field of study. Related disciplines include American studies, anthropology, art, ethnic studies, geography, history, law, music, philosophy, political science, and sociology. A minor in American Indian studies provides excellent preparation for teachers, researchers, social workers, health care providers, resource managers, economic developers, and legal practitioners.

AIST Undergraduate Minor

Students graduating with an undergraduate minor degree in American Indian studies will be able to: 1) Explain the concept of tribal sovereignty and how tribal sovereignty is both restricted and acknowledged by the federal trust relationship and by relationships with states; 2) Understand the development of modern tribal governments and their functions and importance in contemporary society; 3) Understand and appreciate the roles of history, culture, and politics in the development of tribal world views, world views that relate to modern life and contemporary issues of concern for Native American peoples; 4) Identify historical, cultural, and political diversity and significance in Native oral traditions and written literatures; 5) Recognize stereotypes about Native American peoples and explain why these stereotypes were created and why they are sustained in modern society, and; 6) Understand from the perspective of American Indian peoples, historical experiences and contemporary issues in North America.

AIST Undergraduate Major

In addition to the skills acquired by students who earn an undergraduate minor degree in American Indian studies, students working toward a B.A. in American Indian Studies will study tribal governance, literature, history, environment and natural resource management, ways of knowing, and indigenous languages. Inherent in this degree's curriculum and related activities is the expectation that students and faculty will assume an active role in working with and for Indigenous communities. AIST requires it majors to earn a grade of C or better in all courses taken to fulfill the major.

AIST Graduate Minor

A graduate minor in American Indian studies is comprised of 12 hours with at least 6 hours at the 5000 level. It is expected that each graduate minor student and his/her graduate committee, at least one member of whom will be from American Indian studies, will determine the specific courses to be taken. It is recommended that one of the four classes selected be a 3 credit AIST 5000 Independent Study. This class will provide a research experience in the discipline of American Indian studies that may support a master's thesis or doctoral dissertation. The research expectation in AIST can be satisfied by the 3 credit hour Independent Study and/or by the thesis or doctoral dissertation.

Students graduating with a graduate minor degree in American Indian studies will be able to: 1) Make apparent in masters'-level research the interdisciplinary connections between American Indian studies and the primary field of graduate study; 2) Integrate American Indian studies research methods with the research methods used in the primary field of graduate study; and 3) Demonstrate in writing the ability to understand a variety of subjects from a tribal perspective.

Teaching Certification

Through the Outreach School, a Teachers of American Indian Children (TAIC) Endorsement / Graduate Certificate can be earned. This non-degree graduate program certifies that those who complete its five specialized courses possess the attitudes, knowledge, and competence necessary to effectively teach American Indian Children. Upon completion, students receive official recognition of their achievement on their transcripts and an official certificate. Visit the Outreach Credit Program Website http://outreach.uwyo.edu/ocp/ for more information. All courses are cross-listed with AIST.

An interdepartmental American Indian Studies Advisery Committee guides the program's development. The director advises students selecting the American Indian studies major or minor.

Complete information about the American Indian studies undergraduate major, undergraduate minor, and graduate minor is available in the American Indian Studies Program office and on the program Website.

American Indian Studies (AIST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1001. Foundations in American Indian Studies. 3. [CS,D◀▶(none)] Explains the development of American Indian studies and will show how a variety of disciplines continue to inform this field and interact to facilitate the exploration of its major topics of concern, including Native histories, cultures, and contemporary lives.

1010. Beginning Indigenous Language. 4. Fundamentals of grammar, conversation, composition, and reading. Satisfactory/unsatisfactory only.

1030. Social Justice in the 21st Century. 3. [I,D◀▶(none)] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AAST/AMST/WMST/CHST 1030. Enrollment preference will be given to "We The People" FIG students.

1350. American Indians in Contemporary Society. 3. [CS,D◀▶(none)] Examines social and cultural issues and concerns of American Indians both on and off the reservations. Additionally, the status of American Indian people within the dominant society and culture will be explored. Cross listed with SOC 1350.

2010. Intermediate Indigenous Language. 4. Second level fundamentals of grammar, conversation, composition, and reading. Satisfactory/unsatisfactory only. *Prerequisites:* AIST 1010.

2060. Topics. 1-4 (Max. 6). Popular and current topics in American Indian studies.

2210. North American Indians. 3. [CS, D◀▶(none)] Comparative consideration of North American Indian culture areas at European contact period. Cross listed with ANTH 2210.

2290. History of North American Indians. 3. [CH,D◀▶(none)] Studies American Indian history through 500 years and across the continent. Considers Indian political, social, and economic continuity and change. Focuses on how Indian peoples experienced and responded to times of dramatic change. Cross listed with HIST 2290.

2340. Native American Culture and Literature. 3. [CH,D◀▶(none)] Broad cultural study of Native Americans, past and present. Emphasizes folklore and literature. Cross listed with ENGL 2340. *Prerequisite:* WA course.

2345. American Indians in Hollywood Film. 3. [CH,D◀▶(none)] Examines the ways Hollywood films have constructed various forms of racial identity for American Indians. Cross listed with ENGL 2345. *Prerequisite:* WA.

3000. Plains Culture and History. 3. [D◀▶(none)] An ethnohistorical study of those Native peoples inhabiting the Plains region of the U.S. from prehistory to the present. Cross listed with HIST 3000. *Prerequisite:* 3 hours of AIST courses.

3010. Proficient Indigenous Language. 4. Emphasizes the development of listening, speaking, reading, and writing so as to help students function effectively in the tribal cultural context of which the language is a part. Satisfactory/unsatisfactory only. *Prerequisite:* AIST 2010.

3100. Tribal Literatures of the Great Plains. 3. [WC,D◀▶(none)] Familiarizes students with American Indian literatures of the Great Plains. The Great Plains region is the locus of much historical and contemporary significance in regard to American Indian cultures. The literature of Great Plains Indians allows students to confront and reexamine the national narratives surrounding American Indians. Cross listed with ENGL 3100. Prerequisite: 6 hours of AIST or ENGL.

3200. Indigenous Peoples and the Environment. 3. Understand the historical, political, and socio-economic forces that have shaped the relationships of Indigenous peoples to their environments, and be able to discern the similarities and dissimilarities of Indigenous issues across international borders. The course may include a study abroad component. *Prerequisites:* 6 hours AIST credit.

3300. Federal Indian Law. 3. Survey of law that applies to individual Indians and tribal governments. In particular, explores the legal relationships among, and relative jurisdictions of federal, tribal, and state governments. Specific topics include civil and criminal jurisdiction, taxation, family law, hunting and fishing, and gaming regulations. *Prerequisite:* AIST 1001 or 1350.

3400. Traditional Ecological Knowledge. 3. [CS,D◀▶(none)] Description of the interaction between economy, religion, language and the ecosystem for select Indigenous peoples and discussion of the pedagogical methods for preserving their ecological knowledge. An examination of the conflict between contemporary society's demands and preserving traditional society's heritage. Cross listed with GEOG 3400. *Prerequisite:* one course in American Indian culture.

4000. Indians of Wyoming. 3. [D◀▶(none)] Examines Native American culture in Wyoming from pre-history to the 21st century. Analyzes social, political, and economic developments of Native peoples of Wyoming before, during, and after contact with Europeans. Discusses interaction between these diverse societies and explores the changing relationships between Indians and Euro-Americans through the periods after contact. Cross listed with HIST 4000. *Prerequisite:* 6 hours of HIST or 6 hours of AIST.

4010. Advanced Indigenous Language. 4. Stresses the usage of language through composition, conversation, oral presentation, and grammar review. Satisfactory/unsatisfactory only. *Prerequisites:* AIST 3010.

4020. Internship. 1-12 (Max. 12). Requires active participation and service to an Indigenous community or organization in US or elsewhere. A written agreement among the student, the AIST director or AIST faculty mentor, and an on-site supervisor is required. AIST Majors must take at least four credit hours. *Prerequisite:* 9 hours of AIST courses.

4100. Tribal Government. 3. Examines traditional systems of tribal governance; the establishment of contemporary tribal governments; stakeholders and their goals; factors influencing tribal government operations, including the federal trust relationship, plenary power, tribal federal and tribal-state relations; powers of tribal governments; and the future of tribal governments. *Prerequisite:* 6 hours of AIST courses, including AIST 1001, and/or AIST 1350.

4110. Educational Foundations in American Indian Education. 3. [D◀▶(none)] Examines cultural, geographical, linguistic, spiritual, political, and societal factors before, during, and after colonization of the Americas. Definitions and day-to-day realities of terms like ethnocentrism, cultural relativism, assimilation, acculturation, and institutional racism. Development of insights into positive teacher-pupil-community relationships that honor culture and language differences and enhance achievement. Dual listed with AIST 5110; cross listed with EDCI 4110. *Prerequisite:* AIST 1001 and 15 credit hours of AIST or EDST.

4200. Indigenous Communities Abroad: International Travel. 4. Devoted to study/travel related to Indigenous peoples abroad. The specific topic will be determined each time the class is offered. Two weeks of international travel will follow sixteen hours of on-campus instruction. *Prerequisites:* 6 credits in AIST.

4340. Natural Resource Management on Western Reservations. 3. Examines natural resource management techniques on western reservations. Focus is on the management and planning of water, grazing, extractive industries, and forestry. Fieldwork on the Wind River Indian Reservation is included. Cross listed with GEOG 4340. *Prerequisite:* 6 hours of 2000-level AIST courses.

4360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. Complexity and diversity of Indian women's experiences throughout history are emphasized. Concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Dual listed with AIST 5360; cross listed with WMST/SOC 4360. *Prerequisite:* 6 hours of 2000-level AIST courses.

4460. American Indian Literature. 3. [WC◀▶(none)] Advanced critical study of the history of American Indian literature, emphasizing the authors' views of social change. Cross listed with ENGL 4460. *Prerequisite:* 6 hours of 2000-level literature courses.

4462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the vari-

ous contacts between American Indians and Europeans and considers what the American Revolution meant to the continent's Native peoples. Dual listed with AIST 5462; cross listed with HIST 4462. *Prerequisite:* HIST/AIST 2290.

4463. American Indian History 1783-1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement and also the manifold changes that accompanied Indians moving west. Dual listed with AIST 5463; cross listed with HIST 4463. *Prerequisite:* HIST/AIST 2290.

4464. American Indians in the Twentieth Century. 3. Surveys the history of American Indians during the 20th century. Examines the development of new cultural, social, and political forms that help create an American Indian identity. Dual listed with AIST 5464; cross listed with HIST 4464. *Prerequisite:* HIST/AIST 2290.

4466. American Indian Ethnohistory. 3. Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Dual listed with AIST 5466; cross listed with HIST 4466. *Prerequisite:* ANTH/AIST 2210 or HIST/AIST 2290.

4468. American Indians in the North American West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, the history of American Indians in the West is examined, with particular emphasis on the Great Plains and California. Dual listed with AIST 5468; cross listed with HIST 4468. *Prerequisite:* HIST/AIST 2290.

4492. Indian Cultures of Latin America, 15C-Present. 3. [CS,G◀▶(none)] An ethnohistorical overview of Mesoamerican and Andean Indian cultures from the 15th century to the present. Focuses on Native American responses to colonialism, capitalism, nationalism, and globalization. Recent developments, e.g., the new Indian rights movement and the Chiapas rebellion in Mexico. Cross listed with HIST 4492. *Prerequisite:* 3 hours of relevant course work in HIST (e.g., 2290, 2380, 4495, 4496) or AIST (e.g., 2210, 2290, 4100, 4465) or ANTH (e.g., 2210).

4525. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans, and Anglo Americans from the 15th century to the present. Cross listed with CHST/HIST 4525. *Prerequisite:* HIST 1210/1211, HIST 1220/1221. (Normally offered spring semester)

4546. Agriculture: Rooted in Diversity. 3. [C,D◀▶(none)] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/CHST/ENGL/FCSC/AMST/HIST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4740. Native American Languages and Cultures. 3. Demonstrates the interrelationship of language and culture in several Native American communities. Examines anthropological and linguistic theories regarding language spread and the peopling of North America, narrative performance, translation, and the connection between linguistic structures and cultural features. Cross listed with ANTH 4740. *Prerequisite:* ANTH 4760.

4975. Independent Study. 1-4 (Max. 8). Directed, independent study in American Indian issues with American Indian Studies affiliated faculty. Students must initiate a project with an appropriate faculty member and have it approved by the program director. Prerequisite: consent of instructor and 6 hours of AIST.

4990. Special Topics. 1-4 (Max. 9). Current research topics presented by regular and visiting faculty. *Prerequisite:* 3 hours of AIST courses.

5000. Independent Study. 1-4 (Max. 4). Conference course to permit students opportunity for directed and independent study in American Indian issues. *Prerequisite:* graduate standing and consent of instructor.

5110. Foundations of American Indian Education. 3. Examines cultural, geographical, linguistic, spiritual, political, and societal factors before, during, and after colonization of the Americas. Definitions and day-to-day realities of terms like ethnocentrism, cultural relativism, assimilation, acculturation, and institutional racism. Development of insights into positive teacher-pupil-community relationships that honor culture and language differences and enhance achievement. Dual listed with AIST 4110; cross listed with EDCI 5110. *Prerequisite:* AIST 1001 and 15 credit hours of AIST or EDST.

5121. History and Philosophy of American Indian Education. 3. Addresses the history of Indian education in the U.S. and Canada and examines missionary initiatives, government programs, and tribal efforts. Review of documentary accounts of Native education, review autobiographical accounts of Native teachers and children. Develop insight necessary for development of appropriate teaching methods and materials. Cross listed with EDCI 5121. *Prerequisite:* post-Baccalaureate status.

5130. Cultural Foundations of American Indian Education. 3. In-depth study and analysis of the educational experiences of American Indians, focusing on contemporary educational issues and experiences, examining the impacts of cultural orientations, stereotypes, bias, and other issues on the educational attainment of American Indian students. Critique instructional practices and programs developed addressing the needs of American Indian students. Cross Listed with EDCI 5130. *Prerequisite:* post-Baccalaureate status.

5141. Instructional Methods of American Indian Education. 3. Addresses culturally responsive methodologies for teaching American Indian students, reviews documentary accounts of Native education and autobiographical accounts of Native teachers and children, develops appreciation of the complexity and difficulties of Native education. Insight necessary for development of appropriate teaching methods and materials. Cross listed with EDCI 5141. *Prerequisite:* post-Baccalaureate status.

5360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. The complexity and diversity of Indian women's experiences throughout history are emphasized. Concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Dual listed with AIST 4360; cross-listed with WMST/SOC 5360. *Prerequisite:* 6 hours of 2000-level AIST courses.

5462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the various contacts between American Indians and Europeans and considers what the American Revolution meant to the continent's Native peoples. Dual listed with AIST 4462; cross listed with HIST 5462. *Prerequisite:* HIST/AIST 2290.

5463. American Indian History to 1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement

and also the manifold changes that accompanied Indians moving west. Dual listed with AIST 4463; cross listed with HIST 5463. *Prerequisite:* HIST/AIST 2290.

5464. American Indian History in the 20th Century. 3. Surveys the history of American Indians during the 20th century. Examines the development of new cultural, social, and political forms that help create an American Indian identity. Dual listed with AIST 4464; cross listed with HIST 5464. *Prerequisites:* HIST/AIST 2290.

5466. American Indian Ethnohistory. 3. Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Dual listed with AIST 4466; cross listed with HIST 5466. *Prerequisite:* ANTH/AIST 2210 or HIST/AIST 2290.

5468. American Indians in the West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, the history of American Indians in the West is examined, with particular emphasis on the Great Plains and California. Dual listed with AIST 4468; cross listed with HIST 5468. *Prerequisites:* HIST/AIST 2290.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes.

American Studies

Cooper House, 766-3898
FAX: (307) 766-3700
Web site: www.uwyo.edu/ams
Director: Frieda E. Knobloch

Professors:

JOHN D. DORST, B.A. Oberlin College 1974; M.A. University of California-Berkeley 1977; Ph.D. University of Pennsylvania 1983; Professor of American Studies 1996, 1989.

FRIEDA E. KNOBLOCH, B.A. Cornell University 1985; Ph.D. University of Minnesota 1994; Professor of American Studies 2014, 1997.

ERIC J. SANDEEN, B.A. University of Notre Dame 1970; M.A. University of Iowa 1976; Ph.D. 1977; Director of American Studies 1982; Professor of American Studies 1994, 1982.

Associate Professor:

BETH LOFFREDA, B.A. University of Virginia; M.A. Rutgers University; Ph.D. 1997; Associate Professor of American Studies 2014, 1998.

Assistant Professors:

ULRICH ADELT, Magister Artium, University of Hamburg 2000; M.A. University of Iowa 2005; Ph.D. 2008; Assistant Professor of American Studies and African American and Diaspora Studies 2009, 2012.

LILIA SOTO, B.A. University of California-San Diego 2000; M.A. University of California-Berkeley 2003; Ph.D. 2008; Assistant Professor of American Studies and Latina/o Studies 2010, 2012.

Academic Professional Research Scientist

Andrea Graham

Adjunct Faculty:

(See Catalog section following name for academic credentials)

Catherine Connolly, Gender and Women's Studies
R. McGreggor Cawley, Political Science
Colleen Denney, Art
William J. Gribb, Geography
Michael Harkin, Anthropology
Jeanne Holland, English
Philip J. Roberts, History
David Romtvedt, English
Audrey Shalinsky, Anthropology

The interdisciplinary major in American studies emphasizes the integration of the humanities, fine arts and social sciences in the study of American experience, past and present. The program places special emphasis on interaction with contemporary American culture through course work, field experiences and internships so that each student can apply academic knowledge to real life circumstances. Many students choose among literature, history, geography or anthropology for their distributed course requirements, but major areas of course work may include political science, mass media, the fine arts, sociology, philosophy, or environment and natural resources. With the help of an American Studies program adviser, each student plans an individualized course of study emphasizing as academic interest, a career goal and/or preparation for further education in law or graduate school. Although the focus of the program is broad, many students choose to emphasize nature and culture in the U.S., American cultural diversity, or preparation for a career in the public sector (museums, historic sites, interpretive center, etc.).

Undergraduate Major

The interdisciplinary major in American Studies emphasizes the integration of the humanities, fine arts, and social sciences in the study of American experience, past and present. Through its **core** of American Studies courses, the program places special emphasis on interaction with contemporary American culture through course work, field experiences, and internships so that each student can apply academic knowledge to real life circumstances. With the help of an American Studies adviser, students can choose courses in almost all disciplines and fields in the College of Arts and Sciences - most typically, literature, history, geography, anthropology, sociology, art history, women's studies, political science, African American studies, American Indian studies, Latina/o studies, or environment and natural resources - for their **theme** requirements. The individualized course of study proposed by each student should emphasize an academic interest, a career goal, and/or preparation for further education in law school or a graduate program. Although the focus of the program is broad, many students choose to emphasize environmental studies, American cultural diversity, secondary level teaching, or preparation for a career in the public sector (museums, historic sites, interpretive centers, etc.).

Through the following curriculum, students develop individual programs of study, with their advisers, to understand and engage American cultures.

1. Foundation (12 credits):
   AMST 2010 and AMST 2110
   Two of the following: AAST 1000, AIST 1350, CHST 1100, ENR 2000, (either HIST 1210 or HIST 1220), RELI 1000, or WMST 1080.
2. Concentration (27 credits)

Core. Each student must take three AMST courses at the 3000-4000 level, excluding the senior seminar. These seminars are designed to maintain an interdisciplinary view of American culture and to foster an American Studies community (9 credits).

Theme. An American Studies theme is devised, in consultation with the student's adviser, and is presented to the American Studies core faculty in writing as a proposed course of study. This proposal is usually made at the end of the second year of study (or upon completion of 60 hours of course work toward graduation), since the document guides the student through an exploration of American culture. Typical themes include: American diversity, environment and society, material

culture and everyday life, visual culture and media, American cultural history, American institutions and public culture, the United States in international perspective. The theme must include a minimum of 6 credits and a maximum of 9 credits in a single discipline. Up to 3 credits can be granted for courses at the 1000-2000 level (18 credits).

3. Capstone (6 credits):
   Senior seminar plus an individual project stemming from either AMST 4010 (independent study) or AMST 4970 (internship).

Students pursuing Program honors should also write an undergraduate thesis.

Internships

The internship experience is essential for students specializing in public sector American studies. The program has an active program of paid internships that can place students in work environments in Wyoming, other parts of the U.S., or in selected foreign countries.

Exchanges

The program has established semester or academic year exchanges with universities in Great Britain, the Netherlands, Denmark and New Zealand in order to encourage an international understanding of American culture. The Elaine Kay Clatterbuck Fund supports majors who are spending this valuable time abroad.

Financial Aid

The William Robertson Coe Fellowship supports undergraduate tuition. The Long-Findeisen Fund supports individual research or exhibition projects. The Elaine K. Clatterbuck Fellowship assists students engaged in an international exchange. The internship program provides students with a stipend while engaged in a program-approved internship.

Teacher Education

Teacher certification in elementary or secondary (social studies) is available by arrangement with the College of Education. Students will be assigned an adviser from the College of Education, as well as from American Studies.

Certificate

The certificate program allows students to choose from undergraduate and graduate courses in American Studies, literature, geography, music, art, history, philosophy, sociology, folklore, anthropology, American Indian studies, political science, environmental studies, and media studies. The program encompasses two semesters of full time work: a total of at least 24 semester hours, or approximately 8 courses. Of these, 6 hours (2 courses) must be selected from the following list:

AMST 2010 **or** 2110 3
and
AMST 4300, 5550 **or** 4020.....3

An additional 18 hours (6 courses) are chosen in consultation with an American Studies faculty adviser. The final 3 credit hours, completed during the summer months, are devoted to an internship (AMST 4385) or field experience in American culture (AMST 4990).

Undergraduate Minor

Students may minor in American Studies through a program of 24 credits of study, some which may be matched with major requirements in related disciplines and fields. For details, see the list of eligible courses at www.. uwyo.edu/ams.

Graduate Study

The program offers an interdisciplinary course of study leading to the master of arts degree. The program also supports a historic preservation concentration that involves studio courses and field experience. Other specific paths through the American Studies curriculum are tailored to the needs of the students. Semester exchange programs reinforce an international perspective on American culture.

Program Specific Admission Requirements

A significant writing sample (usually a seminar paper or, for those coming from technical fields, a major report) that demonstrates potential for graduate study.

Program Specific Degree Requirements

Degree requirements based on university minimum requirements. Successful completion of the following: AMST 5500/5510 with a grade of "B" or better, three additional American Studies courses and a Thesis or Plan B (non-Thesis) project.

American Studies (AMST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Cultures Of College: Why We Are Where We Are. 3. Introduces students to backgrounds, environments, assumptions that shape our experience of higher education. Two objectives: to familiarize first-year students with college experience through inquiry into meanings of campus, and to familiarize students with interdisciplinary study.

1030. Social Justice in the 21st Century. 3. [I,D◀▶(none)] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AAST/AIST/WMST/CHST 1030. Enrollment preference will be given to We The People FIG students.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2010. Introduction to American Studies. 3. [CH,WB◀▶H] Introduces the interdisciplinary study of American culture. Focuses on themes, values and ideas which continue to reverberate through our cultural experience. (Offered at least once each year)

2110. Cultural Diversity in America. 3. [CS,D◀▶H] Studies processes by which individuals and groups produce, maintain and express cultural identities in the U.S. Race, gender and ethnicity are addressed, emphasizing historical roots and social context of contemporary cultural varieties. (Offered one semester each year)

2400. Introduction to Historic Preservation. 3. Online course introduces students to historic preservation theory and philosophy, the history of the preservation movement and contemporary historic preservation as practiced in the public, nonprofit and private realms. Assignments include reading, research, online discussion and lectures (podcasts, videos or PowerPoint presentations), as well as directed field work.

2700. Introduction to Museology. 3. [CH◀▶(none)] Explores the historical, cultural, and contemporary roles of museums and preservation institutions in society. Introduces students to the museum professions, collection and exhibition installation strategies, and ethical problems of governance and collection. Field trips to regional collections are included. Cross listed with ART/ANTH/HIST 2700. *Prerequisite:* WA.

3050. Cultures of Nature in the United States. 3. Uses artistic, philosophical, historical and literary material to investigate how ideas about and representations of nature have changed over time in the U.S. Culminates in an examination of a wide range of contemporary environmental ideas within this broad historical and cultural context. Cross listed with ENR/WMST 3050. Prerequisite: 2000-level course in one of the following departments: AMST, American history, American literature, or a 2000-level course approved for the ENR program.

3100. Food in American Culture. 3. [C◀▶(none)] An interdisciplinary exploration of food as a medium of cultural expression, social interaction, and aesthetic experience in American life, both past and present. Examines food as, among other things, a symbolic system, a vehicle of social communication, and an arena for the performance of regional ethnic, gender, etc. identities. *Prerequisite:* any 2000-level course in American Studies, or ANTH 1200.

3800. Chicanas/os in Contemporary Society. 3. [CS,D◀▶(none)] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with CHST/WMST 3800. *Prerequisite:s* CHST 1100 or WMST 1080 or AMST 2010.

3400. Popular Music and Sexualities. 3. [CH,D◀▶(none)] Looks at ways in which popular music has intersected with sexual and gendered identities as a means and expression of both oppression and liberation. Cross listed with WMST 3400. *Prerequisite:* WA.

4010. Independent Study. 1-3 (Max. 6). For upper division students in any major who can benefit from independent study in American Studies with minimal supervision. Dual listed with AMST 5010. *Prerequisites:* 3 hours in American Studies and approval of instructor.

4020. American Folklife. 3. Introduces materials and methods of folklife research, examining both verbal and nonverbal expressions of traditional cultures in America. Topics include material culture, belief systems, traditional events and celebrations, and folk performances of many kinds. Dual listed with AMST 5020. *Prerequisite:* Any six hours from among AMST 2010, 2110, ENGL 2400, AIST 2340, AAST 2450 2730, 3000, 3010. (Offered once each year)

4030. Ecology of Knowledge. 3. Examines the development of "disciplines" and explores definitions, theories, methods and practices of interdisciplinary work. Cross listed with ENR 4030. Dual listed with AMST 5030. *Prerequisite:* 3 hours in any interdisciplinary program.

4040. Historic Preservation and Sustainability. 3. Explores the historic preservation and sustainability movements and contemporary practices in these inter-related fields. Through reading, lectures, discussions and site visits, students will study how the historic preservation and the building industry professions can address advanced issues in sustainability related to the environment, culture and economics. Cross listed with ARE 4040. *Prerequisites*: 6 hours in AMST or ARE.

4051. Environmental Politics. 3. [WC◀▶(none)] Analyzes environmentalism as a political phenomenon. Provides a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with POLS, ENR, GEOG and REWM 4051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/ENR/GEOG/REWM 4052. *Prerequisite:* POLS 1000.

4250. The Harlem Renaissance. 3. [D◀▶(none)] Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. This movement had a tremendous impact on African American culture in and outside of the U.S., including Africa and the Caribbean. Dual listed with AMST 5250; cross listed with AAST 4250. *Prerequisites:* AAST 1000, AMST 2010, AMST 2110, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level AMST course.

4300. American Culture and the Public Sector. 3. Surveys American culture studies in the public sector. Topics include history and theory of public sector humanities and social sciences; types of public sector jobs and institutions where public humanists work; and public sector work in specific disciplines, such as history, anthropology, folklore, archaeology and art history. Dual listed with AMST 5300. *Prerequisite:* 12 credits in humanities or social science courses having to do with American culture. (Offered once a year)

4500. American Civilization. 1-8 (Max. 8). Explores various interdisciplinary approaches to the American experience, past and present. May include topical, thematic, historical, literary and cultural integrations; for a given semester, the course's precise focus will be indicated in the class schedule.

4546. Agriculture: Rooted in Diversity. 3. [C,D◀▶(none)] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/CHST/ENGL/FCSC/HIST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4640. Art and Ecology. 3. Focuses on the intersection of contemporary art with ecological concerns. Readings present philosophical, historical and cultural aspects of the art/ecology relationship; students reflect and question their own beliefs. Examples of art/artists are reviewed as well as how ecological artwork is developed. Students propose solutions and/or create art in, out of, or about the environment; local sites are encouraged. *Prerequisite:* 6 hours of ART and/or AMST or consent of the instructor.

4650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with CHST/INST/WMST 4650. Dual listed with AMST 5650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

4800. Historic Preservation. 3. Review of the roots of historic preservation in Western culture with an emphasis on the historical and legal context of architectural conservation in

America. Current issues in preservation are examined through case studies and guest presentations. Cross listed with ENR 4800. Dual listed with AMST 5800. *Prerequisite:* ARE 3020 or AMST 5400.

4900. Field Studies in Historic Preservation. 1-4 (Max. 4). Acquaints students with current issues in historic preservation by visiting places of importance in U.S. and Europe. Agencies and institutions involved in building conservation provide specific expertise at sites visited. *Prerequisite:* 3 hours of architectural history or 6 hours of art history. (Offered based on sufficient demand and resources)

4970. Internship. 1-3 (Max. 6). Gives undergraduate students practical experience by working on a project at a public institution, agency or educational/cultural organization. Offered for S/U only. *Prerequisites:* junior standing, 3.0 GPA, completion of AMST 2010 and 12 hours in major with 3.25 GPA minimum in major and consent of instructor.

4985. Senior Seminar. 3. [WC◀▶(none)] With AMST 4010 or 4970, completes the capstone coursework in AMST. Identifies a broad intellectual tradition in American Studies as foundation for student's research interests; builds a specific scholarly context appropriate to student's research; culminates in a substantial piece of written research appropriate in an identified subfield of American Studies. *Prerequisite:* senior standing in American studies or consent of program director.

5010. Independent Study. 1-6 (Max. 6). For graduate students in any graduate program who can benefit from independent research and writing in American Studies. Dual listed with AMST 4010. *Prerequisites:* 3 hours in American Studies and consent of instructor.

5020. American Follklife. 3. Introduces materials and methods of folklife research, examining both verbal and nonverbal expressions of traditional cultures in America. Topics include material culture, belief systems, traditional events and celebrations, and folk performances of many kinds. Dual listed with AMST 4020. *Prerequisites:* any six hours from among: AMST 2010, ENGL 2400, AIST 2340, AAST 2450, 2730, 3000 or 3010.

5030. Ecology of Knowledge. 3. Examines the development of "disciplines" and explores definitions, theories, methods and practices of interdisciplinary work. Cross listed with ENR 5030. Dual listed with AMST 4030. *Prerequisite:* graduate status.

5200. Material Culture. 3. Designed to introduce advanced students to the theory, methods, and practice of material culture study. A significant portion of the course will be devoted to a studio exercise in which students collectively document and analyze a material culture form that has been designated by the instructors. *Prerequisite:* graduate standing or consent of instructor.

5250. The Harlem Renaissance. 3. Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. This movement had a tremendous impact on African American culture in and outside of the U.S., including Africa and the Caribbean. Dual listed with AMST 4250; cross listed with AAST 5200. *Prerequisites:* AAST 1000, AMST 2010, AMST 2110, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level AMST course.

5300. American Culture and the Public Sector. 3. A survey of American culture studies in the public sector. Topics covered include the history and theory of public sector humanities and social sciences, types of public sector jobs and institutions where public humanists work, and public sector work in specific disciplines such as history, anthropology, folklore, archaeology, and art history. Dual listed with AMST 4300. *Prerequisite:* graduate status.

5400. American Built Environment. 3. Examination of America's built environment from pre-Colonial times to the present day. Factors affecting the architecture and built form of a given period are discussed together with what the material legacy says about the culture of the period. *Prerequisite:* ARE 3020.

5500. Topics in American Studies. 3. Selected problems in the theory, practice, and bibliography of American studies. Required of graduate majors in the program and is recommended for students with an interdisciplinary interest in American Culture. *Prerequisites:* survey knowledge of American literature and history; graduate standing or consent of instructor.

5510. Readings in American Studies. 3. Selected readings in the theory, practice, and bibliography of American Studies. Surveys scholarship in the field and is designed to help graduate students develop thesis topics. *Prerequisites:* graduate standing in American studies or related field; consent of instructor.

5550. Varieties of Literary Evidence. 3. Selected problems in the use of literary evidence for American studies scholarship. *Prerequisites:* graduate standing in American studies or a related field; consent of instructor.

5560. Black Popular Culture. 3. Approaches African American popular culture from theoretical perspectives which include black feminist, postcolonial, and poststructuralist analyses. Cross listed with AAST 5560. *Prerequisites:* graduate standing; instructor consent for undergraduate students.

5650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with CHST/INST/WMST 5650. Dual listed with AMST 4650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

5800. Historic Preservation. 3. Review of the roots of historic preservation in Western culture with an emphasis on the historical and legal context of architectural conservation in America. Current issues in preservation are examined through case studies and guest presentations. Cross listed with ENR 5800. Dual listed with AMST 4800. *Prerequisite:* ARE 3020 or AMST 5400.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisites:* enrolled in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Anthropology

106 Anthropology Building, 766-5136
FAX: (307) 766-2473
Web site: www.uwyo.edu/anthropology
Department Chair: James Ahern

Professors:
JAMES AHERN, B.A. Beloit College 1991; M.A. Northern Illinois University 1993; Ph.D. University of Michigan 1998; Professor of Anthropology 2014, 2000.
MICHAEL E. HARKIN, B.A. University of North Carolina 1980; M.A. University of Chicago 1984; Ph.D. 1988; Professor of Anthropology 2003, 1993.
ROBERT L. KELLY, B.A. Cornell University 1978; M.A. University of New Mexico 1980; Ph.D. University of Michigan 1985; Professor of Anthropology 1997.
MARCEL KORNFELD, B.A. University of New Mexico 1974; M.A. University of Wyoming 1982; Ph.D. University of Massachusetts-Amherst 1994; Professor of Anthropology 2008, 1996.
MARY LOU LARSON, B.A. University of Wyoming 1976; M.A. University of California-Santa Barbara 1982; Ph.D. 1990; Professor of Anthropology 2007, 1996.
LIN A. POYER, B.A. Bucknell University 1975; M.A. University of Michigan 1978; Ph.D. 1983; Professor of Anthropology 2003, 1997.
AUDREY C. SHALINSKY, B.A. University of Chicago 1973; M.A. Harvard University 1975; Ph.D. 1979; Professor of Anthropology 1991, 1980.
SARAH STRAUSS, A.B. Dartmouth College 1984; M.P.H. San Jose State University 1987; Ph.D. University of Pennsylvania 1997; Professor of Anthropology 2014, 1997.

Associate Professors:
PAMELA INNES, B.A. Bryn Mawr College 1986; M.A. University of Oklahoma 1992; Ph.D. 1997; Associate Professor of Anthropology 2007, 2001.
MELISSA MURPHY, B.A. Haverford College 1994; Ph.D. University of Pennsylvania 2004; Associate Professor of Anthropology 2014, 2008.
TODD SUROVELL, B.S. University of Wisconsin-Madison 1995; M.A. University of Arizona 1998; Ph.D. 2003; Associate Professor of Anthropology 2009, 2003.
NICOLE WAGUESPACK, B.A. Colorado State University 1996; M.A. University of Wyoming 1999; Ph.D. University of Arizona 2003; Associate Professor of Anthropology 2009, 2003.

Assistant Professors:
ADAM HENNE, B.A. Drew University 1997; M.Sc. University of Georgia 2008; Ph.D. 2008; Assistant Professor of Anthropology 2012, 2008.
ALEXANDRA KELLY, B.A. University of Chicago 2004; M.A. 2005; Ph.D. Stanford University 2014; Assistant Professor of History and Anthropology 2014.
JASON TOOHEY, B.A. University of California Santa Barbara 1995; M.A. California State University Northridge 2000; M.D. University of California Santa Barbara 2009; Assistant Professor of Anthropology 2011.

Adjunct Faculty:
Adams, Becker, Clautor, Dewey, Gingrich, Miller, Naudinot, Peterson, Peterson, Pierce, Rapson, Smith, Walker, Watson

Academic Professional Research Scientist:
Rick Weathermon

Professors Emeriti:
George C. Frison, George W. Gill, Charles A. Reher

The department of Anthropology promotes the understanding of humankind from an integrated, holistic approach which examines past, present and future trends in cultural, biological and linguistic diversity and uniformity. Though the department serves undergraduate and graduate majors who will become professional anthropologists or will pursue other related careers, it also provides information to a large number of non-majors and to the larger community regarding cross-cultural issues. Furthermore, because of its commitment to the four field approach including biological anthropology, archaeology, cultural anthropology and linguistic anthropology, the department fosters among its students an awareness of the interrelatedness of scientific concepts, methods and theories, and the humanistic foundation of scientific inquiry. The Department of Anthropology prepares its students both to understand the cultural resources of Wyoming and to participate as informed citizens in an increasingly complex global community.

Undergraduate Major

In addition to university and college requirements listed in this *Catalog*, anthropology majors must complete three semesters of foreign language and a statistics course—STAT 2050 or 2070. Anthropology majors must complete two lab science courses outside the major. Specific requirements for a B.A. in anthropology are ANTH 1100, 1200, 1300, 2000, 3300, 3310, 4010; one course from each of the following series: archaeology, ANTH 4110, 4111, 4115, 4116, 4120, 4125, 4130, 4150, 4160, 4170, 4190 or six credits of archaeological field school (ANTH 4140 or 5180); cultural anthropology—ANTH 4300, 4310, 4320, 4325, 4330, 4340, 4350, 4360, 4380, 4020 (with instructor's consent); linguistic anthropology—ANTH 4740, 4775, 4785, 4795, 4020 (with instructor's consent); and biological anthropology—ANTH 4210, 4215, 4220, 4230, 4255, 4260, 4020 (with instructor's consent). ANTH 1101, First-Year Seminar, is recommended for anthropology majors, although not required. In some cases (e.g., ANTH 3300, 3310) students will be required to take one hour of a section of ANTH 4975. Courses in the major must be completed with a grade of C or better.

At the completion of the Bachelor of Arts degree in Anthropology, students will be able to demonstrate knowledge about the four subfields of anthropology and their interrelationships; they will have participated in a research experience and understand its process; and, they will demonstrate ability to analyze and synthesize in relation to anthropological issues or theories.

Undergraduate Minors

The minor for non-anthropology majors requires two of the introductory courses: ANTH 1100, 1200, 1300, 2000, and 11-12 hours of electives from 2000, 3000, or 4000-level anthropology courses with no more than 3 hours at the 2000-level. See the anthropology web site for more details.

Teacher Education

Anthropology courses may be used to complete part of the requirements for teacher certification in social studies.

Graduate Study

The department offers programs of study leading to Master of Arts and Doctor of Philosophy degrees in Anthropology. Check Anthropology department web pages for any updates.

Program Specific Admission Requirements

Master's Program

Deadline for application is March 1 for the following fall.

See graduate admission requirements.

Submit letter of intent, resume, copies of GRE scores, transcripts, and an optional writing sample as digital documents to the UW online application system. A minimum of three letters of recommendation are required; a standardized recommendation form is provided through the application system.

In the letter of intent, students should describe their research interests, career goals, and how Wyoming's program will help them achieve these goals.

The Department of Anthropology requires that at least two of the recommendation letters be from academic supervisors or instructors.

Students must present evidence of a satisfactory background in anthropology, which should include coursework in all four subfields of Anthropology (socio/cultural, bio/physical, archaeology, and linguistics). Deficiencies in anthropology may require remediation. Students must have three semesters of a single foreign language or equivalent, and one semester of statistics. In those instances in which the undergraduate background of the student is deficient, the department reserves the right to prescribe course work that would correct such deficiencies.

The M.A. program is designed to be completed in two full years of graduate study. Appropriate allowance will be made for part-time students.

Students who graduate with a Master of Arts degree will be able to explain the content of the four fields of Anthropology and their interrelationship in written and oral formats; they will have an experience in original research; and, they will develop skills which foster professionalism in their chosen fields.

Doctoral Program

Deadline for application is December 15 for the following fall.

See graduate admission requirements.

Submit letter of intent, resume, copies of GRE scores, transcripts, and an optional writing sample as digital documents to the UW online application system. A minimum of three letters of recommendation are required; a standardized recommendation form is provided through the application system.

In the letter of intent, students should identify whom they would like as their faculty adviser and describe their research interests, career goals, and how Wyoming's program will help them achieve these goals.

Note: Contact department for GRE requirements and preferences.

Students with a master's degree may apply directly to the Ph.D. program.

Students with a bachelor's degree may apply to the Ph.D. program. If admitted, students are expected to complete the master's degree requirements following the Plan A or Plan B option before formal admission to the Ph.D. program. At the thesis defense or hearing for the Plan B paper, the student will receive a no pass, pass-terminate at the master's degree, or a pass-admit to the Ph.D. program.

Students admitted to the department's M.A. program are not guaranteed admission to the Ph.D. program.

For admission to the Ph.D. program with the Bachelor's degree, students must have course work in the four subfields of anthropology, three semesters of a single foreign language, and statistical competency at either the B.A. or M.A. level. If these are not satisfied, the student's faculty adviser in coordination with the student's graduate committee assigns remedial work as appropriate.

Students who graduate with a Ph.D. in Anthropology will have specialized and professional training so they can move into academic or non-academic tracks; they will have a dissertation experience that results in professional publications; and they will have professional experiences that facilitate their move into careers in a reasonable amount of time.

Program Specific Graduate Assistantships

Doctoral students generally receive two years of assistantships. First semester, first year M.A. students are generally not awarded assistantships; however, the department occasionally does make exceptions. M.A. students are eligible to apply for assistantships beginning in the second semester.

Assistantships are awarded through a departmental application process. An application form, cover letter, and resume are required.

Information and deadlines may be obtained in the department office.

Failure to complete steps in the M.A. program by established deadline (e.g., advisor selection, proposal presentation, etc.) means the student is not eligible for an assistantship. Failure of the Ph.D. preliminary exam means the student is not eligible for an assistantship.

Program Specific Degree Requirements

Master's Program Plan A (thesis)

See university minimum requirements.

Completion, with a grade of "B" or better of a four core-course sequence. This sequence will consist of ANTH 5010, 20th Century Anthropological Theory; ANTH 5015, Archaeological Theory and Method; ANTH 5020, Biological Anthropology; and ANTH 5030, Linguistic Anthropology.

First semester (fall): Students will submit form to the graduate advisor and department head identifying their thesis advisor BEFORE the graduate assistant allocation meeting (mid-late November).

Second semester (spring): Students will work with their advisor to select their committee, which must be formed and on-file in the department office by the end of the semester. During the core classes' final exam periods, students give a presentation to departmental faculty which outlines the general ideas for their proposed thesis.

Third semester (fall): Working closely with their advisor and committee, students complete a detailed prospectus and gain approval from thesis committee for MA thesis topic.

Fourth semester (spring): Thesis is completed and is approved by thesis committee.

Any M.A. student receiving a grade of C or less in two core classes will be expelled from the program.

Second semester research presentations are assessed by all department faculty in attendance at the presentation and evaluations will be given to the student's advisors. It is expected that students will work closely with their advisors to rectify any problems before they complete their thesis prospectus in the third semester.

If not completed prior to admission; three semesters of a single foreign language and one statistics course must be completed.

Plan B (non-thesis)

See university minimum requirements.

All requirements for a Plan A except thesis, if not completed prior to admission; three semesters of a single foreign language and one statistics course must be completed.

Doctoral Program

See university minimum requirements.

After completion of an M.A. program in anthropology.

A minimum of six content courses (18 hours) chosen by the student in conjunction with the student's committee. These courses are normally completed in the first two years of the Ph.D. program. In addition to anthropology courses, the other 4000/5000-level courses outside of the department may be required by the committee or chosen by the student in consultation with their committee.

Two additional courses in their first or second year: ANTH 5880, Professionalism in Anthropology and the two-semester sequence of ANTH 5000, Teaching and Learning in Anthropology (6 hours).

Teaching experience, including stand-alone courses, after completion of the first semester of Teaching and Learning (ANTH 5000), as well as teaching assistance to UW faculty members.

Participation in an approved internship experience (6-24 credit hours). Students pursue internships in state and federal agencies, museums, contract archaeology organizations, and other organizations that offer potential career experience.

Committee meeting and successful completion of a dissertation proposal.

Preliminary exams take place after the completion of 18 hours of content courses. ANTH 5880, and Teaching and Learning in Anthropology (ANTH 5890, or other as designated), normally before the end of the second year. If a student does not receive a passing grade on the preliminary exam, it can be repeated once. Failure to pass the preliminary examination the second time results in termination from the anthropology program.

International experience is highly recommended but not required, e.g. pre-dissertation summer fieldwork.

Student maintains a portfolio which documents teaching, internship, and research experience.

Students are encouraged to present papers at professional conferences and submit articles for publication throughout their tenure as a student. After admission to candidacy, the student is expected to research, write, and defend a dissertation based on original research (up to 48 credit hours). Students may either submit a single dissertation or a series of integrated publishable articles (30-40 pages each). The student's committee must approve this choice and decide on the number, length and content of the articles at the same time, usually at the committee hearing prior to the preliminary exams.

Anthropology (ANTH)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Intellectual Community in Anthropology. 1-3 (Max. 3) [I◀▶(none)] Orients students to the major and UW facilities important to academic success. In addition, skills such as critical thinking are emphasized through reading and discussion of articles on anthropological questions. Faculty panels introduce students to a variety of current topics in anthropology. *Prerequisite:* available to first or second semester freshmen through controlled enrollment. Students in ANTH, HIST and other social sciences have priority.

1100. Introduction to Biological Anthropology. 4. [SB◀▶PN] Basic concepts relating to the origin, evolution and biological nature of the human species.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1200. Introduction to Cultural Anthropology. 3. [CS,G◀▶H] Introduction to foreign, especially non-western, cultures through anthropological concepts, films and ethnographies.

1300. Introduction to Archaeology. 3. [CS,G◀▶PN] Explores ways in which prehistoric material remains can provide an understanding of the cultural way of life. General background in archaeological method and theory is used to examine case studies from throughout the world, based on themes such as ceramic technology and artistry development, growth of early civilizations and North American prehistory.

1450. World Archaeology. 3. [CS,G◀▶H] World Prehistory. Recommended for non-majors. A survey of the archaeology of Africa, Asia, Europe, Australia, and the Americas from the evolution of humans to the origins of agriculture to the rise of civilizations such as that of Egypt, China, and Mexico.

2000. Introduction to Linguistic Anthropology. 3. [L◀▶COM2] Demonstrates the interrelationship of language, human biology, and culture at the introductory level. Linguistic anthropological methods and theories are used to examine linguistic behaviors used throughout the world. *Prerequisite:* ANTH 1100, 1200 or 1300.

2200. World Culture. 3. [CS,G◀▶(none)] Provides an understanding of cultural behavior of people in various geographical areas of the world. Students read ethnographies, cultural descriptions of societies, written by cultural anthropologists. (Normally offered at least once a year)

2210. North American Indians. 3. [CS,D◀▶(none)] Comparative consideration of North American Indian culture areas at European contact period. Cross listed with AIST 2210. (Offered based on sufficient demand and resources)

2700. Introduction to Museology. 3. [CH◀▶(none)] Explores the historical, cultural, and contemporary roles of museums and preservation institutions in society. Introduces students to the museum professions, collection and exhibition installation strategies, and ethical problems of governance and collection. Field trips to regional collections are included. Cross listed with AMST/ART/HIST 2700. *Prerequisite:* WA.

2730. African Creativity and Ritual. 3. [CA,G◀▶(none)] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with AAST/ART 2730.

3015 [2015]. Introduction to the Music of the World's Peoples. 3. [WB,G◀▶(none)] Introduces music of the world's peoples. Students actively study and document living musical traditions and hear, research and study music from a wide variety of geographical areas of the world. Cross listed with MUSC 3015. *Prerequisite:* MUSC 1000.

3300. Ethnographic Methods in Anthropology. 3. [WB◀▶COM3] Introduces anthropology majors to ethnographic fieldwork, the fundamental method in cultural anthropology. Students conduct fieldwork and discuss research problems including ethics and the role of the researcher. Open to students in related fields of humanities and social sciences. *Prerequisite:* ANTH 1200. (Normally offered fall semester)

3310. Introduction to Anthropology Research Methods. 3. Introduces anthropology majors to use of the discipline's scientific method through problem formation, research data acquisition and research techniques used by anthropologists. *Prerequisite:* ANTH 1100, 1200, and 1300. (Normally offered spring semester)

3400. Hunters and Gatherers. 3. [(none)◆H] Describes cultural adaptation of hunter-gatherer societies using both the ethnographic and archaeological record from the Arctic to tropical jungles. *Prerequisite:* ANTH 1100, 1200, or 1300. (Offered based on sufficient demand and resources)

3420. The Anthropology of Global Issues. 3. Using anthropology's long-term, holistic and comparative approaches, the course examines key global issues, e.g., poverty, war, disease, environmental degradation, and terrorism from an anthropological perspective. Cross listed with INST 3420. *Prerequisite:* ANTH 1200.

3600. Archaeological Sciences. 3. Examines the biological, chemical and physical analytical methods used to reconstruct ancient human behavior. Includes radiometric and other dating methods, analysis of DNA and other organic molecules, stable isotope analysis of bone and sediments to reconstruct diet, environment, and migrations, trace elements for sourcing materials, and remote sensing. *Prerequisite:* completion of USP science requirement.

4000. Conference. 1-4 (Max. 4). Guided independent study. *Prerequisites:* senior standing and 15 hours in anthropology. (Offered based on sufficient demand and resources)

4010. History of Anthropological Thought. 3. [WC◆(none)] Designed as the capstone course for senior majors. Surveys anthropological theory development. Explores major trends and their relationships. *Prerequisites:* ANTH 1100, 1200, 1300, 3300, and 3310. (Normally taken in student's final semester)

4015. Archaeological Theory and Method. 3. Introduces the students to past and present archaeological theories through a literature survey of significant topics. Addresses questions, such as: How do archaeologists identify and solve problems? What do they perceive to be problems? What is the logic of archaeological arguments? Dual listed with ANTH 5015. *Prerequisites:* ANTH 1200, 1300, 3310, and at least one 4000 regional course.

4020. Seminar. 3-6 (Max. 6). Considers current topics of anthropological interest. May be repeated for a maximum of 6 hours credit when the subject matter of the seminar is different. *Prerequisite:* ANTH 1100, 1200, or 1300. (Offered based on sufficient demand and resources)

4110. Zooarchaeology I. 3. Introductory level seminar in the archaeological analysis of faunal materials. Emphasis is on identification and curation of bones from archaeological and Late Pleistocene paleontological contexts, including their use in the interpretation of prehistoric and historic human behavior, the investigation of paleoenvironmental conditions and paleoecological relationships and problem-oriented taphonomic research. Dual listed with ANTH 5110. *Prerequisite:* ANTH 1300.

4111. Zooarchaeology II. 3. Advanced level seminar in the archaeological analysis of faunal materials. Emphasis is on study of bones as an integrated component of basic archaeological research, including their use in the investigation of paleoenvironmental conditions and paleoecological relationships as well as problem-oriented taphonomic research, and the interpretation of human behavior. Dual listed with ANTH 5111. *Prerequisite:* ANTH 4110/5110.

4115. Lithic Analysis. 3. An overview of the analysis of stone tools and waste flakes from archaeological sites. Emphasizes appropriate use of typology and methods of debitage analysis. Dual listed with ANTH 5115. *Prerequisites:* ANTH 1300 and 9 additional hours in anthropology.

4116. Advanced Lithic Analysis. 3. An in-depth consideration of a single or limited range of topics in lithic analysis, or a group project focused on a case study. Dual listed with ANTH 5116. *Prerequisite:* ANTH 4115.

4120. North American Archaeology. 3. Studies North American prehistory from the earliest evidence to historic times. Dual listed with ANTH 5120. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4125 [4100]. Northwestern Plains Prehistory. 3. Northwestern Plains archaeology from the Paleoindian period to historic contact. A review of important sites and artifact types, ongoing UW research projects, regional and other expressions of ideology, Native American ethnohistory and contemporary perspectives, and historic preservation issues. Dual listed with ANTH 5125. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4130. Old World Archaeology. 3. Surveys major archaeological sequences of the Old World. Dual listed with ANTH 5130. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4135. Quantitative Methods in Anthropology. 3. A consideration of the use of quantitative methods in anthropological research, including descriptive and inferential statistics, pattern search, mathematical modeling and computer simulation. Dual listed with ANTH 5135. *Prerequisite:* STAT 2070 or equivalent.

4140. Archeological Field School. 2-6 (Max. 6). Summarizes a regional prehistory and gives practical and theoretical training in archaeological field methods. Field projects are located specific areas of the world (e.g., Wyoming, Croatia, Peru). *Prerequisite:* ANTH 1300 or 4120 or 4125 or 4130 or 4150. (Normally offered summer session)

4150. Seminar in Prehistory. 1-3 (Max. 9). Covers the prehistory of a specified region or time period within that region. Emphasizes learning prehistoric sequences, material culture, and research questions associated with the topic. Topics include, but are not limited to, Paleoindian, Archaic, Siberian, Northern Plains, Great Basin, Rocky Mountain, or Southwestern Archaeology. Dual listed with ANTH 5150. *Prerequisite:* ANTH 1300.

4155. Computer Programming for Archaeologists. 3. Introduces the application of computer programming to the collection, management, and analysis (hypothesis testing) of archaeological data. Develop models and simulations of complex prehistoric systems. Begins with an introduction to Microsoft Excel (Visual Basic for Applications), programming structure, and applications to archaeology. Specific assignments in writing programs relevant to typical archaeological problems. Dual listed with ANTH 5155. *Prerequisites*: ANTH 1300 or consent of instructor.

4160. GIS in Anthropology. 4. Introduction to how and why geographic information systems (GIS) are used in anthropology. Considers: 1) background, definitions, and concepts of geographic data and GIS; 2) Anthropological and archaeological approaches to GIS; and 3) hands-on-experience with GIS applications in archaeology through demonstrations, lectures, and structured inquiries. Dual listed with ANTH 5160. *Prerequisites:* ANTH 1200, or 1300.

4170. Geoarchaeology. 3. Introduces students to theory and method in geoarchaeological research. Emphasis is placed upon geomorphical processes of archaeological site formation and paleoenvironmental reconstruction. Dual listed with ANTH 5170. *Prerequisite:* ANTH 1300.

4190. Public Archaeology. 3. A consideration of archaeological legislation, policies and regulations; compliance, heritage, and avocational archaeology, cultural resource management; curation; and professional archaeological ethics. Dual listed with 5190.

4210. Human Osteology. 3. Provides a detailed study of the human skeleton. Dual listed with ANTH 5210. *Prerequisite:* ANTH 1100, LIFE 2022. (Normally offered spring semester)

4215 [4200]. Evolution and Hominin Fossils. 3. Surveys hominin fossil record in context of evolutionary process, stressing

structure-function and the dynamics of adaptive responses. Dual listed with ANTH 5215. *Prerequisite:* ANTH 1100. (Normally offered every third semester)

4220. Human Variation. 3. Studies age and sex differences, as well as race as a biological phenomenon. Includes origin and distribution of human races and adaptive significance of racial traits. Dual listed with ANTH 5220. *Prerequisite:* ANTH 1100. (Normally offered every third semester)

4230. Forensic Anthropology. 3. Introduces methods and purposes of physical anthropology as applied in human identification for law enforcement agencies. Dual listed with ANTH 5230; cross listed with CRMJ 4230. *Prerequisite:* ANTH 1100. (Normally offered fall semester of odd-numbered years)

4240. Forensic Anthropology Laboratory. 2. Studies details of advanced osteometric procedures, particularly as applied to problems of human skeletal identification. Dual listed with ANTH 5240. *Prerequisite:* ANTH 4210. (Offered based on sufficient demand and resources)

4255. Bioarchaeology. 3. Study of the human skeleton in archaeological context to reveal the biological and cultural pasts of individuals and communities. Using case studies, covers the history of the field, ethics of working with human remains, theoretical and methodological approaches to mortuary archaeology. Gain hands-on experience by working with specimens from the UWyoming Human Remains Repository. Dual listed with ANTH 5255. *Prerequisites*: ANTH 1100 or 1300.

4260. Anthropology of Food, Culture, and Nutrition. 3. Offers a biocultural perspective to the study of diet, nutrition, subsistence, and food systems. Study includes basic nutritional principles and diet seen in evolutionary, cross-cultural, ethnographic, and historical perspective; method and theory in nutritional anthropology; and contemporary issues in nutrition, cuisine, and foodways. Dual Listed with ANTH 5260. *Prerequisites*: ANTH 1100 or 1200.

4300. Anthropology of Religion. 3. Provides a comparative anthropological study of religious systems, emphasizing analysis of symbolism, myth and ritual. Dual listed with ANTH 5300. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4310. Environmental Anthropology. 3. Addresses how human societies interact with their surroundings, emphasizing cultural understandings of the environment. Introduces variety of theoretical and methodological approaches to topics ranging from problems of the American West to global environmental change. Cross listed with ENR 4310. Dual listed with ANTH 5310. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4315. Human Behavioral Ecology. 3. Examines the models and techniques of human behavioral ecology applied to hunter-gatherer societies; covers foraging, demography, life history, division of labor, sharing, and social inequality. Dual listed with ANTH 5315. *Prerequisites:* ANTH 1100, 1200, and 1300.

4320. Political Anthropology. 3. Encompasses theories and descriptions of relationships between power and society in both less formal tribal contexts and more highly structured political institutions. Dual listed with ANTH 5320. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4325. Symbolic Anthropology. 3. Teaches several anthropological approaches to symbolic and cultural analysis, while reading ethnographic examples of how symbolic analysis can be used to understand different cultures. Coursework assumes a basic knowledge of social science concepts. Dual listed with ANTH 5325. *Prerequisite:* ANTH 1200 or SOC 1000.

4330. Social Organization. 3. Provides theories of social organization, interrelations of social institutions, and current anthropological methods of interpretation. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4340. Culture Change. 3. Examines representative theories of change, factors involved, dynamics of modernization and applied anthropology. Dual listed with ANTH 5340. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4350. Medical Anthropology. 3. Understandings of health and illness vary widely. Taking a comparative historical approach, examines how an individual's interactions with sociocultural and physical environments influence the experiences of health and illness. Topics include symbolic healing, biomedicine as a cultural system, disease and international development, global politics of AIDS and other pandemics. Dual listed with ANTH 5350. *Prerequisite:* ANTH 1200 or SOC 1000.

4360. Psychological Anthropology. 3. Introduces methods and theories anthropologists use to analyze personality, socialization, mental illness and cognition in non-western societies. Dual listed with ANTH 5360. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4380. Visual Anthropology. 3. Offers anthropological interpretation of visual representations and media, including analysis of the development of ethnographic films and their contemporary use. Visual representations of many cultures as well as mainstream United States examples are analyzed. Dual listed with ANTH 5380. *Prerequisite:* ANTH 1200.

4740. Native American Languages and Cultures. 3. Demonstrates the interrelationship of language and culture in several Native American communities. Examines anthropological and linguistic theories regarding language spread and the peopling of North America, narrative performance, translation, and the connection between linguistic structures and cultural features. Dual listed with ANTH 5740; cross listed with AIST 4740. *Prerequisite:* ANTH 2000 or 5760.

4775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. Dual listed with ANTH 5775; cross listed with WMST 4775. *Prerequisite:* ANTH 1200, 2000.

4785. Language and Racism. 3. Explores the ways in which racist ideology and socially-based racial categories are reinforced and changed through language and linguistic usage. The forms of language used in the construction of covertly and overtly racist communication, and the media through which racism is communicated also will be investigated. *Prerequisite:* ANTH 1200 or 2000.

4795. Language Change. 3. Considers how languages change over time, due to both internal and external forces. The effects of language contact, borrowing, and structural change are discussed. The use of linguistic data for questions of migration and cultural contact are also explored. Dual listed with ANTH 5795. *Prerequisite:* ANTH 2000.

4970. Internship 1-12 (Max. 12). Allows students to gain hands-on experience, bridging the gap between anthropology as an academic discipline and anthropology as practiced in museums, public archaeology agencies, non-governmental organizations, and private consulting companies. Involves a required academic component in addition to work experience. Internship credit cannot fulfill requirements of the major. *Prerequisites:* anthropology major of junior/senior standing and consent of internship director and/or department head.

4975. Undergraduate Practicum in Anthropology. 1-4 (Max. 6). Affords students the opportunity to extend research projects in field or lab locations and receive additional credit for their work. Students sign up for these

hours only in conjunction with another course and with the instructor's consent. *Prerequisites:* 9 hours in anthropology, consent of instructor.

5000. Special Problems. 1-4 (Max. 12). Conference course to allow graduate students opportunity for both guided and independent research. *Prerequisite:* graduate standing and consent of instructor.

5005. Graduate Seminar in Anthropology. 3 (Max. 6). *Prerequisite:* graduate standing or consent of instructor.

5010. 20th Century Anthropology Theory. 3. Examines major thinkers and schools of thought in anthropology of the 20th century. Emphasis is on cultural theory within the context of the four-field approach. *Prerequisite:* graduate standing in anthropology.

5015. Archaeological Theory and Method. 3. Introduces the students to past and present archaeological theories through a literature survey of most significant topics. Addresses questions, such as: How do archaeologists go about identifying and solving problems? What do they perceive to be problems? What is the logic of archaeological arguments? Dual listed with ANTH 4015. *Prerequisite:* ANTH 1200, 1300, 3310, and at least one 4000 regional course.

5020. Biological Anthropology. 3. Offers a graduate level overview of biological anthropology. Beginning with the history of relevant areas of human biology, provides extensive discussion of such areas as paleoanthropology, primatology, and human variation. Also includes detailed theoretical examinations of topics within hominid evolution, the concept of race and sociobiology. *Prerequisite:* first year anthropology graduate student standing.

5030. Linguistic Anthropology. 3. Demonstrates interrelationships between language, human biology, and culture. In particular, the relevance of the study of language to biological anthropology, archaeology, and cultural anthropology is emphasized. Examines classic approaches in anthropological linguistics and recent controversies such as the origin of language in human evolution.

5110. Zooarchaeology I. 3. An introductory level seminar in the archaeological analysis of faunal materials. Emphasis is on the identification and curation of bones from archaeological and Late Pleistocene paleontological contexts, including their use in the interpretation of prehistoric and historic human behavior, the investigation of paleoenvironmental conditions and paleoecological relationships and problem-oriented taphonomic research. Dual listed with ANTH 4110. *Prerequisite:* ANTH 1300.

5111. Zooarchaeology II. 3. An advanced level seminar in the archeological analysis of faunal materials. Emphasis is on the study of bones as an integrated component of basic archaeological research, including their use in the investigation of paleoenvironmental conditions and paleoecological relationships as well as problem-oriented taphonomic research, and the interpretation of human behavior. Dual listed ANTH 4111. *Prerequisite:* ANTH 4110/5110.

5115. Lithic Analysis. 3. An overview of the analysis of stone tools and waste flakes from archaeological sites. Emphasizes appropriate use of typology and methods of debitage analysis. Dual listed with ANTH 4115. *Prerequisite:* ANTH 1300 and 9 additional hours in anthropology.

5116. Advanced Lithic Analysis. 3. An in depth consideration of a single or limited range of topics in lithic analysis, or a group project focused on a case study. Dual listed with ANTH 4116. *Prerequisite:* ANTH 4115.

5120. North American Archaeology. 3. Studies North American prehistory from the earliest evidence to historical times. Dual listed with ANTH 4120. *Prerequisite:* ANTH 1300 or consent of instructor.

5125. Northwestern Plains Prehistory. 3. Covers the Northwestern Plains from the Paleo-Indian to historic contact, including relationships to surrounding areas. Dual listed with ANTH 4125. *Prerequisite:* ANTH 1300.

5130. Old World Archaeology. 3. Survey of the major archaeological sequences of the Old World. Dual listed with ANTH 4130. *Prerequisite:* ANTH 1300.

5135. Quantitative Methods in Anthropology. 3. A consideration of the use of quantitative methods in anthropological research, including descriptive and inferential statistics, pattern search, mathematical modeling and computer simulation. Dual listed with ANTH 4135. Prerequisites: STAT 2070 or comparable course.

5150. Seminar in Prehistory. 1-3 (Max 9). Covers the prehistory of a specified region or time period within that region. emphasizes learning prehistoric sequences, material culture, and research questions associated with the topic. Topics include, but are not limited to, Paleoindian, Archaic, Siberian, Northern Plains, Great Basin, Rocky Mountain, or Southwestern Archaeology. Dual listed with ANTH 4150. *Prerequisite:* ANTH 1300.

5155. Computer Programming for Archaeologists. 3. Introduces the application of computer programming to the collection, management, and analysis (hypothesis testing) of archaeological data. Develop models and simulations of complex prehistoric systems. Begins with an introduction to Microsoft Excel (Visual Basic for Applications), programming structure, and applications to archaeology. Specific assignments in writing programs relevant to typical archaeological problems. Dual listed with ANTH 4155. *Prerequisites*: ANTH 1300 or consent of instructor.

5160. GIS in Anthropology. 4. Introduction to how and why geographic information systems (GIS) are used in anthropology. Considers: 1) Background, definitions, and concepts of geographic data and GIS; 2) Anthropological and archaeological approaches to GIS; and 3) Hands-on experience with GIS applications in archaeology through demonstrations, lectures, and structured inquires. Dual listed with ANTH 4160. *Prerequisite:* ANTH 1200 or 1300.

5165. Advanced Archaeological Research. 3-6 (Max. 6). Intended for graduate students in archeology which will cover a wide range of topics in advanced research techniques. *Prerequisite:* graduate standing.

5170. Geoarchaeology. 3. Introduces students to theory and method in geoarchaeological research. Emphasis is placed upon geomorphological processes of archaelogical site formation and paleoenvironmental reconstruction. Dual listed with ANTH 4170. Prerequisite: ANTH 1300 or consent of instructor.

5180. Advanced Archaeological Field Studies. 6. Covers the entire archaeological process from project planning and budgeting to professional presentation of the results with an emphasis on field methods. Up to date field techniques with electronic data collection and analysis are introduced. Interdisciplinary philosophy is emphasized with lectures, demonstrations and hand-on experience. *Prerequisite:* graduate level students or upper level undergraduates with field school experience and consent of instructor.

5190. Public Archaeology. 3. A consideration of archaeological legislation, policies, and regulations; compliance, heritage, and avocational archaeology; cultural resource management; curation; and professional archaeological ethics. Dual listed with ANTH 4190. *Prerequisites:* ANTH 1300.

5210. Human Osteology. 3. Provides a detailed study of the human skeleton. Dual listed with ANTH 4210. *Prerequisite:* ANTH 1100, LIFE 2022. (Normally offered spring semester)

5215 [5200]. Evolution and Hominin Fossils. 3. Surveys hominin fossil record in context of evolutionary process, stressing structure-function and the dynamics of adap-

tive responses. Dual listed with ANTH 4215. *Prerequisite:* ANTH 1100. (Normally offered every third semester)

5220. Human Variation. 3. Studies age and sex differences, as well as race as a biological phenomenon. Includes origin and distribution of human races and the adaptive significance of racial traits. Dual listed with ANTH 4220. *Prerequisite:* ANTH 1100.

5230. Forensic Anthropology. 3. Introduces methods and purposes of physical anthropology as applied in human identification for law enforcement agencies. Dual listed with ANTH 4230. *Prerequisite:* ANTH 1100.

5240. Forensic Anthropology Laboratory. 2. Studies details of advanced osteometric procedures, particularly as applied to problems of human skeletal identification. Dual listed with ANTH 4240. *Prerequisite:* ANTH 4210.

5255. Bioarchaeology. 3. Study of the human skeleton in archaeological context to reveal the biological and cultural pasts of individuals and communities. Using case studies, covers the history of the field, ethics of working with human remains, theoretical and methodological approaches to mortuary archaeology. Gain hands-on experience by working with specimens from the UWyoming Human Remains Repository. Dual listed with ANTH 4255. *Prerequisites*: ANTH 1100 or 1300.

5260. Anthropology of Food, Culture, and Nutrition. 3. Offers a biocultural perspective to the study of diet, nutrition, subsistence, and food systems. Study includes basic nutritional principles and diet seen in evolutionary, cross-cultural, ethnographic, and historical perspective; method and theory in nutritional anthropology; and contemporary issues in nutrition, cuisine, and foodways. Dual Listed with ANTH 4260. *Prerequisites*: ANTH 1100 or 1200.

5300. Anthropology of Religion. 3. Provides a comparative anthropological study of religious systems emphasizing analysis of symbolism, myth, and ritual. Dual listed with ANTH 4300. *Prerequisite:* ANTH 1200.

5310. Environmental Anthropology. 3. Addresses how human societies interact with their surroundings, emphasizing cultural understandings of the environment. Introduces variety of theoretical and methodological approaches to topics ranging from problems of the American West to global environmental change. Cross listed with ENR 5310. Dual listed with ANTH 4310. *Prerequisite:* ANTH 1200.

5315. Human Behavioral Ecology. 3. Examines the models and techniques of human behavioral ecology applied to hunter-gatherer societies; covers foraging, demography, life history, division of labor, sharing, and social inequality. Dual listed with ANTH 4315. *Prerequisite:* ANTH 1100, 1200, and 1300.

5320. Political Anthropology. 3. Encompasses theories and descriptions of relationships between power and society in both less formal tribal contexts and more highly structured political institutions.

5325. Symbolic Anthropology. 3. Teaches several anthropological approaches to symbolic and cultural analysis, while reading ethnographic examples of how symbolic analysis can be used to understand different cultures. Coursework assumes a basic knowledge of social science concepts. Dual listed with ANTH 4325. *Prerequisite:* ANTH 1200 or SOC 1000.

5340. Culture Change. 3. Examines representative theories of change, factors involved, dynamics of modernization and applied anthropology. Dual listed with ANTH 4340. *Prerequisite:* ANTH 1200.

5350. Medical Anthropology. 3. Understandings of health and illness vary widely. Taking a comparative historical approach, this class examines how an individual's interactions with sociocultural and physical environments influence the experiences of health and illness. Topics include symbolic healing, biomedicine as a cultural system, disease and international development, and the global politics of AIDS and other pandemics. Dual listed with ANTH 4350. *Prerequisites:* ANTH 1200 or SOC 1000.

5360. Psychological Anthropology. 3. Introduces methods and theories anthropologists use to analyze personality, socialization, mental illness and cognition in non-western societies. Dual listed with ANTH 4360. *Prerequisite:* ANTH 1200.

5380. Visual Anthropology. 3. Offers anthropological interpretation of visual representations and media, including analysis of the development of ethnographic films and their contemporary use. Visual representations of many cultures as well as mainstream United States examples are analyzed. Dual listed with ANTH 4380. *Prerequisite:* ANTH 1200.

5390. Field Methods in Cultural Anthropology. 3. Introduces the graduate student to the research techniques used by cultural anthropologists. Students will conduct their own projects using participant-observation and interviewing. In-class discussion will be drawn on U.S. and international ethnographic examples. *Prerequisite:* graduate standing.

5720. Advanced Linguistics. 3. Data are offered for analysis of morphological and syntactic materials from languages throughout the world. Attention is given to the limits within which these aspects of human language appear to vary. *Prerequisite:* ANTH 4750, ENGL 4750, LANG 4750.

5730. Field Techniques. 3. Students work directly with the speaker of an unwritten non-Indo-European language to learn techniques for eliciting the data requisite to begin a description of the language's structure. Identical to LANG 5310. *Prerequisite:* ANTH 5100 or LANG 5300.

5740. North American Language and Culture. 3. Demonstrates the interrelationship of language and culture in several Native American communities. Examines anthropological and linguistic theories regarding language spread and the peopling of North America, narrative performance, translation, and the connection between linguistic structures and cultural features. Dual listed with ANTH 4740 and AIST 4740. *Prerequisite:* ANTH 2000 or ANTH 4760.

5775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. Dual listed with ANTH 4775; cross listed with WMST 5775. *Prerequisite:* ANTH 1200, 2000.

5795. Language Change. 3. Considers how languages change over time, due to both internal and external forces. The effects of language contact, borrowing, and structural change will be discussed. The use of linguistic data for questions of migration and cultural contact also will be explored. Dual listed with ANTH 4795. *Prerequisites:* ANTH 2000 and ANTH/ENGL/LANG 3750/4750.

5875. Graduate Practicum. 1-4 (Max. 6). Affords graduate students the opportunity to extend research projects in field or lab locations and receive additional credit for their work. Students sign up for these hours only in conjunction with another course and with the instructor's consent. *Prerequisite:* graduate standing and consent of instructor.

5880. Professionalism. 3. Provides an opportunity for the integration of graduate training and career choice. Examines issues of professionalism in the discipline ranging from ethical conduct to the research process and publication. *Prerequisite:* admission to the doctoral program in anthropology.

5890. Teaching Anthropology. 3. Anthropology is increasingly relevant to many audiences. Provides practical insight and examination of controversial anthropological concepts - race, evolution, culture, etc., and how these

may be taught to college or public audience. Also examines the teaching culture of anthropology as a discipline. *Prerequisite:* admission to the doctoral program in anthropology.

5900. Practicum in College Teaching. 1-3. (Max 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies:. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisites:* enrolled in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 14). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrolled in a graduate level degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Art

110 Visual Arts Building, 766-3269
FAX: (307) 766-5468
Web site: www.uwyo.edu/art
Department Head: Ricki Klages

Professor:

LEAH HARDY, B.F.A. Kansas University 1987; M.F.A. Indiana University 1990; Professor of Art 2014, 2002.

RICKI KLAGES, B.F.A. University of Arizona 1984; M.A. University of New Mexico 1991; M.F.A. 1993; Professor of Art 2003, 1996, 2012.

MARK RITCHIE, B.F.A. University of Kansas 1986; M.F.A. Indiana University 1990; Professor of Art 2007, 1995.

Associate Professors:

ASHLEY HOPE CARLISLE, B.F.A. University of South Mississippi 1997; M.F.A. University of Georgia 2002; Associate Professor of Art 2010, 2003.

MARGARET HAYDON, B.F.A. Oberlin College 1977; M.F.A. San Francisco State University 1989; Associate Professor of Art 2008, 2002.

ELIZABETH HUNT, B.A. Rhodes College 1993; M.A. University of Missouri-Columbia 1996; Ph.D. 2004; Associate Professor of Art 2013, 2006.

DOUG RUSSELL, B.F.A. Columbia College 1990; M.A. University of Iowa 1995; M.F.A. 1996; Associate Professor of Art 2011, 2005.

Assistant Professors:

DIANA BAUMBACH, B.F.A. Washington University in St. Louis 2003; M.F.A. Southern Illinois University 2007; Assistant Professor of Art 2009, 2012.

PETER FINE, B.A. California State University, Chico 1993; M.F.A. University of Arizona 2004; Assistant Professor of Art 2013.

RACHEL SAILOR, B.A. Oregon State University 1992; M.A. University of Oregon 1994; Ph.D. University of Iowa 2007; Assistant Professor of Art 2011.

SHELBY SHADWELL, B.F.A. Washington University in St. Louis 2003; M.F.A. Southern Illinois University 2007; Assistant Professor of Art 2010, 2012.

Associate Lecturer:

PATRICK KIKUT, B.F.A. University of Colorado 1990; M.F.A. University of Montana 1994. Assistant Lecturer 2012.

Assistant Academic Professional Research Scientist

DAVID JONES, B.F.A. University of Tennessee 2000; M.F.A. University of Georgia 2004.

Assistant Academic Professional Lecturer:

BAILEY RUSSELL, B.A. Princeton University 2001; M.A. New York University 2004.

Adjunct Faculty:

RANI ROBISON, B.A. University of Utah 1999; M.F.A. University of Oregon 2008.

MARY KATHERINE SCOTT, B.F.A. University of Wyoming 2003; M.A. 2005; M.A. Northern Illinois University 2008; Ph.D. Sainsbury Research Unity for the Arts of Africa, Oceania and the Americas University of East Anglia 2012.

Professors Emeriti:

Deaderick, Edwards, Evans, Flach, Forrest, Reif, Russin (Distinguished Professor of Art), Schaefer

The department of Art supports the creative, aesthetic and cultural development of students within the university community and serves the cultural and educational needs of the state. The department is dedicated to preparing its graduates to assume leadership positions in their professional lives while maintaining an inner commitment to the aesthetic standards of their chosen discipline.

The department fosters a unique combination of innovation, tradition, aestheticism and practicality, by providing a professional visual arts education built on a strong University Studies Program (USP) foundation.

Undergraduate Major

The department offers course work leading to the B.A. and B.F.A. degrees in art. Based on their goals and career plans, students in consultation with a faculty adviser select the appropriate degree plan. Students major in art and declare an emphasis in one or more of the following areas:

Drawing
Painting
Photography
Printmaking
Ceramics
Sculpture
Metalsmithing

Students may also declare an art major with a concentration in graphic design.

The department also offers course work leading to the B.A. in art history.

University Studies Program (USP)	Hrs.
First-Year Seminar (FYS)	3
Communication I (COM1)	3
Communication II (COM2)	3
Communication III (COM3)	3
Human Culture (H)	6
U.S. & Wyoming Constitutions (V)	3
Quantitative Reasoning (Q) (test level)	3
Physical & Natural World (PN)	6

College of Arts & Sciences Core Curriculum	Hrs.
U.S. Diversity (ASD)	3
Global Awareness (ASG)	3
Upper division requirement	42
42 credit hours of 3000-4000 courses.	

B.F.A. Degree. The B.F.A. degree program is offered to outstanding students who are prepared for art studies, careers and professional activity beyond the undergraduate level. Up to seventy (70) semester hours are focused

in studio and art history course work, while a minimum of fifty-eight (58) semester hours are reserved for University Studies Program requirements

Application

Formal application is made to the department for acceptance into the B.F.A. degree program. Favorable faculty review of the application materials and a cumulative 3.25 GPA in course work in the major and university studies are required before a student is declared a candidate for the B.F.A. degree.

- C or better in all art classes
- 3.25 in art major program
- 3.0 overall GPA

Undergraduate majors proceed with meeting the USP requirements for the B.A. in art and balance with foundation, art history, and studio core requirements in the major until formally accepted as a B.F.A. candidate. Application does not automatically guarantee acceptance into the B.F.A. program.

Majors in the process of completing the fourth semester of their Foundations and Studio Core course work (16-19 hours) submit applications materials by February 1st or November 1st of their first semester in the department. Students transferring to the Department of Art who have completed their foundation core and successfully passed portfolio review are eligible to apply for a B.F.A. after one semester in the Department of Art.

B.A. in Art History. The Art History major will provide students with a course of study that will provide depth and breadth in the history of art. Students will develop a broad understanding of world art, study the art of western and other global cultures in-depth, and be introduced to the historiography and professional practices related to the field. Closely linked to the Museum Studies minor curriculum, the Art History major would have a strong vocational application.

Program Requirements

Requirements of the program include:

- 121 hours, including 51 hours within the Art major
- All Art courses must be passed with a letter grade of C or better
- 2.5 GPA within major required
- 2.5 overall GPA
- UW Transfer Art Residency Requirement for transfer of 12 or more art credit hours into department: 26 upper division hours of UW Art courses

Foundation Core **6 Hrs.**
ART 1005 Drawing I 3
ART 1110 Design I 3
ART 1120 Design II 3
ART 1130 Design III 3

Art History Core **9 Hrs.**
ART 2010 Survey I *required* 3
ART 2020 Survey II *required* 3
Plus choose from one of the following:
ART 2700 Intro to Museology 3
ART 2030 History of Graphic Design 3

Studio Core **3 Hrs.**
ART 1310 Intro to Sculpture 3
ART 2005 Drawing II 3
ART 2112 Graphic Design 3
ART 2210 Painting I 3
ART 2255 Intro to Photography, Digital or
ART 2265 Intro to Photography, Black and White 3
ART 2350 Metalsmithing I 3
ART 2410 Ceramics I or
ART 2420 Ceramics II 3
ART 3510 Printmaking I 3

Upper Division Electives **18 Hrs.**
3000 or 4000 level Art History Courses* 6-9
ART 4790 Art Seminar *required* 6-9
Other Historical Traditions *required* 3-9
(examples include but are not limited to: Medieval Islamic, Japanese Art and Culture, Meso-American)

*6 hours of upper division are history may be taken in other departments with cross listed courses (that may have prerequisites other than Art History).

*Cross listed and applicable courses: Intro to Museology, HIST/ANTH/ART 2700; Victorian Women's Lives, ART/WMST 4830; History of Women Artists, ART/WMST 4780; History of Architecture, ARE 3030; The Harlem Renaissance, AMST 4250; Art and Ecology, AMST/ART 4640; Special Topics in American Studies-including travel courses (as appropriate); Special topics in Classical and Modern Languages-including travel courses (as appropriate); History of the Book, HIST 4070, 4075, 4076, 4077.

Foreign Language **15 Hrs.**
Language 1010 4
Language 1020 3
Language 2030 4
Language 2040 3

B.A. Degree. The B.A. degree is available to students who are preparing for further studies or careers in the arts and arts-related fields, such as art education, graphic design, art therapy, medical illustration, botanical illustration and forensic illustration. Students work with their academic advisers to select courses from the USP and elective offerings to complement art studies in their areas of interest. Students must earn a grade of C or better in all courses taken to satisfy department requirements. Courses in the major must be taken for a letter grade. In addition to the university requirement that degree candidates hold a minimum cumulative grade point average of 2.00, degree candidates for the B.A. degree in the Art Department also must have a minimum 2.50 cumulative grade point average and a 2.50 grade point average in Art Department courses at the time of graduation.

Art/Art Education Concurrent Major. Through a cooperative agreement between the Art Department and the program of Art Education, all Art Education students will concurrently complete a major in Art. The Art degree requirements are essentially the same as for all other Art majors; however, specialized advising is available to ensure that students select programs that are both efficient and beneficial to their ultimate career goals.

Transfer Residency. A minimum of 26 hours of upper-division course work in the major is required to establish residency in the department for all transfer students. This applies to students in the B.F.A., B.A., and Art Education degree programs who transfer in 12 or more hours of art courses for the major. Students in all art programs must meet the university requirement of at least 42 hours of course work at the upper-division level (3000 and above).

Minimum Course Requirements for Art Majors. In addition to the university and college requirements listed in this *Catalog*, all students majoring in art must complete the following:

Foundation Core **15 Hrs.**
ART 1005 Drawing I 3
ART 1110 Design I 3
ART 1115 Digital Media 1
ART 1120 Design II 3
ART 1130 Design III 3
ART 2000 Portfolio Review 1
ART 2305 Metal/Plaster 1

Art History Core **9 Hrs.**
ART 2010 Survey I 3
ART 2020 Survey II 3
Advanced Art History Course 3

Studio Core (minimum) **9 Hrs.**
ART 1310 Sculpture I 3
ART 2005 Drawing II 3
ART 2210 Painting I 3
ART 2112 Graphic Design 3
ART 2255 Photography, Digital 3
ART 2265 Photography, Black and White 3
ART 2410 Ceramics I or 3
ART 2420 Ceramics II 3

ART 3510 Printmaking 3
ART 2350 Metalsmithing 3

Upper Division Art Electives (minimum)
BA Studio. (3000+).....10
BFA Studio. (3000+)..... 12
BFA Art History (3000+) 6

ART 1005, 1110, 1120 and 1130 are considered an important preparation and prerequisite for drawing, painting, printmaking, ceramics, sculpture and graphic design courses and are required freshman courses for the major. Majors must complete the foundation core hours before electing upper-division courses in any studio area. ART 2010, 2020, and 2305 are required sophomore courses.

Once sophomore majors complete course prerequisites, they select a minimum of three courses from the studio core hours. Most of the university and college requirements should be completed as early as possible before the senior year. The department will enforce published prerequisites for courses.

Art majors must submit a portfolio for evaluation before proceeding to intermediate and advanced studios beyond the required studio core. Any student whose portfolio is assessed as deficient must address the deficiencies before receiving permission to advance in the major.

Please note: Students who do not pass the portfolio review will be able to resubmit the following semester. However, if students fail more than once, they will be unable to progress in the department of art and may be asked to transfer to another department or UW college or complete an art minor. Portfolio evaluation will occur once in each of the fall, spring, and summer semesters.

Art Concentrations. In choosing art electives, students (in consultation with their department adviser) may select from a full range of art course work either broadly based or with concentration in the areas of painting, drawing, printmaking, sculpture, ceramics or graphic design. In the Humanities/Fine Arts Distributed Major degree program. In the B.F.A. degree program, students may declare a concentration in drawing, painting, printmaking, sculpture or ceramics.

Graphic Design Option. Graphic designers explore a variety of communication issues that deal with diverse messages and audiences.

Students interested in pursuing a professional career in graphic design and visual communication may elect a required sequence of courses for the B.A. degree in art with a concentration in graphic design. Students planning to graduate in four years must begin the sequence in the second semester of the freshman year.

Graphic Design Core
ART 3110 Typography 3
(Spring only)
ART 2112 Graphic Design I.....3
(Fall only)
ART 2122 Computer Graphics I 3
(Spring only)
ART 3120 Graphic Design II.....3
(Fall only)
ART 4110 Computer Graphics II 3
(Spring only)
ART 4120 Senior Projects in Design 3
(Fall only)
ART 4400 Internship 6

Internships. Internships are an important aspect of the graphic design concentration. Students in all concentrations may elect internship placements in the slide library, Department of Theatre and Dance or UW Art Museum, or in the appropriate academic or administrative unit across campus. Placements are also available in state and local arts agencies and institutions during the semester and summer. National placements are likewise reviewed and approved.

Visual Communications Center. The graphic design/visual communication area provides students with a "human centered" approach to learning that challenges and nurtures them to think conceptually and prepares them to be flexible in an international community that is continually being influenced by new ideas, tools and technology.

The visual communications center is a facility for undergraduate research that functions as a classroom, studio and high-end technology space and incorporates industry standard tools for graphic design, computer graphics and digital art exploration.

Department Policy. An art class may require additional meeting times, so that students may fully participate in the Visiting Artist Program and the UWAM lecture series.

As a matter of policy, the art department reserves the right to retain any works created by students it deems worthy for the purposes of exhibition until the end of the academic year.

The art department studios are the primary instructional classrooms. As a matter of policy, access to the studios and use of the equipment is reserved for students who are formally registered for scheduled courses and are following a prescribed curriculum.

Scholarships. The department has several scholarships for qualified students at all stages in the program. See Department of Art for a full list of scholarships.

Academic and Career Advisement. Faculty advisers work closely with art students to guide and direct their progress through the declared degree program and course of study. Through the visiting Artist Program, the UW Art Museum and internship placements, the department provides numerous opportunities and role models for a professional life in the visual arts. Through consultation and discussion with faculty advisers, art students consider their interests and abilities in relation to the many and varied careers in the arts and art related fields. Many graduates go directly into industry, on to pursue graduate studies or take the next step in their career plan. On a competitive basis upon graduation, majors may participate in the Post Bac Program where they prepare a portfolio for graduate school and gain additional experience in the studio and the classroom setting.

Graphic Design, Museum Studies, Studio, Art History Minors

A minor is offered in graphic design, museum studies, all studio areas and in art history. Further information may be found on the department's web site.

Graduate Study

At present, no program for a graduate degree in art is offered; however, some courses at the 4000 level may be counted at the graduate level in other degree programs.

Art (ART)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1005. Drawing I. 3. A foundation level drawing course introducing fundamentals of observation, artistic invention, and basic principles of perspective and composition through problems in still life, landscape, and live model. Lectures, drawing sessions, and critiques develop formal, conceptual, and technical understanding of the drawing process.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1110. Foundation: Two Dimensional. 3. First in a sequence of three foundation courses that investigate the fundamentals of design. Basic aesthetic/formal concepts and conceptual approaches are covered through a variety of two-dimensional mediums. Structured

crititques are employed to provide students the experience of assessing formal, conceptual, and technical aspects of art.

1115. Digital Media. 1. An introductory level course designed to investigate the role of digital media in visual literacy. Students gain practice with basic graphics software, explore using the Internet in informing the development of art work, and discuss how application of these skills are used in classroom, studio, and commercial art fields.

1120. Foundation: Three Dimensional. 3. Second in a sequence of three foundation courses that investigate the fundamentals of design. Basic aesthetic/formal concepts and conceptual approaches are covered through a variety of three-dimensional mediums. Structural form is emphasized in various contextual settings. Structured critiques are employed to provide students in the experience of assessing formal, conceptual, and technical aspects of art.

1130. Foundation: Color Theory. 3. Third in a sequence of three foundation courses that investigate the fundamentals of design. Explores color theories based on the color wheel/light spectrum including hue, value, chroma, and aesthetic color relationships. Optical color, emotional/psychological color, and color symbolism are also covered. Structured critiques are employed to provide students the experience of assessing formal, conceptual, and technical aspects of art. (Offered based on sufficient demand and resources)

1310. Introduction to Sculpture. 3. Introduces fundamentals of sculpture as a process of three-dimensional expression. Students explore various media, techniques and concepts through a series of assigned and open projects. Emphasis on traditional methods and formal abstract elements of sculpture are encourages, leading to an understanding of both classic and modern concepts of form. *Prerequisites:* ART 1110, 1120.

2000. Portfolio Review. 1. One-semester course in which work is created for a portfolio review at midterm based on the content and principles learned in the foundation core classes. *Prerequisites:* successful completion of ART 1005, 1110, 1120, and 1130, and a UW GPA of 2.5 or above.

2002. Special Topics In:. 3 (Max. 6). Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. *Prerequisite:* ART 1005; ART 1130; sophomore standing.

2005. Drawing II. 3. An intermediate level drawing course building upon fundamentals of observation, artistic invention, perspective and composition through problems in still life, landscape, explorations in wet and dry media, and color with pastels. Lectures, drawing sessions, and critiques develop formal, conceptual, expressive and technical understanding. *Prerequisite:* ART 1005.

2010. Art History I. 3. [CA◀▶H] First semester of a one-year survey. Studies ancient, medieval, renaissance and modern art with special reference to various social, economic and historic factors which motivated and conditioned the aesthetic forms. Includes ancient, medieval and early renaissance periods. ART 2010 and 2020 are required of all art majors and should be taken in sequence.

2020. Art History II. 3. [CA◀▶H] Second semester of a one-year survey. Studies European/American Art from the Renaissance through Contemporary with special emphasis and historical factors which motivated and conditioned the aesthetic forms. Covers Renaissance, Baroque, Rococo, 18th Century, 19th Century, Early Modernism and Contemporary Art. ART 2010 and 2020 are required of art majors and should be taken in sequence.

2030. History of Graphic Design. 3. History of graphic language and evolution of graphic communication. Includes an extensive examination of the social forces that shaped the design profession and how in turn design has shaped society. The theories that moved designers to act to remake society are also considered.

2112 [2120]. Graphic Design. 3 (Max. 6). Explores techniques of graphic design preparation from concept through paste-up to the printed page, both on and off the computer. Problems include stationery, brochures, posters and corporate images. Graphic design history is referenced and researched. *Prerequisites:* ART 1110 and ART 1115. (Offered fall semester)

2122 [3110]. Computer Graphics. 3 (Max. 9). Develops hands-on understanding of how visual elements and text are created and manipulated on current graphic design software programs used in the field. Explores techniques of basic graphic design preparation on the computer. Problems are given in various software applications. Uses graphic design problems as technical examples of production. Laboratory/lecture. *Prerequisite:* ART 2112. (Normally offered spring semester)

2210. Painting I. 3. Introduces problems in painting, developing skill, techniques and concepts. *Prerequisite:* ART 1005, 1110, and 1130; ART 1120 may be taken concurrently. (Offered fall and spring semesters)

2255. Introduction to Photography, Digital. 3. Fundamentals of Digital and Color photography. Students will learn how to use their digital cameras, how to input images to Photoshop and out put them to prints. The class will begin with an investigation of techniques before moving throuh a series of assignments designed to develop the understanding of how to compose a body of work around a specific theme or concept. Lectures will work through the concepts and history of color photography and regular critiques will guide students towards creating a final portfolio of images. *Prerequisites:* ART 1110, ART 1130.

2265. Introduction to Photography, Black and White. 3. Fundamentals of Black and White film photography, including use of SLR cameras, how to correctly expose film, process it and create prints in the darkroom. The class will begin with an investigation of techniques before moving through a series of assignments designed to develop the understanding of how to compose a body of work around a specific theme or concept. Lectures will work through the concepts and history of Black and White photography and regular critiques will guide students towards creating a final portfolio of images. *Prerequisites:* ART 1110, ART 1130.

2305. Techniques: Wood/Art Preparation. 1. Art Tech 2305 covers two curricular unites, one in which students are introduced to the processes, equipment, hand tools, materials, and necessary safety procedures related to the art department woodshop. In the other unit in this course, students are taught art preparation techniques which they will encounter both as a student and professional. Offered satisfactory/unsatisfactory only.

2350. Metalsmithing I. 3. Introduces basic technical approaches to fabricating small scale, non-ferrous metals (silver, copper, brass, nickel) including sawing, soldering, filing, drilling, form raising/pressing, texturing, and finishing processes. Investigation into the rich history of metalsmithing as well as innovative contemporary applications – sculpture and as body ornamentation – is fostered. A variety of individual projects in a studio environment alone with critical discussion and presentation addresses aesthetic, conceptual and technical aspects of metalsmithing. *Prerequisite:* ART 1120.

2410. Ceramics I. 3. Introduces ideas about ceramic form through various handbuilding construction techniques. Emphasizes design and conceptual development. Includes glaze application, surface decoration and kiln operation.

2420. Ceramics II. 3. Introduces ideas about ceramic form through wheel-throwing techniques. Emphasizes design and conceptual development. Includes glaze testing, glaze

application, surface decoration and kiln operation. (Normally offered fall and spring semester)

2430. Combined Clay Methods. 3. A basic course in ceramics designed to introduce handbuilding and wheel throwing in one semester. The emphasis will be on developing an understanding of basic clay forming methods; developing surface treatments including slip, glaze and stains with an emphasis on low fire techniques, and understanding electric kiln firing and operation.

2700. Introduction to Museology. 3. [CH◀▶(none)] Explores the historical, cultural, and contemporary roles of museums and preservation institutions in society. Introduces students to the museum professions, collection and exhibition installation strategies, and ethical problems of governance and collection. Field trips to regional collections are included. Cross listed with AMST/ANTH/HIST 2700. *Prerequisite:* WA.

2730. African Creativity and Ritual. 3. [CA,G◀▶(none)] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, anthropology, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with AAST/ANTH 2730.

3002. Special Topics In:. 3. Courses of broad general appeal will be offered from time to time under this title. Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. See current class schedule for topics. *Prerequisites*: ART 2010, Art History I and ART 2020, Art History II.

3005. Drawing III. 3. An advanced drawing course applying the fundamentals of drawing to creative individual problems in figure, still life, and/or landscape composition. Structured yet open assignments, lectures and critiques develop formal, conceptual, expressive, and technical understanding. Course may be repeated for a maximum of 6 credit hours. *Prerequisite:* ART 2000 and 2005. (Offered spring semester).

3052. Life Drawing I. 3. An advanced drawing course working from a life model with an emphasis on composition, monocromatic media, drawing techniques and the skeletal and muscular construction as related to action and proportion in the human figure. Lectures, drawing sessions, and critiques develop formal, conceptual, and technical understanding. *Prerequisite:* ART 2000 and 2005. (Normally offered fall semester)

3112 [2110]. Typography. 3. Examines the use of type, its history, structure and background in reference to the field of graphic design. Closely examines the relationship between typographical layout, concept and expression. *Prerequisites:* ART 2000 and ART 2112. (Offered spring semester)

3120. Graphic Design II. 3. Studies advanced graphic design preparation, idea generation, conceptualization, and critical thinking, from paste-up through production. All work is executed both on and off the computer. Design problems include print and packaging design. Prerequisite: ART 2000 and 3112. (Offered fall semester)

3140. Print Production. 3. Explore the methods, vocabulary, and processes of commercial printing, including: the production and design process, color(ink) selection, duotones, paper selection, photography, diecutting, mailers & mailing regulations, finishing, pre-flighting and pre-press preparation, and communication with the printer. Projects will be focused around solving real-world printing problems. *Prerequisites:* ART 2000, 2122, ART 3112, ART 3120 or concurrent enrollment.

3180. Graphic Design III. 3. Studies specialized and advanced graphic design preparation, idea generation, conceptualization, and critical thinking, from paste-up through production. All work is executed both on and off the computer. Design problems include print and packaging design. History of graphic design and advanced production methods are discussed. *Prerequisites:* ART 2000, 3120, ART 3140.

3210. Painting II. 3 (Max. 6). Investigates various painting techniques to create individual work. Emphasizes contemporary and classical treatment of formal, aesthetic and conceptual creative expression. *Prerequisite:* ART 2000 and 2210.

3250. Watercolor Painting I. 3. Investigates watercolor techniques in the development of creative work. Discussion, application and criticism of contemporary ideas about structure, form and color constitute the main activity. *Prerequisites:* ART 1130, 2000 and ART 2210. (Offered based on sufficient demand and resources)

3260. Illustration I. 3. This is an introductory Illustration course. This primary class objective is to develop conceptual skills through a variety of media traditionally used in fine art illustration and a variety of illustration problems and projects. This class is designed to further your interest in illustration and initiate portfolio development. *Prerequisite:* ART 2000.

3265. Intermediate Photography. 3. Focuses on the production of a fully realized portfolio of images. Students will be guided with a set of conceptual projects towards exploring technical boundaries and potential of photography. Research and readings will lead towards the production of a finished and installed body of work. *Prerequisites:* ART 2255 and ART 2265.

3310. Sculpture: Cast Form I. 3 (Max. 6). Studies of casting processes in sculpture dealing with cold-casting: paper/fabric casting, and resin; metal casting, both non-ferrous and ferrous. Covers wide variety of mold-making techniques, as well as the traditional "lost wax" process, and will focus on finished presentation. Intensive inquiries into ideas of classic and contemporary sculpture are discussed as they relate to casting, as well as advanced research into student idea generation. *Prerequisite:* ART 1110, 1120, 1130, 1310 and 2000. (Offered fall semester)

3320. Sculpture: Mixed Media I. 3 (Max. 6). Studies use of the "found object" as a basic medium for three-dimensional expression. Includes additive processes, as well as discussing the history of the found object, and research focusing on mixed media artists. Processes include cold connection investigation, as well as hot fabrication-welding and forging. *Prerequisite:* ART 1110, 1120, 1130, 1310, and 2000. (Normally offered fall semester of every other year)

3330. Sculpture: Assembled Form I. 3 (Max. 6). Investigates constructed and assembled form as an essential means of sculptural expression. Emphasizes wood construction, assembled metals and mixed media. Utilizes general carpentry techniques, a variety of welding methods (oxyacetylene, arc, M.I.G. and T.I.G.) and other means of assembling materials. Includes investigation of concepts in assemblage and exposure to classic and contemporary forms of assembled sculpture. *Prerequisite:* ART 1110, 1120, 1130, 1310 and 2000. (Offered spring semester)

3345. Special Topics in Sculpture. 3 (Max. 9). Address specific areas of concern relevant to contemporary sculpture practice such as: Installation, Video/Sound manipulation, Kinetic Sculpture, Figurative Modeling, and Fabric/Fiber Fabrication. Assigned projects and reserach specific to the area of study will engage students in the production of artwork related to the topic. Extensive journal/sketchbook, artist research, and critique participation is required. *Prerequisites:* ART 2000.

3350. Metalsmithing II. 3. Introduces intermediate approaches to fabricating small scale, non-ferrous metals including etching, raised forms and silver casting. Historical and innovative contemporary applications – sculptural and body ornamentation-based – is fostered. Individual studio projects along with critical

discussion and presentations address aesthetic, conceptual, and technical aspects of metalsmithing. *Prerequisite:* ART 2000 and 2350.

3410. Advanced Ceramics I. 3. Studies development of ceramic form involving work in handbuilding and wheel techniques. Introduces surface treatment and glaze testing. Emphasizes design and conceptual development. Includes historical research. First semester of a one-year sequence. *Prerequisite:* completion of Foundation Core, ART 2000, ART 2410, ART 2420 and consent of instructor based on portfolio review. (Offered based on sufficient demand and resources)

3420. Advanced Ceramics II. 3. Studies development of ceramic form involving work in handbuilding and wheel techniques. Introduction to surface treatment and glaze testing. Emphasizes design and conceptual development. Includes historical research. Second semester of a one-year sequence. *Prerequisites:* completion of Foundation Core, ART 2000, 2410, 2420, and consent of instructor based on portfolio review. (Offered based on sufficient demand and resources)

3500. Book Arts. 3. Introduction to the history of the book as an object and the traditional crafts associated with book construction through the exploration of the book as a vehicle for artistic expression. A basic knowledge of technical processes pertaining to book construction, a general familiarity with the history of the book and a conceptual exploration of image making will be gained through demonstrations, hands-on studio work, slide lectures, visits to the museum and archives and through assigned readings. *Prerequisite:* ART 2000 and completion of WB or junior standing.

3510. Printmaking I. 3. Investigates and experiments with processes and properties of print media, including intaglio, lithography and relief. Explores ideas and works of traditional and contemporary printmaking. *Prerequisite:* ART 1005 and ART 1110 and 1130 or concurrent registration in ART 1130.

3710. Gender: Humanities Focus. 3. [CH◀▶COM2] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ENGL/WMST 3710. *Prerequisite:* WMST 1080 or ENGL 1010. (Offered once a year)

3720 [2720] Art and Architecture of Medieval Islam. 3. Studies the art and architecture produced by Islamic societies from the time of the Prophet Mohammed to the time of the Crusades (7th-14th centuries CE), and the geographic scope surrounds the Mediterranean Sea, including the Near Middle East, northern Africa, and Spain. *Prerequisites:* USP WA and WB courses.

3760. American Art History. 3. Addresses American art within the continental United States from first European encounters with the New World to 1900. Will investigate painting, sculpture, and architecture, but will also include some photography, prints, and the decorative arts. *Prerequisites*: ART 2020.

4000. Post Baccalaureate Seminar. 1. Enhance and formalize the Post Baccalaureate experience while creating a creative community across artistic disciplines. Students will read and respond to relevent text, discuss pedagogical concerns, critique their creative research, and develop a professional dossier in support of their future career goals. *Prerequisites:* Completion of all BA/BFA degree requirements and acceptance into the Department of Art Post Baccalaureate program.

4005. Drawing IV. 3. An advanced drawing course exploring conceptual, expressive, personal and technical limits of process and media. Individually proposed projects lead to a coherent body of work. Open discussion and structured critiques develop personal and technical understanding. Repeatable for a maximum of 9 credit hours. *Prerequisite:* ART 2000 and 3005.

4010 [4610]. Contemporary Art: Theory and Practice. 3 (Max. 6). [(none)◀▶COM3] Taught from the perspective of a studio artist, this course enables students to situate their art within a theoretical context. Students examin how issues in contemporary art relate to philosophical concerns through reading, discussion, and critique. Emphasis is placed on an interdisciplinary framework through which students can discuss their work. *Prerequisites:* ART 2000, junior standing.

4050. Advanced Drawing. 3. Advanced investigation of various drawing techniques are used to create individual work. Studies contemporary and classical treatment of line, composition and concepts using experimental and traditional treatment of drawing surface and materials. *Prerequisite:* ART 2000 and 3005. (Normally offered spring semester)

4052. Life Drawing II. 3. An advanced drawing course building upon figure construction fundamentals with heavy emphasis on composition, personal expression, wet and dry media, and color with pastels. Lectures, drawing sessions and critiques develop formal, conceptual, expressive and technical understanding. May be repeated for a maximum 9 credit hours. *Prerequisite:* ART 2000 and 3052 (Normally offered spring semester)

4110. Computer Graphics II. 3. Advanced work on current computer graphic design software. Presents graphic design problems to augment working knowledge of the programs. Lab/lecture. Second course in a two semester sequence. *Prerequisite:* ART 2000 and 3120. (Normally offered spring semester)

4120. Senior Portfolio. 3 (Max. 6). Specialized research for the advanced graphic design student who will develop a mature style and sense of design. Problems include print, packaging, and multimedia design while also studying preparation techniques for job applications and professional skills. *Prerequisite:* ART 2000 and 4110. (Normally offered fall semester)

4140. Professional Development in Graphic Design. 3. Explore the methods, vocabulary, and processes of professional development in graphic design including: portfolio production, creation of personal business forms, job searching, interviewing, networking, and personal portfolio website development. Projects are focused around solving one's own real-world graphic design professional problems. *Prerequisite:* ART 2000 and 4120.

4210. Painting III. 3 (Max. 6). Advanced investigation of various painting techniques are used to create individual works. Studies contemporary and classical treatment of forma. Aesthetic and conceptual creative expression. Students work from a proposed course of study and will be self-directed. *Prerequisites:* ART 2000 and 3210.

4250. Watercolor Painting II. 3. Advanced investigation of watercolor techniques in the development of creative work. Discussion, application and criticism of contemporary ideas about structure, form and color constitute the main activity. *Prerequisite:* ART 2000 and 3250. (Offered based on sufficient demand and resources)

4260. Illustration II. 3. This is the second level Illustration course for students who have had ART 3350. Students will continue to develop conceptual skill in creating narrative illustrations for a variety of projects. The majority of the semester will be dedicated to developing a single project: Graphic Novelization or book illustrations. Students will be focusing on character development, narrative arc, and compelling imagery using materials appropriate for their project. *Prerequisite:* ART 3350.

4265. Photography III. 3. An advanced photography class focusing on the production of a fully realized portfolio of images. Students interests will help shape a course dedicated to

providing them with additional technical tools (traditional printing techniques, high level photoshop tools) and readings and discussions designed to push them beyond the comfortable boundaries of their photographic world. *Prerequisites:* ART 2000, ART 3265.

4310 [5310]. Sculpture: Cast Form II. 3 (Max. 6). Advanced exploration of various problems and themes of contemporary sculpture, focusing on the experimental development of personal vision, concepts, and style. Work produced for class is examined in light of historical and recent antecedents through slide discussions, critical reviews, and research projects. Students choose from a wide variety of materials and processes, with emphasis on a cold and hot casting. For students with professional motivation and commitment. *Prerequisite:* ART 2000, 6 hours of 2nd level sculpture and portfolio review by instructor. (Offered based on sufficient demand and resources)

4330. Sculpture: Assembled Form II. 3 (Max. 6). An advanced investigation in constructed and assembled forms as an essential means of sculptural expression. Focus is on the experimental development of personal vision, concepts, and style using fabrication methods in wood, metal, and found object manipulation. Work produced for class is examined in light of historical and recent antecedents through slide discussions, critical reviews and research projects. For students with professional motivation and commitment. *Prerequisites:* ART 2000, 6 hours of Sculpture courses including ART 3330 and portfolio approved by instructor.

4355. Metalsmithing III. 3. Introduces advanced fabrication and surface techniques which build on skills developed in Metalsmithing I and II. Students propose a body of work for the semester based on individual aesthetic, conceptual and technical interests. Professional practices including resume writing, documenting, presenting and exhibiting artwork are addressed at this advanced level. *Prerequisite:* ART 2000 and 3350.

4360. Metalsmithing: Special Topics. 3 (Max 9). Focus is on specific techniques in the field of Metalsmithing for the semester's duration to allow for an in-depth exploration rotating between topics such as Grandulation, Sliver Clay, Silver Casting, and Cold Connections/Mechanisms. Assigned projects complement students' proposed body of sculptural or body ornamentation-based work.
Prerequisite: ART 2000 and 2350.

4400. Internship. 1-3 (Max. 9). Allows students to bridge the gap between theoretical problems solved in the classroom and the real work world. Students are placed in a setting where they perform duties similar to a working environment. Specific arrangements are made through the major area adviser. Students are evaluated at mid-term and finals. Minimum of three contact hours of internship per week for a semester equals an hour course credit. *Prerequisite:* ART 2000 and 12 hours in the major area. (Normally offered fall, spring and summer)

4410. Ceramics Workshop I. 3. Studies and develops traditional and experimental forms. Applies wide range of three-dimensional decorative and conceptual approaches. Studio work is independently based on an individually directed theme of exploration. Historical and technical research. First semester of a one-year sequence. *Prerequisite:* ART 2000 and 6 hours of ART 3320, 3410. (Offered fall semester of every other year)

4420. Ceramics Workshop II. 3. Continued study and development of traditional and experimental forms. Applies wide range of three-dimensional decorative and conceptual approaches. Studio work is independently based on an individually directed theme of exploration. Historical and technical research. Second semester of a one-year sequence. *Prerequisite:* ART 2000 and 4410. (Offered spring semester of every other year)

4430. Lo-Tech Ceramics. 3. Explores elementary forming, decorating and firing processes developed by various pottery cultures. Examines basic geology, clay prospecting, kiln design and construction. Includes historical overview and contemporary work survey. Dual listed with ART 5430. *Prerequisite:* ART 2000 and 12 hours of humanities/GED/USP. (Offered based on sufficient demand and resources)

4510. Printmaking II. 3 (Max. 6). Continues development of printmaking skills gained in introductory printmaking and focuses in particular on the relationship between process and image. Through demonstrations and studio work, slide lectures, visits to the museum and archives, and readings and discussions, technical processes will be refined, print history will be further explored and image making will continue to be developed. *Prerequisite:* completion of Foundation Core, ART 2000 and 3510.

4520. Advanced Printmaking II : Exhibition and Professional Preparation. 3 (Max. 6). Preparation to continue as exhibiting artists. Students further develop their work as artist-printmakers in preparation for a solo or two-person exhibition at the completion of the semester. Presentation and execution of slides, resume, artist statement, locating opportunities and correspondence will be developed throughout the term. *Prerequisites:* ART 2000, 4510 and portfolio approval from instructor.

4600. Professional Practices and Strategies. 3 (Max. 6). [(none)◀▶COM3] This course offers information to junior/ senior level art majors in regards to: finding jobs in art, finding/applying for exhibition opportunities, applying/finding grant opportunities, furthering education including finding/applying for a Masters in art, and overall life possibilities after the completion of an undergraduate art degree. Writing is expected in the form of cover letters, resumes, artist statements, and project proposals. *Prerequisites*: 6 hours in Art and junior standing.

4620. Problems in Art. 1-3 (Max. 6). Special, current studio problems for advanced students. *Prerequisite:* 6 hours in art. (Offered based on sufficient demand and resources)

4635. Preparation for International Study in Art. 1. An introductory course to international study in art. Specifically focusing on various issues of culture, language, history, art and archeology the student may encounter while traveling abroad. Also provides time for the coordination of practical issues of travel, necessary documentation and insurance. Issues specific to the country of travel will also be addressed. *Prerequisites*: 6 hours in Art, WA, junior standing.

4640. Art and Ecology. 3. Focuses on the intersection of contemporary art with ecological concerns. Readings present philosophical, historical and cultural aspects of the art/ecology relationship; students reflect and question their own beliefs. Examples of art/artists are reviewed as well as how ecological artwork is developed. Students propose solutions and/or create art in, out of, or about the environment; local sites are encouraged. *Prerequisite:* 6 hours of art and/or American studies.

4650. International Study of Art. 3. [G◀▶(none)] Students will respond creatively to the historical, cultural and aesthetic experience in the country of travel and will use journaling, drawing, and collection of visual material to continue a more in-depth response upon return. Course sections will vary regarding structure/context. All sections will include studio and/or art historical curriculum. *Prerequisite:* ART 4635.

4670. Completion International Study in Art. 1. A completion course to international study in art. Students will compile and complete their response to their experiences encountered in the culture, language, history, art and archeology while traveling abroad. Concise structured critiques will provide time for discussion and digestion of their individual and shared experiences. When possible an

exhibition of creative work will be included as a culmination of the program. *Prerequisite:* ART 4650.

4710. Art of the Medieval World. 3. Studies unique qualities of art of this intriguing era of transition between classical and renaissance times. Dual listed with ART 5710. *Prerequisite:* ART 1010 or 2010. (Normally offered fall semester of every other year)

4720. 15th Century Renaissance Art. 3. Explores artistic developments of the 15th century, primarily in Italy, in order to appreciate the relationships between artistic production and innovation and other aspects of the social and cultural environment. *Prerequisite:* ART 2010, 2020. (Normally offered spring semester)

4730. 19th Century European Art. 3. Studies 19th-century European painting, prints, and literature, covering Neoclassicism, Romanticism, Realism, Impressionism, and Post-Impressionism. Artists include Elisabeth Vigee-Lebrun, court portraitist; Mary Cassatt and Edgar Degas, famed Impressionists; Edouard Manet, controversial and troubled; Honore Daumier, jailed for incendiary political cartooning; and the eccentric Paul Gauguin and Vincent Van Gogh. *Prerequisite:* ART 2020. (Normally offered fall semester)

4740. 20th Century European Art. 3. Studies 20th-century European art from 1900 to 1945. Covers the 2-D and 3-D art of Expressionism, Cubism, the Bauhaus, Dada and Surrealism, and other important movements in the first half of the 20th century. *Prerequisites*: ART 2010 and 2020. (Normally offered spring semester)

4760. American Art in the 20th Century. 3. Studies 2-D and 3-D art in 20th-century America. Topics will include art of the Gilded Age, the Jazz Age, the Progressive Era, the Great Depression, the World Wars, etc. Styles include American Impressionism, the Ashcan School, American Modernism, Social Realism, the Harlem Renaissance, Regionalism, Abstract Expressionism, and more. *Prerequisites:* ART 2010 and 2020. (Normally offered spring semester of every other year)

4770. Contemporary Arts Seminar. 3 (Max. 9). Studies the major movements in the visual arts from 1945 to the present. Investigate major theories, stylistic movements, and key artists since WWII with a special focus on the increasing globalization of art during this era. *Prerequisites*: ART 2010 and 2020. (Normally offered fall semester of every other year)

4780. History of Women Artists. 3. Studies documented influence of women as subjects, makers and receivers of art. Emphasizes careers and works of women over a wide range of times and places and under a variety of social circumstances. Greatly emphasizes developments in the 20th century. Cross listed with WMST 4780. *Prerequisite:* ART 2010 or ART 2020 or 3 hours of WMST courses; and WB. (Normally offered fall semester)

4790. Art Seminar. 1-3 (Max. 9). [(none)◀▶COM3] Special topic in art history and criticism for advanced students. *Prerequisite:* 6 hours in art history. (Offered based on sufficient demand and resources)

4830. Victorian Women's Lives: Their Art, Literature and Culture. [CA◀▶(none)] Interdisciplinary approach to study of women's issues in art. Uses literary/cultural texts to reinforce/contradict and/or expand/enlarge the art historical basis. Topics include domestic goddess, working women, prostitution, education, marriage and divorce. Cross listed with ENGL/WMST 4830. *Prerequisite:* Either ART 2020 or WMST/ENGL 1080. (Normally offered every sixth semester)

4975. Independent Study and Research. 1-3 (Max. 6). Research options in all creative areas. Students work independently and provide demonstrated ability and background knowledge to carry out self-directed research or creative activity in the research area. Arrangements regarding curricular obligations and meeting times are made with the instructor in advance. *Prerequisites:* ART 2000 and 12 hours of art in research area and prior consent of instructor. (Offered fall, spring and summer)

5430. Lo-Tech Ceramics. 3. Exploration of elementary forming, decorating, firing processes developed by various pottery cultures. Examination of basic geology, clay prospecting, kiln design and construction. Includes historical overview and contemporary survey. Dual listed with ART 4430. *Prerequisite:* 12 hours of humanities/GED/USP.

5650. Art and Ideas. 3. Students in this seminar explore the literatures of art. Each seminar has a reading list and a thematic structure. Major critical papers are written during the course of the seminar. Required for M.A. and M.A.T. program Plan B option. *Prerequisite:* 30 hours in art.

5660. Investigations in Art. 1-5 (Max. 10). Research options in all the creative areas. The graduate student is expected to work independently and should provide demonstrated ability and background knowledge to carry out self-directed research or creative activity in the area to be studied. Arrangements regarding curricular obligations and meeting times must be contracted with the instructor in advance of enrollment. *Prerequisite:* completion of all 5000-level course work in the area of investigation.

5670. Term Creative Project. 1-5 (Max. 15). For M.F.A. candidates only; professional creative achievement in painting, drawing, printmaking, ceramics, or sculpture, leading to presentation of graduate exhibition. Typically, student will consult a single professor in major area for crediting this course. *Prerequisite:* admission to candidacy for M.F.A. degree and consent of instructor.

5710. Medieval Art. 3. Studies the unique qualities of art of this intriguing era of transition between classical and renaissance times. Dual listed with ART 4710. *Prerequisite:* ART 1010, 2010.

5740. 20th Century European Art. 3. Studies European art from 1900 to present. Dual listed with ART 4740. *Prerequisite:* ART 2010 and 2020, consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrolled in a graduate degree program.

5990. Internship. 1-12. (Max 24). *Prerequisite:* graduate standing.

Astronomy and Astrophysics

The Bachelor of Science degree in astronomy and astrophysics is administered by the Department of Physics and Astronomy faculty. Please see the Physics and Astronomy listing in this *Catalog* for more information.

Biology

Biology Degree

The Bachelor of Science degree in Biology is designed to provide a thorough foundation in biology and other supporting areas of science and mathematics, while providing maximum flexibility and student choice. The degree program is administered by the Department of

Botany. Upon completion of the core requirements for the major (see list at www.uwyo.edu/biology), specific courses to complete the major will vary according to a student's interests and career plans and may be selected from a variety of departments on campus in consultation with a student's faculty adviser.

Department of Botany, 3165
114 Aven Nelson Building, 766-2380
FAX: (307) 766-2851
Web site: www.uwyo.edu/botany

Freshman and Sophomore Years

Students take introductory courses in biology, chemistry, physics, and mathematics. These courses provide the foundation for more advanced work in upper division biology courses and contribute to a more comprehensive understanding of biological processes.

Junior Year

Students take courses in genetics, ecology, evolution and statistics. Students should consult the biology degree web site for the list of requirements (www.uwyo.edu/biology) and meet with their adviser regularly to assess progress toward meeting all degree requirements.

Senior Year

In consultation with their advisers, students select advanced courses in the biological sciences that they find particularly interesting. Advisers maintain lists of suggested courses that include offerings from a variety of departments at UW.

Undergraduate Minor

A minor in biology is offered. For details, consult the web site www.uwyo.edu/biology.

Teacher Education

Students who plan to teach in secondary schools should consult the College of Education section.

Botany

114 Aven Nelson Building, 766-2380
FAX: (307) 766-2851
Web site: www.uwyo.edu/botany
Department Head: David G. Williams

Professors:
GREGORY K. BROWN, B.S. Colorado State University 1973; M.S. Arizona State University 1978; Ph.D. 1980; Professor of Botany 1997, 1985.
INGRID C. BURKE, B.S. Middlebury College 1980; Ph.D. University of Wyoming 1987; Professor of Botany 2008; Director, Haub School for Environment and Natural Resources and Ruckelshaus Institute for Environment and Natural Resources.
BRENT E. EWERS, B.S. Colorado State University 1995; M.S. Duke University 1997; Ph.D. 1999; Professor of Botany 2014, 2002.
RONALD L. HARTMAN, B.S. Western Illinois University 1967; M.S. University of Wyoming 1971; Ph.D. University of Texas 1976; Professor of Botany 1988, 1977.
WILLIAM LAUENROTH, B.S. Humboldt State University 1968; M.S. North Dakota State University 1970; Ph.D. Colorado State University 1973; Professor of Botany 2008.
STEVEN L. MILLER, B.S. University of Wyoming 1979; M.S. Virginia Polytechnic Institute and State University 1982; Ph.D. 1985; Professor of Botany 2002, 1990.
CYNTHIA WEINIG, B.A. (Hons.) Brown University 1991; Ph.D. Indiana University; Professor of Botany and Molecular Biology 2013, 2007.
DAVID WILLIAMS, B.A. The University of Texas, Austin 1985; M.S. Texas A&M University 1988; Ph.D. Washington State University 1992; Professor of Botany 2009, 2003.

Associate Professors:
ALEX BUERKLE, B.A. (Hons.) University of Missouri 1990; Ph.D. Indiana University 1997; Associate Professor of Botany 2010, 2004.
DANIEL B. TINKER, B.S. Ft. Lewis College 1993; M.S. University of Wyoming 1996; Ph.D. 1999; Associate Professor of Botany 2010, 2005.
NAOMI WARD, B.Sc. (Hons.) University of Queensland 1993; Ph.D. University of Warwick 1997; Associate Professor of Molecular Biology and Botany 2013, 2007.

Assistant Professors:
ELLEN D. CURRANO, B.Sc. (Hons.) University of Chicago 2003; Ph.D. Pennsylvania State University 2008; Assistant Professor of Botany 2014.
CATHERINE E. WAGNER, B.A. (Hons.) Whitman College 2004; Ph.D. Cornell University 2011; Assistant Professor of Botany 2015.

Senior Lecturers:
KENNETH L. DRIESE, B.S. University of Virginia 1981; M.S. University of Wyoming 1992; Ph.D. 2004; Senior Lecturer in Botany 2011, 2002.
MARK E. LYFORD, B.A. St. Olaf College 1993; M.S. University of Wyoming 1995; Ph.D. 2001; Senior Lecturer in Botany 2014, 2005; Director of Life Sciences Program.

Assistant Lecturers:
CHRISTOPHER NORTH, B.S. Virginia Polytechnic Institute and State University 2002; M.S. Eastern Illinois University 2005; Assistant Lecturer in Botany 2014.
BRIANNA WRIGHT, B.S. University of Wisconsin-Stevens Point 2005; M.S. University of Wyoming 2007; Assistant Lecturer in Botany 2012, 2010.

Senior Research Scientist:
RAMESH SIVANPILLAI, B.Sc. Bharathiar University 1987; M.Sc. Cochin University of Science and Technology 1990; M.Phil. Bharathiar University 1992; M.S. University of Wisconsin, Green Bay 1995; Ph.D. Texas A&M University 2002; Senior Research Scientist 2012.

Associate Research Scientist:
BURRELL E. NELSON, B.A. Andrews University 1971; M.A. University of Wyoming 1974.

Professors Emeriti:
Martha Christensen, Dennis H. Knight, Stephen T. Jackson, William A. Reiners

Botany is the study of plants and their relationship to human affairs. The science is fundamental to food, fiber and pharmaceutical production; to the management of landscapes for beauty, recreation, forest products and forage; and to the protection of landscapes against pollution and other abuses. The botanist is concerned with the diversity and classification of plants and fungi, their structure at both the macroscopic and microscopic levels, and their physiology, ecology and genetics and evolutionary relationships.

Courses in botany have been developed to meet the needs of the following groups of students: those who desire a general knowledge of the subject for its cultural value; those specializing in areas which require a background in plant biology; and those selecting botany or biology as a major.

Undergraduate Degrees

Biology

The Biology major is designed for students interested in obtaining a broad education in biological sciences. It enables students to combine courses in biology, botany, zoology, physiology, and other biological sciences to meet the requirements of the major. On completion of the core requirements for the major, specific courses selected to complete the major may vary according to students' interests and are worked out by consultations between student and adviser. The requirements for a bachelor's

degree are MATH 1400, 1405 (or 1450), 2200; STAT 2050 or 2070; CHEM 1000 or 1020, CHEM 2300; COSC 1010; MOLB 3610; PHYS 1110, 1120; LIFE 1010, 2022, 2023; MOLB/MICR 2021; LIFE 3050, 3400, 3500, 3600.

See www.uwyo.edu/biology/ for more information.

Botany

Students majoring in botany may pursue a B.S. degree and are required to take the following: BOT 3000, 4640, or 4680, 4700, 4730, and 3 additional credits in BOT (excluding BOT 4100 and 4550); LIFE 1010, 2022, 2023, 3400, 3410, 3050, 3600; MICR/MOLB 2021; or the equivalents of these courses. In addition, majors must take CHEM 1020, 1030, and 2300 or 2320; MATH 2200 or STAT 2050 or 2070; PHYS 1110 or 1310, and 1120 or 1320.

See www.uwyo.edu/botany/ for more information.

The department offers an undergraduate environment and natural resources (ENR) concentration which provides botany students both academic and practical experience interacting with students from other ENR-related disciplines. See the School of Environment and Natural Resources section in this *Catalog* for more information.

Undergraduate Minor

A minor is offered by the Department of Botany. Further information may be obtained by contacting the department, or at www.uwyo.edu/botany/.

Teacher Education

Botany collaborates with the College of Education in offering the Natural Sciences Program, which provides training in science and mathematics for prospective K-12 teachers.

Graduate Study

The Department of Botany offers graduate programs leading to the master of science and the doctor of philosophy degrees in botany and the master of science degree in botany/water resources.

Program Specific Admission Requirements

The program requires a composite minimum score on the verbal and quantitative sections of the GRE of: 900 (M.S.) and 1000 (Ph.D.).

A minimum GPA of 3.0 on previous coursework is also required.

Program Specific Degree Requirements

Regardless of field of specialization, all candidates will be held responsible for basic information in the following areas: genetics, physiology, morphology, and evolutionary and environmental botany. A knowledge of chemistry (including organic and elementary biochemistry), physics, calculus, and statistics may be required.

A minimum GPA of 3.0 must be maintained. Any course in which a C (or below) or U is obtained cannot be counted toward the degree requirement.

Participation in seminars will be required of all candidates during their residence at the University of Wyoming.

Master's Program

Requirements for this degree are 26 semester hours of courses approved by the student's committee plus four hours of BOT 5960, Thesis Research.

Doctoral Program

In addition to the minimum requirements set forth in this Catalog, the Department of Botany may require that a student demonstrate skills in two peripheral areas. This decision is made for individual cases by the major professor and graduate committee. These could include foreign languages, statistics, or computer science. In some cases, additional skills may be required.

Botany (BOT)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

3000. Plant Form and Function. 4. Integration of basic vascular plant anatomy, morphology, physiology within the contexts of modern evolutionary and ecological theory. Students receive in depth exposure to fluid flow, energetics, development, growth, general metabolism, and structure, and functions for plant cells, tissue and organs. *Prerequisite:* LIFE 2023 or LIFE 2022 or equivalent; and minimum of 4 credits of college chemistry. (Normally offered spring semester)

3100. Plants and Civilization. 3. [L◀▶(none)] An overview of ways plants have and will continue to influence human civilizations. Botanical origins and socio-economic impacts of deforestation, plant fibers, stimulants, drugs and medicinals, wood products, foods and other plant-derived resources is discussed. Students write short papers building skills in research, critical thinking, argumentation, and citation strength. *Prerequisite:* LIFE 1000 or 1010. (Normally offered spring semester)

3150. Survey of Remote Sensing Applications. 3. Provides an introduction to remote sensing with a survey of applications in different fields. It includes a brief introduction to fundamentals of remote sensing and surveys applications of aerial photography, multi-and hyperspectral, active and thermal remote sensing, and global change remote sensing. Cross listed with GEOG 3150. *Prerequisites:* completion of a USP QA course and one science course with laboratory.

3600. Plant Diversity and Systematics. 4. A broad introduction to modern vascular plant systematics, with emphasis on identification, classification, nomenclature, speciation, adaptation, convergence, and phylogenetic methods. Lab emphasizes learning major flowering plant families and genera, major invasive species, use of keys and manuals, and plant collection, with a Wyoming and Rocky Mountain focus. *Prerequisite*: LIFE 2023, or equivalent.

4001. Modeling the Earth System. 4. Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with ATSC/ESS/GEOL. *Prerequisites:* MATH 2205 or equivalent and [ESS 2000 or GEOL 2000].

4040 [G&R 4040]. Conservation of Natural Resources. 3. [CS◀▶(none)] Geographically analyzes conservation of natural and human resources, as well as political, social and ethical ramifications of our environmental policy. Cross listed with ENR/GEOG 4040. *Prerequisite:* 6 hours of geography or ENR.

4100. Scientific Communication. 3. [WC,L◀▶COM3] This course is designed to provide intensive instruction in written, oral, and digital communication for zoology and physiology, biology, and botany majors. The course teaches students to communicate and execute research using practices common in the biological sciences. Cross listed with ZOO 4100. *Prerequisites:* COM1, COM2, and concurrent or prior upper division BOT, ZOO, or LIFE course.

4111. Remote Sensing of the Environment. 4. Combined lecture and laboratory course introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applica-

tions. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with BOT 5111; cross listed with GEOG 4111. *Prerequisites:* QA and one science course with lab.

4130. Applied Remote Sensing for Agricultural Management. 3. Address principles and applications of remote sensing to crop and rangeland management. Provides an overview of remote sensing concepts and applications pertaining to crops, shrubs and range vegetation. In laboratory, students will learn to process remotely sensed data for mapping and monitoring crop and rangelands. Cross listed with RNEW/AECL 4130; dual listed with BOT 5130. *Prerequisites:* QA course and 9 credit hours in student's major field and junior/senior standing.

4211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Cross listed with GEOG 4211; dual listed with BOT 5211. *Prerequisite:* BOT/GEOG/GEOL 4111.

4280. Paleobotany. 4. An examination of the ecology and evloution of land plants throughout Earth history that emphasizes the profound impact plants have had on Earth's surface and atmosphere. Through a combination of lecture, discussion, and laboratory, the course will explore fossilized plant communities, their ecological properties, and effects of major environmental upheavals. Dual listed with BOT 5280. Cross listed with GEOL 4280. *Prerequisite:* LIFE 1010 or GEOL 1100.

4330. Cultivation of Edible Mushrooms. 3. An in-depth study of mushroom cultivation emphasizing a hands-on approach. Students learn about the history and biology of edible and medicinal mushrooms as well as about tissue culture, spawn generation techniques, substrate preparation, inoculation techniques, and strategies for maximizing yield. *Prerequisite:* LIFE 2023.

4360. Mushrooms of the Rocky Mountains. 3. A broad introduction to the biology of mushrooms, with emphasis on identification, ecology, and safety for consumption. Lab emphasizes learning major mushroom families and genera and their features, use of keys and manuals, and mushroom collections with a Wyoming and Rocky Mountain focus. *Prerequisites:* LIFE 2023 or equivalent.

4395. Symbiosis. 4. Symbiosis, the living together of unlike organisms, encompasses mutually beneficial to reciprocally detrimental interactions. The course examines conditions required for establishment and maintenance of important symbioses including mycorrhizae, lichens, endophytes, nitrogen-fixing and endosymbiotic bacteria, fungal/insect interactions, and fungal pathogens. Symbioses in forest ecosystems will be emphasized. Dual listed with BOT 5395. *Prerequisites:* LIFE 2022 or LIFE 2023, and LIFE 3400.

4420. Conservation Biology. 3. Addresses the broadest environmental issues facing society (habitat loss, invasion, overexploitation) and the mechanisms driving them, with particular attention to the Intermountain West. Through computer exercises, students also learn how to evaluate conservation efforts and make management recommendations. Cross listed with ENR/ZOO 4420. *Prerequisites:* LIFE 3400 and one of the following: ENR 3500, STAT 2050, or STAT 2070.

4550. Computational Biology. 4. Introduces concepts and skills that are generally applicable to computational analysis of biological questions. Content is motivated by applied projects that require basic computer programming for analysis. Two computer languages are introduced and utilized. Dual listed with BOT 5550. *Prerequisite:* MATH 2200 or STAT 2050 or equivalent; LIFE 1010 or equivalent.

4640. Flora of the Rocky Mountains. 3. Field course. Acquaints students with the flora of the surrounding region. Emphasizes field identification and collection from plant communities encompassing a wide range of environments, such as grasslands, forests and alpine tundra. *Prerequisite:* LIFE 2023. (Normally offered summer session)

4664. Special Topics in Evolution. 1-4 (Max. 6). Advanced topics in evolutionary biology are engaged by studying primary research and topical synthesis in the current literature. Dual listed with BOT 5664. *Prerequisite:* LIFE 3500 or equivalent.

4680. Taxonomy of Vascular Plants. 4. A study of classification principles, nomenclature rules and systematic botany literature. Plants of the Rocky Mountain region are used primarily as examples, but the course gives a comprehensive view of the characteristics and relationships of the principal plants families. Dual listed with BOT 5680. *Prerequisite:* LIFE 2023. (Normally offered spring semester)

4700. Vegetation Ecology. 4. Reviews the ecology of major vegetation types, emphasizing patterns of vegetation distribution, vegetation-environment relationships, succession, the effect of fire and management decisions, and methods of vegetation analysis. Dual listed with BOT 5700. *Prerequisite:* LIFE 3400. (Normally offered fall semester)

4730. Plant Physiological Ecology. 4. Acquaints advanced students with environmental factors which affect the establishment and growth of plants. Emphasizes adaptive mechanisms. Dual listed with BOT 5730; cross listed with RNEW 4730. *Prerequisites:* one course in physiology and one course in ecology. (Normally offered spring semester)

4745. Terrestrial Ecosystem Ecology. 3. Advanced course examines fundamental ecosystem functions and their relationship to ecosystem structure using a systems approach. We study cycles of carbon, water and nutrients through ecosystem components with an emphasis on interactions among plants, soil, and the atmosphere. Current readings focus on responses of terrestrial ecosystems to global climate change and human disturbance. Dual listed with BOT 5745; cross listed with ECOL 5745. *Prerequisite:* 1 course in ecology.

4775. Forest Ecology. 4. Integrative study of the structure, function, and ecological diversity of forested ecosystems, and the physical factors that influence this diversity, including emergent properties of energy flow and nutrient cycling. Special emphasis is given to understanding forest disturbances and succession, and implications for impacts of management and sustainability are discussed throughout. Dual listed with BOT 5775; cross listed with RNEW 4775. *Prerequisite:* LIFE 3400. (Normally offered fall semester of odd-numbered years)

4780. Biogeochemistry. 4. A comprehensive treatment of biogeochemistry with emphasis on biogenic elements and biological processes. Reviews occurrence of elements, their behavior in the biosphere, and how their cycles are affected by humans. Dual listed with BOT 5780. *Prerequisite:* a course in organic chemistry.

4790 [4710]. Special Topics in Ecology. 1-3 (Max. 6). Acquaints students with various topics not covered in regular courses. Emphasizes recent developments appearing in journal literature. Dual listed with BOT 5790. *Prerequisite:* two courses in ecology. (Normally offered both semesters)

4965. Undergraduate Research in Botany. 1-10 (Max. 10). Undergraduate research or study in botany done under the guidance of a Botany Faculty Member. Encouraged to present their research at local, regional, or national scientific meetings, and, when appropriate,

submit a manuscript for publication. *Prerequisites*: LIFE 2023, undergraduate status in good academic standing; consent of a botany faculty research mentor. (Offered fall, spring and summer)

4970. Internship. 1-12 (Max. 12). Provides undergraduate students with academic credit for approved work experiences in the fields of botany and biology. Must be arranged in consultation with a botany faculty member and the work supervisor. Offered S/U only. *Prerequisites:* junior or senior standing, 3.0 GPA, declared major in botany or biology, and approval by a botany faculty member and work supervisor.

5000. Graduate Seminar. 1-3 (Max. 6). Selected topics on current research in the botanical sciences. Offered satisfactory/unsatisfactory only. *Prerequisite:* 15 hours of botany or biology.

5060. Fundamental Concepts in Evolution. 3. Explores fundamental concepts in evolutionary biology including evolutionary ecology, population genetics, and speciation with an emphasis on both theoretical frameworks and practical applications. Discussion included. Cross listed with ECOL/ZOO 5060. *Prerequisite:* graduate student in good standing.

5111. Remote Sensing. 4. Introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applications. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with BOT 4111; cross listed with GEOG 4111/5111. *Prerequisites:* QA and one science course with laboratory.

5130. Applied Remote Sensing for Agricultural Management. 3. Address principles and applications of remote sensing to crop and rangeland management. Provides an overview of remote sensing concepts and applications pertaining to crops, shrubs and range vegetation. In laboratory, students will learn to process remotely sensed data for mapping and monitoring crop and rangelands. Dual listed with BOT 4130; cross listed with RNEW 5130. *Prerequisites:* QA course and 9 credit hours in student's major field and junior/senior standing.

5150. Research in Remote Sensing. 1-6 (Max. 6). Independent research into problems on the remote sensing of vegetation using satellite technology. *Prerequisite:* graduate standing and consent of instructor.

5211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Dual listed with BOT 4211; cross listed with GEOG 5211. *Prerequisite:* BOT/GEOG 4111.

5280. Paleobotany. 4. An examination of the ecology and evloution of land plants throughout Earth history that emphasizes the profound impact plants have had on Earth's surface and atmosphere. Through a combination of lecture, discussion, and laboratory, the course will explore fossilized plant communities, their ecological properties, and effects of major environmental upheavals. Dual listed with BOT 4280. Cross listed with GEOL 5280. *Prerequisite:* LIFE 1010 or GEOL 1100.

5320. Research in Mycology. 1-3 (Max. 6). *Prerequisite:* graduate standing or consent of instructor.

5395. Symbiosis. 4. Symbiosis, the living together of unlike organisms, encompasses mutually beneficial to reciprocally detrimental interactions. The course examines conditions required for establishment and maintenance of important symbioses including mycorrhizae, lichens, endophytes, nitrogen-fixing and endosymbiotic bacteria, fungal/insect interactions, and fungal pathogens. Symbioses in forest ecosystems will be emphasized. Dual listed with BOT 4395. *Prerequisites:* LIFE 2022 or LIFE 2023, and LIFE 3400.

5420. Research in Physiology. 1-6 (Max. 6). *Prerequisite:* graduate standing and consent of instructor.

5480. Spatial Information Sciences Seminar. 1. There are many earth science technologies, remote sensing, GIS and GPS. Synergism among these technologies increase the range of solutions for research and management. This course is a forum for presentation of these solutions or questions requiring solutions. Cross listed with GEOL 5480. *Prerequisite:* a course in remote sensing, GIS, GPS, and graduate standing.

5550. Computational Biology. 4. Introduces concepts and skills that are generally applicable to computational analysis of biological questions. Content is motivated by applied projects that require basic computer programming for analysis. Two computer languages are introduced and utilized. Dual listed with BOT 4550. *Prerequisites:* MATH 2200 or STAT 2050 or equivalent; LIFE 1010 or equivalent.

5610. Research in the Taxonomy of Vascular Plants. 1-6 (Max. 6). The University of Wyoming is especially well equipped for research on the classification of native plants. The Rocky Mountain Herbarium offers an abundance of material for study and the library is especially rich in taxonomic literature. Monographic work may be done on an assigned genus or on the plants of a limited area. Cytological, anatomical, and biochemical techniques may be employed in the solution of certain problems. *Prerequisite:* graduate standing and consent of instructor.

5650. Readings in Plant Systematics. 1 (Max. 6). Centered on readings involving selected topics in the current plant systematics literature. *Prerequisite:* BOT 4680.

5660. Plant Evolution. 2. Designed to acquaint graduate students with theories concerning the processes of plant evolution. *Prerequisite:* LIFE 3050.

5664. Topics: Evolution. 1-4 (Max. 12). Advanced topics in evolutionary biology are engaged by studying primary research and topical syntheses in the current literature. Dual listed with BOT 4664. *Prerequisite:* LIFE 3500 or equivalent.

5665. Research in Evolutionary Biology. 1-6 (Max. 6). *Prerequisites:* graduate standing and consent of instructor.

5670. Phylogeny of Flowering Plants. 2. Covers trends in the evolution of flowering plants. *Prerequisite:* BOT 4680.

5680. Plant Taxonomy. 4. Detailed work in the principles of classification, rules of nomenclature, and literature of systematic botany. The plants of the Rocky Mountain region are used primarily as examples, but the course gives a comprehensive view of the characteristics and relationships of the principal families of vascular plants. Dual listed with BOT 4680. *Prerequisite:* LIFE 2023.

5690. Special Topics in Systematics. 1-4 (Max. 12). Designed to acquaint students with various topics not covered in regular courses. Emphasis is placed on recent developments in the journal literature. *Prerequisite:* BOT 4680 or 5680 or equivalent.

5700. Vegetation Ecology. 4. The ecology of major vegetation types, with emphasis on patterns of vegetation distribution, vegetation-environment relationships, succession, the effect of fire and management decisions, and methods of vegetation analysis. Dual listed with BOT 4700. *Prerequisite:* LIFE 3400.

5710. Research in Ecology. 1-6 (Max. 6). *Prerequisite:* graduate standing and consent of instructor.

5720. Research in Physiological Ecology. 1-6 (Max. 6). *Prerequisite:* graduate standing and consent of instructor.

5730. Plant Physiological Ecology. 4. Acquaints advanced students with environmental factors which affect the establishment and growth of plants. Emphasizes adaptive

mechanisms. Lecture with inclusive hands-on laboratory. Dual listed with BOT 4730; cross listed with RNEW 5730. *Prerequisite:* one course in ecology and one in physiology.

5745. Terrestrial Ecosystem Ecology. 3. Advanced course examines fundamental ecosystem functions and their relationship to ecosystem structure using a systems approach. Study cycles of carbon, water and nutrients through ecosystem components with an emphasis on interactions among plants, soil, and the atmosphere. Current readings focus on responses of terrestrial ecosystems to global climate change an human disturbance. Dual listed with BOT 4745; cross listed with ECOL 5745. *Prerequisite:* one course in ecology.

5750. Seminar in Ecophysiology. 1-3 (Max. 8). *Prerequisite:* 1 course in physiology and 1 course in ecology.

5775. Forest Ecology. 4. Integrative study of the structure, function, and ecological diversity of forested ecosystems, and the physical factors that influence this diversity, including emergent properties of energy flow and nutrient cycling. Special emphasis is given to understanding forest disturbances and succession, and implications for impacts of management and sustainability are discussed throughout. Dual listed with BOT 4775; cross listed with ECOL/RNEW 5775. P*rerequisites:* LIFE 3400.

5780. Biogeochemistry. 4. A comprehensive treatment of biogeochemistry with emphasis on biogenic elements and biological processes. Reviews occurrence of elements, their behavior in the biosphere, and how their cycles are affected by humans. Dual listed with BOT 4780. *Prerequisites:* a course in organic chemistry.

5790. Special Topics in Ecology. 1-3 (Max. 6). Designed to acquaint advanced students with various topics not covered in other courses. Emphasis is placed on recent developments appearing in the journal literature. Dual listed with BOT 4790. *Prerequisite:* two courses in ecology.

5900. Practicum in College Teaching. 1 - 3. (Max 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrolled in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Graduate level course designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrolled in a graduate level degree program.

Chemistry

403 Physical Sciences Building, 766-4363
FAX: (307) 766-2807
Web site: www.uwyo.edu/chemistry
Department Head: David T. Anderson

Professors:

DAVID T. ANDERSON, B.S. George Washington University 1987; Ph.D. Dartmouth College 1993; Professor of Chemistry 2012, 2000.

EDWARD L. CLENNAN, B.S. University of Wisconsin-River Falls 1973; Ph.D. University of Wisconsin-Madison 1977; Professor of Chemistry 1989, 1979.

BRUCE A. PARKINSON, B.S. Iowa State University 1972; Ph.D. California Institute of Technology 1977; Professor of Chemistry 2008.

DEAN M. RODDICK, B.S. University of California-Berkeley 1979; Ph.D. California Institute of Technology 1984; Professor of Chemistry 1997, 1986.

Associate Professors:

MILAN BALAZ, M.S. Comenius University 1999; Ph.D. Université Louis Pasteur 2003; Associate Professor of Chemistry 2014, 2008.

FRANCO BASILE, B.S. University of Wisconsin-Eau Claire 1986; Ph.D. Purdue University 1992; Associate Professor of Chemistry 2009, 2003.

ROBERT C. CORCORAN, B.S. University of Chicago 1978; Ph.D. Columbia University 1983; Associate Professor of Chemistry 1992.

DEBASHIS DUTTA, B. Tech Indian Institute of Technology 1998; Ph.D. University of Notre Dame 2003; Associate Professor of Chemistry 2011, 2006.

JOHN O. HOBERG, B.A. Jamestown College 1984; Ph.D. Montana State University 1990; Associate Professor of Chemistry 2004.

JAN KUBELKA, M.S. Charles University of Prague 1996; Ph.D. University of Illinois at Chicago 2002; Associate Professor of Chemistry 2011.

TERESA LEHMANN DELLA VOLPE, B.S. Universidad Central de Venezuela 1987; Ph.D. University of Minnesota 1997; Associate Professor of Chemistry 2014, 2008.

JING ZHOU, B.S. Xiamen University 1997; Ph.D. University of South Carolina 2004; Associate Professor of Chemistry 2013, 2007.

Assistant Professors:

BRIAN M. LEONARD, B.S. University of Nebraska at Kearney 2003; Ph.D. Texas A&M 2008; Assistant Professor of Chemistry 2010, 2012.

KRISZTINA VARGA, B.S. St. John's University 1996; M.A. Columbia University 2001; Ph.D. 2005. Assistant Professor of Chemistry 2010.

Research Faculty:

NAVAMONEY ARULSAMY, B.Sc. Madurai-Kamaraj University, India 1982; M.Sc. 1986; Ph.D. University of Hyderabad, India 1991; Senior Research Scientist 2013, 2005.

ALEXANDER GORONCY, B.S. University of Bremen; Ph.D. University of South Carolina; Research Scientist 2015.

Adjunct Professors:

YURI DAHNOVSKI, Ph.D. Institute of Chemical Physics, Moscow 1983; Adjunct Professor of Chemistry 2001.

MAOHONG FAN, Ph.D. Osaka University 2003; Adjunct Associate Professor of Chemistry 2009.

Associate Lecturer:

CARLA DEE BECKETT, B.S. University of Wyoming 1991; M.S. 2007; Associate Lecturer of Chemistry 2011, 2012.

Senior Lecturer:

PATRICIA A. GOODSON, B.S. University of Alabama 1983; M.S. University of Wisconsin-Madison 1986; Ph.D. University of Wyoming 1990; Senior Lecturer of Chemistry 2008, 1999.

MICHAEL S. SOMMER, B.A. Queens College, CUNY 1984; M.A. 1985; A.M. Harvard University 1987; Ph.D. 1996; Senior Lecturer of Chemistry 2011, 2001.

Professors Emeritus:

Vernon Archer, Daniel A. Buttry, Keith T. Carron, Geoffrey Coates, Clyde Edmiston, Anthony Guzzo, Suzanne Harris, Robert Hurtubise, David Jaeger, John Maurer, E.G. Meyer, David A. Nelson, Lewis Noe

Chemistry is one of the fundamental physical sciences dealing with the structure and properties of matter, along with changes that matter undergoes. Chemistry's scope encompasses all substances, living and non-living. Its study and practice include (1) the theoretical and experimental aspects of chemical bonding and structure using computational, spectroscopic, and diffraction techniques; (2) the

laboratory synthesis from simple starting materials of desirable compounds in the inorganic, organic and biological classes; and (3) the total analysis of complex mixtures using modern spectroscopic and electrochemical methods. Since we live in a material world, applications of chemical knowledge influence most areas of human endeavor: scientific, economic, political and social. Many of the advances in the areas of new materials, medicines, biotechnology, food production, new energy sources and semiconductor technology associated with the "computer revolution" are based on chemistry and chemical principles. Some understanding of these chemical principles should be part of every educated person's knowledge.

Because of the broad scope of this discipline, the Department of Chemistry offers a variety of courses and programs. These programs meet the needs of students planning professional careers in chemistry and those wishing to major in chemistry for other objectives. In particular, chemistry is a traditional preprofessional major for students interested in medicine and dentistry. Specific courses are offered to serve other major areas and as part of University Studies and A&S core requirements.

Students who have taken an AP examination and have received a score of 4 or 5 may receive credit for CHEM 1020 and 1030.

Undergraduate Major

The department offers **both,** B.A. and B.S. degree programs. The B.A. degree includes a minimum of 32 hours of chemistry. The Plan 1 B.S. degree requires at least 38 hours. The Plan 2 B.S. requires 46 hours of chemistry courses. Since the chemistry required in the first two years of all programs is the same, students interested in pursuing a chemistry major can elect any program initially. Discussions with a departmental adviser will allow students to choose the most appropriate major for their career objectives. In general, students planning graduate work in chemistry should elect one of the B.S. programs. The B.A. program has a more liberal content with additional electives. It would support careers in business, law and advanced study in areas needing a strong chemistry background such as toxicology or forensic science.

A B.A. is suitable for students in the College of Education who wish to obtain an A&S degree, and may also be appropriate for some premedical tracks. The Plan 2 professional program is designed to meet standards set by the American Chemical Society (ACS). A student who completes the Plan 2 B.S. program will be certified by the Department of Chemistry to the ACS as having met the specific ACS requirements for undergraduate professional training in chemistry.

Plan 1 B.A. in Chemistry

(32 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	**26**
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 3550 or 4507, and 4110	
Additional upper-level chemistry	**6**
(including one of the following: 4100, 4230, or 4530)	
MATH 2200 and 2205	8
PHYS	**8**
1310 and 1320 (or 1110 and 1120 or 1210 and 1220)	
Additional University Studies requirements	**28**
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A&S core requirements	**17**
(assumes double count on non-western course)	
Electives	**27**
Physical education	**1**
Total Hrs.	***121***

Plan 1 B.S. in Chemistry

(38 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	**34**
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 4000 (1 hour), 4100, 4110, 4507, 4508, 4525 and 4530	
CHEM 4930	2
Additional upper-level chemistry	3
MATH 2200, 2205 and 2210	12
PHYS	**8**
1310 and 1320 (or 1210 and 1220)	
Additional University Studies requirements	**28**
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A&S core requirements	**17**
(assumes double count on non-western course)	
Electives	**17**
Physical education	**1**
Total Hrs.	***121***

Plan 2 Professional B.S. in Chemistry

(46 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	**41-42**
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 3610 (or MOLB 4600), 4000 (1 hour), 4100, 4110, 4230, 4507, 4508, 4525 and 4530	
CHEM 4930	3
Additional upper-division chemistry	2-3
MATH 2200, 2205 and 2210	12
PHYS 1310 and 1320	**8**
(or 1210 and 1220)	
Computer science	**3**
(STAT 2050, CHEM 4515, COSC 1010)	
Additional USP requirements	**28**
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A & S core requirements	**10-12**
Two upper-division courses outside chemistry or two semesters of a single foreign language. (assumes double count on non-western course)	
Program supporting courses	**18**
A group of courses selected to further the career objectives of the individual student. These are chosen after consultation with the departmental adviser and must subsequently be approved by the departmental Undergraduate Studies Committee	
Electives	**4-7**
Physical education	**1**
Total Hrs.	***129***

Suggested Program for a Bachelor's Degree in Chemistry

(Freshman and Sophomore Years)

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
CHEM	1050 or 1020	4
ENGL	1010	3
MATH	2200	4
A&S Core or University Studies Requirements		3-4
CHEM	1001	1
	Total Hrs.	***15-16***

FRESHMAN YEAR: Spring		Hrs.
CHEM	1060 or 1030	4
MATH	2205	4
A&S core or University Studies requirements		6-8
	Total Hrs.	***14-16***

SOPHOMORE YEAR: Fall		Hrs.
CHEM	2420	4
MATH	2210 (B.S. requirement)	4
PHYS	1310 or 1210 or 1110	4
A&S core or University Studies requirements		3-4
	Total Hrs.	***15-16***

SOPHOMORE YEAR: Spring		Hrs.
CHEM	2440	4
CHEM	2230	4
PHYS	1320 or 1220 or 1120	4
A&S core or University Studies requirements		3-4
	Total Hrs.	***15-16***

Undergraduate Minor

A minor is offered in the Department of Chemistry. Further information may be found at the web site www.uwyo.edu/chemistry.

Teacher Education

Teacher certification requirements are available through the College of Education. Students preparing to teach chemistry in the secondary schools are advised to take a major in chemistry or a major composed of carefully selected courses in chemistry and related sciences.

A special interdisciplinary curriculum in chemistry and a related area may be arranged. (See department head for information).

Graduate Study

The Department of Chemistry offers programs leading to the degrees of master of science and doctor of philosophy chemistry. The master's degree is offered mainly under Plan A with Plan B reserved for special circumstances.

The department also participates in the preparation of students for the degrees of master of science in natural science and master of science in teaching (M.S.T.), which are designed to improve the competence of those engaged in science teaching.

Program Specific Admission Requirements

In addition to the minimum requirements set forth in this *Catalog*, the Department of Chemistry requires that a student have taken the following undergraduate courses: one year of general chemistry; one semester/quarter of quantitative analysis; one year of organic chemistry plus laboratory; one year of physical chemistry plus laboratory; one year of physics; and mathematics through multivariable calculus. As appropriate, one or more of these course requirements may be waived at the discretion of the department.

Program Specific Degree Requirements

Master's Program Plan A (thesis)

In addition to fulfilling the minimum university requirements, a student must take one 3 hour course in each of three of the four areas (inorganic, analytical, organic, and physical), excluding special topics and research courses. These courses must be graduate courses, 5000 and above.

A student may also take 9 credits of any combination of CHEM 5190, 5290, 5390, 5590, or 5790.

One departmental seminar is required to be presented on the thesis research.

Doctoral Program

In addition to fulfilling the minimum university requirements, a student must take one 3 hour graduate course (5000 and above) in each of the four areas (inorganic, analytical, organic, and physical), excluding special topics, tool courses 5130, 5320, 5760, and research courses.

A student may also take 12 credits of any combination of CHEM 5190, 5290, 5390, 5590, or 5790.

In the area selected as a major, the student will take the following as a minimum:

1. Analytical - 5250 plus 9 hours of graduate level analytical courses;
2. Inorganic - 12 hours of graduate level inorganic courses;
3. Organic - 5320, 5330, 5340 and 5350;
4. Physical - any three graduate level physical chemistry courses;

Students must obtain satisfactory performance on a series of written major field cumulative examinations, including special topics.

Students must obtain satisfactory performance on a preliminary examination, part written and part oral.

Students must present a seminar based on the dissertation research. Students must also obtain two additional credits of CHEM 5000 by presenting a divisional or departmental seminar or an oral presentation at a regional or national research meeting.

Chemistry (CHEM)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Introductory Chemistry. 4. [SP◀▶PN] Deals with principles of chemistry and some applications to inorganic chemistry. For students in family and consumer sciences, nursing, education, general arts and sciences and most agriculture curricula. Students who have credit in CHEM 1020 or 1050 may not receive duplicate credit for this course. Laboratory and discussion: 3 hours per week. *Prerequisite:* Minimum grade of C in MATH 0925, or level 3 on the MPE, or ACT math score of 23 or above. (Normally offered fall semester)

1001. The Chemical Community. 1. [I,L◀▶(none)] A survey of chemistry both as a major and a discipline. Chemistry's historical role, the scientific method, scientific ethics, as well as current challenges in the major fields of chemistry are discussed. Information literacy is strongly emphasized, both by familiarization with university resources as well as specialized chemical databases. (Normally offered fall semester)

1020. General Chemistry I. 4. [SP◀▶PN] First semester of a one-year introductory series. Provides broad coverage of chemistry principles with inorganic and organic systems applications. Credit will not be allowed for more than one of CHEM 1020, 1050 and 1000. Laboratory and discussion: 3 hours per week. *Prerequisite:* ACT Math score of 23 or above, or concurrent enrollment in Math 1400, or 1405 or 1450. (Normally offered fall, spring and summer)

1030. General Chemistry II. 4. [SP◀▶PN] Second semester of a one-year introductory series. Provides broad coverage of chemistry principles with inorganic and organic systems applications. Credit will not be allowed for more than one of CHEM 1030 and 1060. Laboratory and discussion: 3 hours per week. *Prerequisite:* CHEM 1020. (Normally offered fall, spring and summer)

1050. Advanced General Chemistry I. 4. [SP◀▶PN] First semester of a one-year series covering chemical principles. Emphasizes inorganic chemistry and briefly discusses qualitative analysis. Credit not given for more than one of CHEM 1020, 1050 and 1000. Laboratory: 3 hours per week. *Prerequisites:* one year high school chemistry, and an ACT Math score of 27 or higher or concurrent enrollment in Math 2200. (Normally offered fall semester)

1060. Advanced General Chemistry II. 4. [SP◀▶PN] Second semester of a one-year series covering chemical principles. Empha-

sizes inorganic chemistry and briefly discusses qualitative analysis. Credit not given for more than one of CHEM 1030 and 1060. Laboratory: 3 hours per week. *Prerequisite:* CHEM 1050 or CHEM 1020, with permission of the instructor. (Normally offered spring semester)

2000. Special Topics in the Laboratory. 1 (Max. 4). Introduces students to laboratory experience in chemistry. *Prerequisite:* special permission from the chemistry department.

2230. Quantitative Analysis. 4. Broad, general coverage of analytical techniques, principles and calculations. Laboratory: 6 hours per week. *Prerequisite:* CHEM 1030, 1060 or equivalent. (Normally offered spring semester)

2300. Introductory Organic Chemistry. 4. Terminal course in organic and beginning biological chemistry. No credit will be allowed in CHEM 2300 if credit earned in CHEM 2420. *Prerequisite:* CHEM 1020, 1050, 1000 or equivalent. Note: This course is **not** an acceptable prerequisite for CHEM 2440. (Normally offered spring semester)

2420. Organic Chemistry I. 4. First semester of a one-year sequence in organic chemistry. Approached from the viewpoint of modern chemical theory, emphasizing structural and mechanistic concepts. The course incorporates a laboratory integrated with the lecture. Students desiring a one-semester terminal course should take CHEM 2300. Laboratory: 3 hours per week. No credit allowed in CHEM 2420 if credit earned in 2300. *Prerequisite:* CHEM 1030 or 1060. (Normally offered fall)

2440. Organic Chemistry II. 4. Second semester of a one-year sequence in organic chemistry. Approached from viewpoint of modern chemical theory, emphasizing structural and mechanistic concepts. The course incorporates a laboratory integrated with the lecture. Students desiring a one-semester terminal course should take CHEM 2300. Laboratory: 3 hours per week. *Prerequisites:* CHEM 1030 or 1060 and 2420. *Note:* CHEM 2300 is not an acceptable prerequisite for CHEM 2440. (Normally offered spring semester)

3020. Environmental Chemistry. 3. Environment and modern environmental problems in terms of chemical structures and reactions. Chemical principles of equilibrium, kinetics, and thermodynamics are used to help understand our changing environment. Topics include toxicological chemistry, aquatic chemistry, atmospheric chemistry, and green chemistry. *Prerequisites:* CHEM 2300 or 2420; 2230; and QA course.

3550. Physical Chemistry for the Life Sciences. 3. Deals with areas of physical chemistry of interest to students majoring in the life sciences. Covers thermodynamics, kinetics, equilibrium and spectroscopy, using biological systems for development and illustration. Credit is allowed for only one of the courses: CHEM 3550 or 4507. *Prerequisites:* CHEM 1030, MATH 2200. (Normally offered every other year)

4000. Career Skills. 1. Designed to develop skills needed for success in the chemical profession or in graduate school. Topics include information on graduate programs, resume preparation, scientific writing, oral presentation, technical seminars, and laboratory note keeping. Available S/U only. *Prerequisites:* chemistry major, CHEM 4110 or concurrent enrollment. (Normally offered fall semester)

4040. Chemical Literature. 1-2 (Max. 2). Introduces literature of chemistry and methods employed in searching the literature. *Prerequisites:* CHEM 2300 or 2420; CHEM 4507 or 3550 or concurrent enrollment; scientific German recommended. (Normally offered alternating spring semesters)

4050. Solar Energy Conversion. 3. Provides an overview of the science behind current and future solar thermal and photovoltaic technologies. Environmental aspects, legal issues and cost associated with solar energy will also be included. Cross listed with ERS 4050. *Prerequisites:* CHEM 1030 or CHEM 1060 and PHYS 1210 or PHYS 1310 and MATH 2200. (Offered spring semester)

4100. Inorganic Chemistry Laboratory. 2. Introduces basic inorganic laboratory synthetic techniques and methods of analysis. *Prerequisite:* CHEM 2440 and 4110 or concurrent enrollment. (Offered fall semester)

4110. Introductory Inorganic Chemistry. 3. A basic course on theoretical and descriptive inorganic chemistry. *Prerequisite:* CHEM 2420, and physical chemistry. (Normally offered fall semester)

4230. Instrumental Methods of Chemical Analysis. 4. Introduces optical, electroanalytical and separation methods of analysis, emphasizing practical industrial applications. *Prerequisite:* CHEM 2230. (Normally offered fall semester)

4400. Biological Chemistry. 3. Covers the main principles of biological chemistry from a chemical standpoint. Highlights the chemical structure of biological molecules and examines biological processes with emphasis on the underlying organic chemistry. Introduces biological NMR spectroscopy and other biophysical methods. Discusses main metabolic pathways. Dual listed with CHEM 5400. *Prerequisite*: CHEM 2440 or consent of instructor

4507. Physical Chemistry I. 3. First semester of a one-year sequence. Emphasis on introductory quantum mechanics, atomic structure, molecular bonding and structure and spectroscopy. Kinetic molecular theory of gasses may be introduced. Uses multivariable calculus, differential equations and some linear algebra. *Prerequisites:* one year of general chemistry, multivariable calculus, one year of general college physics. (Normally offered fall semester)

4508. Physical Chemistry II. 3. Second semester of a one year sequence, emphasizes kinetic theory of gasses and non-ideal solutions, chemical equilibrium, electrochemistry, statistical thermodynamics, and reaction kinetics. Uses multivariable calculus and differential equations. *Prerequisite:* CHEM 4507. (Normally offered spring semester)

4515. Applied Mathematics in Physical Chemistry I. 3. Designed to introduce the necessary mathematical background and essential computer programming tools for students of physical and theoretical chemistry. This includes an introduction into linear algebra, multivariate calculus, differential equations, analysis and modeling of experimental data, use of Matlab software and mathematical analysis of physical chemistry problems. Dual listed with CHEM 5515. *Prerequisites:* MATH 2200 and 2205, CHEM 1020/1030 or 1050/1060.

4516. Applied Mathematics in Physical Chemistry II. 3. Covers the advanced mathematical techniques in physical and theoretical chemistry. This includes introduction into probability and stochastic processes, infinite series, vector and tensor calculus, Fourier transforms and partial differential equations. Includes practical numerical problem solutions using MatLab software and applications of the mathematical analysis to specific physical chemistry problems. Dual listed with CHEM 5516. *Prerequisite:* CHEM 4515.

4525. Physical Chemistry Lab I. 1. Illustrates principles of physical chemistry, techniques of measurement, and analysis and interpretation of data with an emphasis on quantum mechanical (spectroscopic) methodologies. *Prerequisites:* CHEM 4507 or concurrent enrollment.

4530. Physical Laboratory II. 1. Illustrates principles of physical chemistry, techniques of measurement, and analysis and interpretation of data with emphasis on thermodynamic methodologies. Laboratory: 3 hours per week. Prerequisites: CHEM 4525 and CHEM 4508, or concurrent enrollment. (Normally offered spring semester)

4560. Molecular Modeling - Computational Chemistry. 3. Emphasizes training in computational, electronic and vibrational structure, calculations ranging from molecular mechanics to semi-empirical to ab-initio methods. Dual listed with CHEM 5560. *Prerequisite:* CHEM 4507. (Normally offered alternating spring semesters)

4920. Special Problems in Chemistry. 1-3 (Max. 6). Probes deeply into special areas of chemistry through library or laboratory work. Taken under supervision of faculty in the area of the investigation. Laboratory: 3-9 hours per week. *Prerequisite:* consent of instructor. (Offered every semester)

4930. Undergraduate Research. 1-3 (Max. 9). Research activities on a chemical project of limited scope or as part of a laboratory project of great scope. A written report is submitted to the department each semester of enrollment. Laboratory: 4-12 hours per week. *Prerequisites:* chemistry major and consent of instructor. (Offered every semester)

The following courses are offered for S/U credit only: CHEM 5000, CHEM 5150, CHEM 5190, CHEM 5290, CHEM 5310, CHEM 5390, CHEM 5501, CHEM 5590, CHEM 5790, CHEM 5900, CHEM 5920, CHEM 5940, CHEM 5960, CHEM 5980, and special sections of CHEM 5100, CHEM 5200, CHEM 5300, and CHEM 5500 offered during Summer Session.

5000. Seminar in Chemistry. 1 (Max. 3). All graduate students attend weekly departmental seminars. One credit given each semester a presentation is made, to a limit of 3 credits for M.S. candidate, 6 for Ph.D. candidates. The seminar will normally be based upon articles in the current chemical literature but with the last presentation being over the student's research project. Offered satisfactory/unsatisfactory only. *Prerequisite:* graduate standing in chemistry or biochemistry.

5100. Special Topics in Advanced Inorganics. 1-9 (Max. 12). A course designed for students with an interest in contemporary inorganic chemistry. Recent problems in the literature and techniques for their solution will be addressed.

5111 [5110]. Advanced Inorganic Chemistry. 3. A graduate-level course on theoretical and descriptive inorganic chemistry. Topics will include molecular symmetry, spectroscopy, electronic structure/bonding, magnetism, electron transfer, and catalysis. *Prerequisites:* CHEM 2420, CHEM 4110 and CHEM 3550 or 4507.

5115. Descriptive Inorganic Chemistry. 3. Advanced survey of inorganic chemistry, emphasizing the synthesis, structural, and reactivity properties of inorganic compounds. Emphasis will be placed on the application of bonding theory and periodic principles to the chemistry of main-group, d-block, and f-block elements. *Prerequisite:* CHEM 5110 or CHEM 5111.

5120. Chemical Applications of Symmetry Group Theory. 3. The essential principles of group theory as used by practicing chemists. Fundamentals of symmetry and the theory of groups. Applications to problems of spectroscopy, structure and bonding. *Prerequisite:* CHEM 4110 and either CHEM 4508 or 5530.

5130. Physical Methods of Inorganic Chemistry. 1-3 (Max. 3). A course to survey the spectroscopic methods (electronic, vibrational, rotational, magnetic resonance, quadrupole resonance, Mossbauer, mass) which are used to elucidate the structure and bonding in inorganic and organometallic compounds. *Prerequisite:* CHEM 4507 or 4110/5110.

5140. Organometallic Chemistry. 3. A survey of bonding and synthetic reactions of transition metal organometallic chemistry. *Prerequisite:* CHEM 4110/5110.

5150. Inorganic Group Seminar. 1 (Max. 9). Course designed for students with an interest in contemporary inorganic chemistry. Recent problems in the literature and techniques for their solution are addressed.

5160. Bioinorganic Chemistry. 3. Biological chemistry of metals and non-metals will be used to illustrate the fundamental role that they play in all aspects of life. Recent examples and problems in the current literature will be used to illustrate how chemically imposed restrictions and limitations are surmounted in living systems. *Prerequisite:* CHEM 4110/5110.

5190. Research in Inorganic Chemistry. 1-3 (Max. 12). Offered satisfactory/unsatisfactory only. *Prerequisite:* CHEM 4110/5110.

5200. Special Topics in Analytical Chemistry. 1-6 (Max. 12). Material selected from chromatography, electroanalytical chemistry, ion exchange, chemical separations, optical methods of analysis, polarography and other areas. *Prerequisite:* CHEM 4230, 4507, and 5210.

5210. Advanced Survey of Chemical Analysis. 3. A basic course to provide a background in many aspects of quantitative analysis taught at an advanced graduate-level. *Prerequisite:* CHEM 2230 and 4507.

5220. Modern Electroanalytical Methods. 3. An advanced survey of electroanalytical chemistry including ion selective potentiometry, electrolysis, coulometry, polarography and voltammetry. *Prerequisite:* CHEM 5210.

5240. Optical Methods of Chemical Analysis. 3. An advanced survey of the theory, instrumentation and applications of optical methods of chemical analysis. *Prerequisite:* CHEM 4230, 4507, 5210.

5250. Advanced Chemical Instrumentation. 3. Introduces chemistry students to the basic elements of electronics. Specific topics include networks, passive and active filters, digital electronics, logic gates, counters, flip-flops, and converters. Second half of course introduces students to experimental design, pattern recognition, factorial analysis, and multivariate statistical methods. *Prerequisite:* CHEM 4230 or its equivalent.

5260. Separation Methods. 3. A detailed survey of the theoretical and practical aspects of modern separation methods with emphasis on chromatography. *Prerequisite:* CHEM 2230, CHEM 2440, and CHEM 4508.

5290. Research in Analytical Chemistry. 1-3 (Max. 12). Satisfactory/unsatisfactory only. *Prerequisite:* CHEM 2230, 4507.

5300. Special Topics Synthetic. 1-6 (Max. 9). Material will be selected from one of the following areas: heterocycles, organometallics, natural products, physical and chemical methods of structure elucidation, organic photochemistry, and other special areas of organic chemistry. *Prerequisite:* CHEM 5330.

5310. Organic Group Seminar. 1 (Max. 9). Designed for students with an interest in organic reaction mechanisms. A problem solving approach using electron pushing techniques will be emphasized. *Prerequisite:* CHEM 5340.

5320. Spectroscopic Methods of Structure Determination. 3. Provides theoretical and practical treatment of spectroscopic methods for application in research. Topics include ultraviolet, infrared, and nuclear magnetic resonance spectroscopy and mass spectrometry. *Prerequisite:* CHEM 2440, 4507.

5330. Advanced Organic Chemistry. 3. Treatment of organic chemistry from the viewpoints of structure and mechanism with emphasis on structural theory of bonding, stereochemistry and the general classes of organic reactions. *Prerequisite:* CHEM 2440 and 4507.

5340. Synthetic Methods in Organic Chemistry. 3. Surveys and applies the important synthetic methods of organic chemistry with particular attention to recent developments. *Prerequisite:* CHEM 5330.

5350. Advanced Organic Chemistry II. 3. Second semester of a two semester sequence with a focus on the detailed mechanisms of the major classes of reactions of importance in organic chemistry. *Prerequisite:* CHEM 5330.

5390. Research in Organic Chemistry. 1-3 (Max. 12). *Prerequisite:* CHEM 5320.

5400. Biological Chemistry. 3. Covers the main principles of biological chemistry from a chemical standpoint. Highlights the chemical structure of biological molecules and examines biological processes with emphasis on the underlying organic chemistry. Introduces biological NMR spectroscopy and other biophysical methods. Discusses main metabolic pathways. Dual listed with CHEM 4400. *Prerequisite*: CHEM 2440 or consent of instructor.

5500. Special Topics in Physical Chemistry. 1-6 (Max. 9). Material will be selected from one of the following fields: electrochemistry, surface chemistry, catalysis, colloids, photochemistry, and other special fields of physical chemistry. *Prerequisite:* CHEM 4507 and 5510.

5501. Physical Group Seminar. 1-9 (Max. 9). Designed for students with an interest in theoretical and experimental physical chemistry. Students are required to give presentations on current literature and research topics. *Prerequisite:* graduate standing.

5515. Methods of Applied Mathematics in Physical Chemistry I. 3. Designed to introduce the necessary mathematical background and essential computer programming tools for students of physical and theoretical chemistry. Includes an introduction into linear algebra, multivariate calculus, differential equations, analysis and modeling of experimental data, use of Matlab software, and mathematical analysis of physical chemistry problems. Dual listed with CHEM 4515. *Prerequisites:* MATH 2200 and 2205, 1 yr. CHEM 1020/1030 or 1050/1060.

5516. Applied Mathematics in Physical Chemistry. 3. Covers the advanced mathematical techniques in physical and theoretical chemistry. This includes an introduction into probability and stochastic processes, infinite series, vector and tensor calculus, Fourier transforms and partial differential equations. Includes practical numerical problem solutions using Matlab software and applications of the mathematical analysis to specific physical chemistry problems. Dual listed with CHEM 4516. *Prerequisites:* CHEM 4515/5515.

5520. Advanced Chemical Thermodynamics and Thermostatics. 3. A rigorous presentation of classical chemical thermodynamics followed by an introduction to statistical mechanics with the application to real systems. *Prerequisite:* CHEM 4508 and 4507.

5530. Quantum Chemistry. 3. The quantum mechanical description of time-dependent and independent processes, including discussions of the Schrodinger equation, wave packets, approximate methods, and interaction of matter with radiation. *Prerequisite:* two semesters of undergraduate physical chemistry.

5540. Molecular Spectroscopy. 3. Introduction to the relationships among quantum mechanical formulations, experimentally determinable quantities obtained via spectroscopic methods, and physical parameters related to the structure of molecular systems. *Prerequisite:* CHEM 5530.

5550. Chemical Kinetics and Reaction Dynamics. 3. Emphasizes the rates and mechanisms of chemical reactions and reaction dynamics which reviews the kinetic theory of gases, conventional transition state theory, Arrhenius theory, applications of Laplace transforms, thermodynamics of the transition state, reactions in solution and on surfaces, and other current topics as time permits. *Prerequisite:* CHEM 4507.

5560. Molecular Modeling - Computational Chemistry. 3. A course that emphasizes training in computational, electronic and vibrational structure, calculations ranging from molecular mechanics to semi-empirical to ab-initio methods. Dual listed with CHEM 4560. *Prerequisite:* CHEM 4507.

5570. Statistical Mechanics. 3. Course content will include Maxwell-Boltzmann statistics, ensembles, partition functions, transition state theory, thermodynamic pertubation techniques, quantum statistics, and time-correlation formalism. *Prerequisites:* CHEM 4508 and 4507 and MATH 2205.

5590. Research in Physical Chemistry. 1-3 (Max. 12). *Prerequisite:* CHEM 4507.

5760. Polymer Chemistry. 3. A course covering the principles of polymer synthesis and characterization. *Prerequisite:* CHEM 2230, 2340, 4507.

5790. Research in Biological Chemistry. 1-3 (Max. 12). *Prerequisite:* consent of instructor.

5820. Advanced Problems in Chemistry. 1-3 (Max. 3). A graduate level course for students desiring to probe more deeply into a special area of chemistry. Taken under the supervision of a faculty member in the field of investigation. *Prerequisite:* consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisites:* enrolled in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisites:* enrolled in a graduate level degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Chicano Studies

Please see *Latina/o Studies* on page 261.

Communication and Journalism

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Web site: www.uwyo.edu/COJO
Department Chair: Ken Smith

Professors:

MICHAEL R. BROWN, B.A. Wayne State College 1974; M.A. University of Wyoming 1984; Ph.D. University of Utah 1994; Professor of Communication and Journalism 2007, 1994.

TRACEY OWENS PATTON, B.A. Colorado State University 1993; M.A. 1996; Ph.D. University of Utah 2000; Professor of Communication and Journalism 2012, 2003.

CONRAD SMITH, B.S. Ohio State University 1969; M.A. 1971; Ph.D. Temple University 1981; Professor of Communication and Journalism 1996.

KENNETH L. SMITH, B.S. Iowa State University 1970; M.S. 1973; Ph.D. University of Utah 1991; Professor of Communication and Journalism 2005, 1991.

Associate Professors:

CHIA FANG HSU, B.A. Chinese Culture University 1995; M.A. Washington State University 1997; Ph.D. Washington State University 2002; Associate Professor of Communication and Journalism 2009, 2003.

CINDY J. PRICE-SCHULTZ, B.A. University of Sioux Falls 1989; M.S. South Dakota State University 1992; Ph.D. Southern Illinois University 2000; Associate Professor of Communication and Journalism 2008, 1999.

Assistant Professors:
KRISTEN D. LANDREVILLE, B.S. University of Florida 2004; M.A. 2006; Ph.D. Ohio State University 2010; Assistant Professor of Communication and Journalistm 2010.
LEAH LEFEBVRE, B.A. University of Wisconsic-LaCrosse 2005; M.A. University of Wisconsin-Milwaukee 2007; Ph.D. University of Texas-Austin 2014; Assistant Professor of Communication and Journalism 2014.
LI LI, B.A. Hebei Normal University 2001; M.A. China University of Mining and Technology 2004; M.A. Ohio State University 2009; Ph.D. 2012; Assistant Professor of Communication and Journalism 2012.

Senior Lecturers:
BEAU BINGHAM, B.S. Idaho State University 2000; M.A. New Mexico State University 2002; Senior Lecturer of Communication and Journalism 2007, 2003.
ERIC WILTSE, B.A. State University College at Buffalo 1974; M.A. University of Montana 1983; Ph.D. University of Wyoming 2000. Publisher of *Laramie Online*; Senior Lecturer of Communication and Journalism 2001, 1990.

Associate Lecturer:
JUSTIN STEWART, B.A. University of Wyoming 2003; M.A. 2005; Associate Lecturer of Communication and Journalism 2012, 2005.

Assistant Lecturer:
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Emeriti:
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The Department of Communication and Journalism provides a broad range of professional and research courses, offering a sound interdisciplinary academic program for students who plan careers in communication or mass media. Courses are comprised of writing, speaking and analyzing messages; forms of interpersonal communication; mass media effects and audiences' interpretations of media messages and images. Degrees are granted in communication and journalism with academic specialties in each of the degree areas. Students are given academic preparation in communication skills (media writing and public speaking), coupled with opportunities for professional experience in their majors. The department also offers minors in public relations, communication and journalism for non-majors.

Marketing, Facilities and Research Activities

The department encourages majors to work actively in print media. The department offers unique professional opportunities for students with the student newspaper, *The Branding Iron*.

Oral Communication Center, Ross Hall 442. A resource for the entire University Community. The lab is open for anyone required to present material orally. Lab instructors offer assistance at any stage in the process—from topic selection, purpose statements and gathering materials—to organizing, outlining and rehearsal. They can help alleviate speech anxiety that may prevent or inhibit some individuals from achieving their overall academic or career goals. Clients can have their presentations video-taped for critical input and evaluation as well as for portfolio or interview applications.

Forensics. The department conducts a nationally recognized program of Cross Examination Debate Association (CEDA). Teams and individuals representing the university attend national intercollegiate tournaments each year. Participation in the forensics program is open to all University of Wyoming students on a credit (COJO 2060) or non-credit basis.

Laboratories. The department has computer and research laboratories that support the professional, academic and research programs. These include a computer lab, photojournalism studio, and digital (audio and video) production lab.

Research. The department encourages undergraduate and graduate research. Faculty and students participate in research projects in social, cultural and political aspects related to mass media, interpersonal and organizational processes.

Internships. Journalism majors are required to complete internships in their field. Communication majors are encouraged to complete internships in their field. In addition to working with the *Branding Iron*, students complete internships with state, regional, and national weekly and daily newspapers; advertising and public relations agencies; non-profit organizations; businesses, professional and university sports organizations; and governmental agencies. *Note:* a maximum of 6 hours in COJO 3480 and 4990 count as fulfillment of the requirements for a major. All remaining hours will count toward graduation as upper-division hours.

Student Organizations

Professional Organizations. The department has chapters of the Society of Professional Journalists and Delta Sigma Rho, the national forensics honorary, and Lambda Pi Eta.

Student Activity. Within the department, student representatives participate on faculty committees where they assist in forming policies of the department.

The Branding Iron. The daily campus newspaper is independently managed by students at UW. It provides professional experiences for reporting, editorial, photojournalism, publication design and advertising.

The Owen Wister Review. The literary and arts magazine is independently managed and produced by university students, it features poetry, short stories, essays, photography and artwork.

Frontiers Magazine. The magazine is independently managed by UW students. Containing general interest content, the publication offers students opportunities to improve their professional skills in feature writing, in-depth reporting, photography, layout, design, advertising and marketing. Like the *Branding Iron* and *Owen Wister Review, Frontiers* is published under the auspices of UW Student Publications.

Scholarships and Awards

The department has several scholarships available to qualified students. Check the Communication and Journalism web site for additional information.

Undergraduate Programs

The department offers courses leading to baccalaureate degrees in communication and journalism.

Students majoring in the department are required to earn a grade of C or better in departmental required courses. Students may not take a course for S/U credit to satisfy requirements of the major.

Departmental Core Courses

In addition to the university studies requirements listed in this *Catalog*, all students majoring in communication and journalism must take the following required courses:

Required Courses **Hrs.**
COJO 1000 Intro to Mass Media 3
COJO 2010 Public Speaking 3
COJO 2100 Reporting & Newswriting.....3
STAT 2070 Intro to Statistics for the Social Sciences 4
(This course is a prerequisite for COJO 3070)
COJO 3070 Intro to Comm Resrch.....3
Language 1010 4
Language 1020 4

College of Arts and Sciences Requirements **Hrs.**
A&S U.S. Diversity (ASD).....3
A&S Global Awareness (ASG) 3

Communication Major

Communication is a liberal arts degree relevant to a variety of careers in community relations, public relations, politics, administration, law, sales management and human resource management.

Bachelor of Arts in Communication

Required Courses **Hrs.**
Departmental core courses..... 30
COJO 1040 Intro to Human Comm.....3
COJO 3010 Business/Prof Comm 3
COJO 3040 Advanced Comm Thry 3
Electives 15
(At least 12 elective hours must be at the 3000-level or higher)

Additional Program Requirements **Hrs.**
Human Culture (H) 6

Bachelor of Science in Communication

Required Courses **Hrs.**
Departmental core courses..... 30
COJO 1040 Intro to Human Comm.....3
COJO 3010 Business/Prof Comm 3
COJO 3040 Advanced Comm Thry 3
Electives 15
(At least 12 elective hours must be at the 3000-level or higher)

Additional Program Requirements **Hrs.**
Physical and Natural World (PN) or Quantitative Reasoning (Q) 6-8

Journalism Major

The journalism major is designed to prepare students for careers as reporters, editors and writers with urban newspapers, community newspapers, news services, magazines, public information, public relations and advertising.

Bachelor of Arts in Journalism

Required Courses **Hrs.**
Departmental core courses..... 30
COJO 3530 Online Journalism.....3
COJO 4500 Mass Communication Law.....3
COJO 3480 Internship 3
Departmental electives 15
(Includes 9 elective hours at the 3000-level or higher in journalism, plus 3 elective hours at the 3000-level or higher outside the department)

Additional Program Requirements **Hrs.**
Human Culture (H) 6

Bachelor of Science in Journalism

Required Courses **Hrs.**
Departmental core courses..... 30
COJO 3530 Online Journalism.....3
COJO 4500 Mass Communication Law.....3
COJO 3480 Internship 3
Departmental electives 15
(Includes 9 elective hours at the 3000-level or higher in journalism, plus 3 elective hours at the 3000-level or higher outside the department)

Additional Program Requirements **Hrs.**
Physical and Natural World (PN) or Quantitative Reasoning (Q) 6-8

Suggested Specialty Areas in Journalism

Reporting & Editing **Hrs.**
COJO 3100 Public Affairs Reporting.....3
COJO 4100 Investigative Reporting.....3
COJO 4110 Feature Writing Seminar 3
COJO 4120 News Editing 3

Advertising & Public Relations **Hrs.**
COJO 3300 Advertising in the Media 3
COJO 3310 Public Relations 3
COJO 4300 Advertising Campaigns.....3
COJO 4310 Public Relations Techniques.....3

Media & Society
COJO 3000 History of American Journalism 3
COJO 3470 History of Documentary Film..3
COJO 3520 Communication Technology & Society 3
COJO 3550 Political Communication 3
COJO 4000 News Making Processes 3
COJO 4020 Mass Media & Society.....3
COJO 4230 Special Topics in Mass Media ...3
COJO 4233 Race, Gender, Ethnicity in the Media 3
COJO 4600 Mass Media Ethics.....3
COJO 4800 Media Management 3

Visual & Multimedia
COJO 2400 Introduction to Photography....3
COJO 3170 Broadcast Journalism 3
COJO Graphics of Communication 3
COJO 4200 Visual Communication 3
COJO 4270 Advanced Television Production 3
COJO 4280 Advanced Radio Production.....3
COJO 4400 Photojournalism.....3
COJO 4530 Advanced New Media 3

Minors

The department offers minors in public relations, journalism, communication, and marketing communication for non-majors. For further information, contact the Department of Communication and Journalism.

Graduate Study

The Department of Communication and Journalism offers graduate work leading to the master of arts degree in communication (either Plan A or Plan B) with emphasis on human communication or mass communication.

The graduate curriculum addresses six major areas of inquiry in human communication: 1) the structure and function of contemporary epistemological, ontological, theoretical, and methodological paradigms in the communication discipline; 2) theories of language and nonverbal symbolic interactions; 3) communication processes in small group and organizational settings; 4) communication as an agent of stability and change in diverse social systems; 5) the role assumed by communication processes in the formation, development, and coordination of intimate human relationships; and 6) the nature and function of argumentative discourse in democratic societies.

The master's program in the mass media addresses media issues and problems from a theoretical perspective. The program is designed to be flexible such that students can examine questions that relate to their specific interests in the media. Areas of interest include but are not limited to print media, broadcasting, advertising, public relations, visual communication, media law and regulation, media management, media effects, mass media and society, media history, or media ethics.

Program Specific Admission Requirements

A cumulative minimum grade point average of 3.0 (A=4.0) on previous coursework is required for full admission.

Composite score minimum of 900 on the verbal and quantitative sections of the Graduate Record Examination (GRE).

For international students the university requires a minimum total score of 540 on the written exam or 76 on the Internet-based exam. The university will also accept a minimum score of 6.0 on the IELTS exam or certification of level 112 ELS completion in lieu of the TOEFL requirement.

Program Specific Degree Requirements

Administered by the Director of Graduate Studies, the programs are structured to facilitate completion of requirements for the M.A. degree in two years. Deficiency makeups may be required.

Master of Arts Plan A (thesis)

31 hour program.

Students must complete an accepted master's thesis approved by the student's thesis committee.

Students must complete a minimum of 27 credit hours and 4 hours of thesis. A minimum of 21 hours must be within the department, with a maximum of 3 hours of independent study and 3 hours of 4000-level coursework. A student also must take 3 hours of a 5000-level statistics course approved by the department's director of graduate studies.

For courses taken outside the department, a student may be credited with no more than 3 hours of 4000-level coursework and 3 hours of independent study.

Students must complete COJO 5070, 5080, and 5800 as well as one of the following theory courses, COJO 5310, 5540 or 5061.

Plan B (non-thesis)

Students must complete an accepted Plan B paper(s) (or project(s) if something other than an actual paper, e.g., film script, film documentary), and this must be developed as part of a 3 hour independent study approved by the student's Plan B adviser and the department's director of graduate studies.

The non-thesis degree requires a minimum of 33 credit hours, of which a minimum of 21 hours must be within the department. The non-thesis student is limited to 6 4000-level credit hours and a maximum of 6 credit hours of independent study or internship.

Students must complete COJO 5070, 5080, and 5800 as well as one of the following theory courses, COJO 5310, 5540 or 5061.

Communication and Journalism (COJO)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000 [CMJR 1000; CO/M 1000]. Introduction to Mass Media. 3. [CS◀▶H] An overview of mass media, newspapers, magazines, books, radio, television and films. Studies mass media's historical development, emphasizing understanding techniques of expression and impact on American culture. Surveys content of mass media; considers contemporary problems and trends. (Offered fall and spring semesters)

1001 [CMJR 1001]. Issues in the Mass Media. 1. [I,L◀▶(none)] An examination of important, relevant, and timely issues as they relate to the mass media. *Prerequisite:* concurrent enrollment in COJO 1000.

1020 [CMJR 1020]. Communication and Civic Engagement. 3. [O◀▶(none)] Designed to complement a course from another discipline by engaging students in civic discourse within that context. Students identify issues, study related rhetorical strategies, determine target audiences and develop communication with a venue and target audience to be determined by the class.

1030 [CMJR 1030; CO/M 1030]. Interpersonal Communication. 3. [(none)◀▶H] Focuses on interpersonal communication settings or face-to-face interaction. Basic unit of study is, therefore, the dyad. Also includes some work in small group settings. (Offered fall and spring semesters)

1040 [CMJR 1040; CO/M 1040]. Introduction to Human Communication. 3. [CS◀▶(none)] Introduces theories and research of social and behavioral scientists on communication process. Orients beginning communication students by focusing on concepts and issues central to human communication. (Normally offered fall and spring semesters)

1041 [CMJR 1041]. Issues in Human Communication. 1. [I,L◀▶(none)] An examination of important, relevant, and timely issues as they relate to the theoretical base of human communication. *Prerequisite:* concurrent enrollment in COJO 1040.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2010 [CMJR 1010; CO/M 1010; COJO 1010]. Public Speaking. 3. [O◀▶COM2] Beginning public speaking course. Students will develop foundational oral, digital and writing communication skills. Emphasizes message construction, performance and critique in public communication settings. Includes speech preparation, listening, audience analysis, writing strategies, digital communication, critical thinking, language/nonverbal behavior and various speaking formats. *Prerequisite:* Successful completion of a COM1 course.

2060 [CMJR 2060; CO/M 2060]. Forensics Practicum. 1 (Max. 8). *Prerequisite:* consent of forensics director. (Offered fall and spring semesters)

2090 [CMJR 2090; CO/M 2090]. Persuasion. 3. Studies human communication as a change agent. Emphasizes relationships of attitudes to behavior, behavioral research and contemporary theories. *Prerequisite:* COJO 1030 or 1040. (Offered fall semester)

2100 [CMJR 2100; CO/M 2100, 1100]. Reporting and Newswriting. 3. [WB◀▶(none)] Beginning newswriting. Practices development of news sources, selection and information organization. Variations in types of news. Covers development and trends of journalistic forms. Intensive practice in gathering and writing news. *Prerequisite:* WA writing course. (Offered fall and spring semesters)

2150 [CMJR 2150; CO/M 2150]. Argumentation. 3. Studies argumentation principles. Emphasizes reasoning, evidence, case construction and effective presentation in bringing about belief and conviction. Practical applications by participation in debates on various social and political questions. *Prerequisite:* COJO 1040. (Offered spring semester of even-numbered years)

2400 [CMJR 2400; CO/M 2400]. Introduction to Photography. 3. [CA◀▶(none)] Basic course in still photography. Includes laboratory practice in techniques of camera use, composition, processing and use of photographs. (Offered fall, spring and summer)

3000 [CMJR 3000; CO/M 3000]. History of American Journalism. 3. Presents history and development of American journalism from colonial times to present, emphasizing 20th century. *Prerequisite:* COJO 1000. (Offered spring semester of even-numbered years)

3010 [CMJR 3010; CO/M 3010]. Business and Professional Communication. 3. [(none)◀▶COM3] Studies theories and techniques of professional communication activities including interviewing skills, group processes, and professional presentations; for students who are beyond elementary oral communication level. Students develop oral communication skills through projects and presentations. *Prerequisite:* COJO 1010 or COJO 2010 and junior standing.(Offered fall and spring semesters)

3040 [CMJR 3040; CO/M 3040]. Advanced Communication Theory. 3. Considers nature of human communication theories. Analyzes problems in developing communication theory based on current social science methods. *Prerequisites:* COJO 1000 and COJO 1040. (Offered fall semester)

3070 [CMJR 3070; CO/M 3070]. Comunication Research. 3. Focuses on problems in communication and mass communication research. Specifically studies and applies language of science, basic concepts of communication, mass communication research, types and limitations of empirical research, as well as measurement procedures and analysis. *Prerequisites:* COJO 1000 or 1040 and STAT 2050 or 2070. (Offered fall and spring semesters)

3100 [CMJR 3100; CO/M 3100]. Public Affairs Reporting. 3. Practices in public affairs reporting, emphasizing local and state political organization as foundation for such reporting. Specialized reporting fields. News analysis. *Prerequisite:* COJO 2100. (Offered fall semester)

3160 [CMJR 3160; CO/M 3160]. Theory of Language and Society. 3. [WC◀▶(none)] Considers contributions to communication theory from linguistics, sociolinguistics, sociology, social psychology and anthropology to understanding a spoken language. *Prerequisites:* COJO 1040 and 6 additional hours in the department. (Offered spring semester)

3170 [CMJR 3170; CO/M 3170]. Broadcast Journalism. 3. An overview of the techniques of broadcast news professionals, to report and deliver stories on-air. Includes intensive practice in writing, reporting and reading news stories for radio and television. *Prerequisite:* COJO 2100. (Offered based on demand and resources)

3190 [CMJR 3190; CO/M 3190]. Cross-Cultural Communication. 3. [D◀▶COM3] Studies human communication processes within the context of various cultures and subcultures. Opportunity for field study of the effect of culture on communication behavior. *Prerequisite:* COJO 1040. (Offered fall semester)

3200 [CMJR 3200; CO/M 3200]. Graphics of Communication. 3. [CA◀▶(none)] Combines editing and design. Studies evaluation, selection and editing of magazine and newspaper news copy. Practice in publication design, including headline writing, printing methods, page layout and other display techniques. *Prerequisite:* COJO 1000. (Offered fall semester)

3300 [CMJR 3300; CO/M 3300]. Advertising in the Media. 3. Studies fundamentals of copywriting in mass communication. Provides study and practice in the psychology of advertising, audience direction, advertising appeals, strategy, and structure of ads and commercials. Includes exercises in basic principles of copywriting for print and electronic media. *Prerequisite:* COJO 2100. (Offered fall semester)

3310 [CMJR 3310; CO/M 3310]. Public Relations. 3. Studies mass media effects on audiences and audiences' involvement in and interpretation of mass media content. Discusses public opinion and mass media concepts as conceptual framework for public relations, advertising and other public information fields. *Prerequisite:* COJO 2100 and junior standing. (Offered fall semester)

3470 [CMJR 3470; CO/M 3470]. History of Documentary Film. 3. Provides history and overview of origin, development and evolution of documentary films, focusing on U.S., British and Canadian films. Examines documentary function, form, production techniques, as well as present and future role in the global community. *Prerequisites:* COJO 1000 and junior standing. (Offered based on demand and resources)

3480 [CMJR 3480; CO/M 3480]. Internship. 1-12 (Max. 12). Review and evaluation of approved internship experience. At the conclusion, students must submit a journal containing work samples and a critique of their performance and internship experience. Maximum of 6 hours of internship credit can be used to fulfill requirements of the major. *Prerequisites:* signed contract and 9 hours in the department. (Offered fall, spring and summer)

3520 [CMJR 3520; CO/M 3520]. Communication Technology and Society. 3. Studies role of communication technology in functioning of society. Examines history of effects on personal growth, self-concept, world view, creative thinking, personal relationships and social processes. *Prerequisite:* COJO 1000 or 1040. (Offered spring semester)

3530 [CMJR 3530; CO/M 3530]. Online Journalism. 3. How to produce content for online media and use the web as a tool for mass media work. Course provides experience in designing web pages, writing for hypermedia and digital imaging; covers history, ethical issues and trends in online journalism, photography, broadcasting, public relations and advertising. *Prerequisite:* COJO 2100 or other instructor approved WB course. (Offered fall and spring semesters)

3550. Political Communication. 3. Examines the intersection of politics and communication. For example, may cover politics and media, interpersonal political discussion, organizational and governmental political communication, political campaigns, politics and technology, etc. Moreover, it may cover the effects of political communication on individuals' opinions and behavior. Cross listed with POLS 3550. Prerequisites: COJO 1000, COJO 1040, or POLS 1000.

4000 [CMJR 4000; CO/M 4000]. News-Making Processes. 3. The study of the processes underlying the production of news in the mass media with special emphasis on how those processes affect the news and have an impact on society. Examines the function of news, values, and objectivity in the news, outside influences, and news as entertainment. Dual listed with COJO 5000. *Prerequisites:* COJO 1000 and 9 hours in the department.

4020 [CMJR 4020; CO/M 4020]. Mass Media and Society. 3. Studies ethical and related problems of mass communication from contemporary and historical viewpoints. Critical analysis of the performance of the mass media. *Prerequisites:* COJO 1000 or 1040 and 6 hours in the department. (Offered spring semester)

4030 [CMJR 4030; CO/M 4030]. Advanced Interpersonal Communication. 3. Studies research and theory in interpersonal relationships; formation and maintenance of friendships; marriages; and group relationships. *Prerequisites:* COJO 1040 and 6 hours in the department. (Offered fall semester of odd-numbered years)

4050 [CMJR 4050; CO/M 4050]. Communication and Conflict. 3. Studies research and theory concerning communication in conflict development and management. Examines forms of conflict, including occurrences in interpersonal, group, organizational and cultural contexts. *Prerequisites:* COJO 1000 or 1040 and 6 hours in the department. (Offered fall semester of even-numbered years)

4061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with ENGL 4061; dual listed with COJO 5061. *Prerequisites:* COJO 1040 and junior standing. (Offered spring semester of even-numbered years)

4100 [CMJR 4100; CO/M 4100]. Investigative Reporting. 3. [WC◀▶(none)] Practices developing and writing articles of depth and substance in areas of public concern. Emphasizes careful research, weighing conflicting viewpoints, interpreting complex issues and critical evaluation. *Prerequisite:* COJO 3100. (Offered spring semester of even-numbered years)

4110 [CMJR 4110; CO/M 4110]. Feature Writing Seminar. 3. [WC◀▶COM3] Extensive practice in such specialized forms of writing as editorials, commentaries, reviews and magazine articles. Content varies. Critically analyzes such writing. *Prerequisites:* COJO 2100 and 6 hours in the department. (Offered fall semester)

4120 [CMJR 4120]. News Editing. 3. Students develop skills in editing copy for newspapers and magazines. Focus is on copy editing for grammar, syntax, style, clarity, spelling, word usage, fairness and balance, conciseness, and accuracy. Students also learn to write effective headlines and cutlines, do effective design and layout of tabloid and broadcast pages, and create effective information graphics and photo features. *Prerequisite:* COJO 2100. (Offered spring semester of even-numbered years)

4140 [CMJR 4140; CO/M 4140]. Nonverbal Communication Studies. 3. Critical analysis of current studies in the area of nonverbal communication. Students are required to complete an independent study of some aspect of nonverbal communication relevant to interests. Dual listed with COJO 5140. *Prerequisites:* junior standing. (Offered spring semester of even-numbered years)

4160. African American Rhetoric. 3. [CH,D◀▶COM3] African American discourse and its relationship to equality and participation. Through examination of various media, music, speeches, and art this course uses the struggle of African Americans as an instructive exemplar, to come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Dual listed with COJO 5160; cross listed with AAST 4160. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course. (Offered fall semester of odd-numbered years)

4190. Dimensions of Racism. 3. Explores the effects of racism on African people in America using an African centered framework. We will look at the ways racism intersects with sexism, classism, and heterosexism/homophobia within the African community both in America and throughout the Diaspora. Dual listed with COJO 5190; cross listed with AAST 4190. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

4200 [CMJR 4200; CO/M 4200]. Visual Communication. 3. Studies principles of vision that help explain how humans process information. Content includes perception, organization of information, spatial factors, cultural factors, motion, vectors and color. Specifically emphasizes visual processing of information relating to mass media. *Prerequisite:* COJO 1000. (Offered spring semester of odd-numbered years)

4210 [CMJR 4210; CO/M 4210]. Special Topics in Communication. 1-3 (Max. 6). Intensive study of such special problems and topics in human communication processes as gender relations, power dynamics, family and political communication. Content varies. Dual listed with COJO 5210. *Prerequisites:* COJO 1040 and 9 hours in the department.

4230 [CMJR 4230; CO/M 4230, 4910]. Special Topics in Mass Media. 1-3 (Max. 6). Intensive study of problems and topics specific to the mass media, including print, broadcast, advertising, public relations, and the Internet. Course content varies and may include historical, legal, ethical, political, sociocultural, economic, and theoretical perspectives. Dual listed with COJO 5230. *Prerequisites:* COJO 1000 and 9 hours in the department.

4233. Race, Gender, Ethnicity in the Media. 3. [WC,D◀▶COM3] Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with AAST 4233 and WMST 4233; dual-listed with COJO 5233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

4250 [CMJR 4250; CO/M 4250]. Advanced Organizational Communication. 3. Studies communication processes in political, educational, industrial, medical and nonprofit organizations. Emphasizes in-depth analysis of theories and methods of organizational research and practice. (Offered spring semester of even-numbered years)

4260. [4985] Rhetoric and Social Justice. 3. [D◀▶COM3] Analyzes concepts of ableism, anti-Semitism, heterosexism, racism, sexism, and socioeconomic class through a critical/social construction framework. It attempts to develop a "working" definition of these concepts by analyzing historical and current conceptualizations and identifying marginalization and disenfranchisement as it is woven in the fabric of American society. Dual listed with COJO 4260; cross listed with AAST 4260. *Prerequisites:* Minimum of 9 credit hours in AAST or COJO and junior standing. (Offered spring semester of even-numbered years)

4270 [CMJR 4270; CO/M 4270]. Advanced Television Production. 3. Studies details of directing, editing and single camera television production. Requires production of several original short television programs. *Prerequisite:* COJO 3270. (Offered spring semester)

4280 [CMJR 4280; CO/M 4280]. Advanced Radio Production. 3. Advanced project course in audio production work. Concentrates on production of high quality and professional sounding audio productions using voices, music and sound effects. Emphasis on creativity. *Prerequisite:* COJO 3280. (Offered spring semester)

4300 [CMJR 4300; CO/M 4300]. Advertising Campaigns. 3. Reviews current national, regional and local advertising practices in various media. Develops understanding of advertising agency and/or advertising department. Students prepare an advertising campaign using creative and marketing strategies on regional or national level. *Prerequisite:* COJO 3300. (Normally offered spring semester)

4310 [CO/M 4310]. Public Relations Techniques. 3. Practical application of public relations writing, planning and program implementation. Includes exercises in writing news releases, structuring news conferences and writing preliminary and formal public relations strategies. The plans also incorporate advertising and marketing segments for external publics, newsletter design, editing and interpersonal relations. *Prerequisite:* COJO 3310. (Offered spring semester)

4400 [CMJR 4400; CO/M 4400]. Photojournalism. 3. Studies and intensively practices reporting news and features photographically, plus essentials of advertising photography. Includes advanced camera and darkroom techniques and photo editing. Two one-hour lectures and one two-hour laboratory weekly. *Prerequisite:* COJO 2400. (Offered spring semester of even-numbered years)

4500 [CMJR 4500; CO/M 4500]. Mass Communication Law. 3. Studies development of First Amendment law. Includes practical application of law to mass media practice; relationship of legal and social responsibilities of the mass media; and problems of law and regulation, such as constitutional, statutory and administrative. *Prerequisites:* COJO 1000 and 2100. (Offered fall semester)

4530. Advanced New Media. 3. Addresses the theory and logistics of web design and online interactivity. Students will create and maintain a professional portfolio website that showcases their communication and design talents. It is applicable to journalism, public relations, advertising, marketing, photography, and any other media-related career path that

uses new media. Dual listed with COJO 5530. *Prerequisites*: COJO 1000 and 9 hours in the department. (Offered spring semester)

4590 [CMJR 4590; CO/M 4590]. Advanced Persuasion. 3. Participants in this seminar engage in dialog directed toward both (1) understanding the issues raised in contemporary persuasion research and (2) exploring potential solutions and ideas for future research. This seminar should prompt participants to begin their own research ventures designed to contribute to the study of communication and social influence. Dual listed with COJO 5590. *Prerequisites:* COJO 2090. (Offered spring semester of odd-numbered years)

4600 [CMJR 4600; CO/M 4600]. Mass Media Ethics. 3. Studies ethical theory, emphasizing how it can be applied to problem solving in the media. Examines major ethical perspectives and requires application to actual case studies. Dual listed with COJO 5600. *Prerequisite:* 6 hours at 3000-level in the department. (Offered spring semester of odd-numbered years)

4620. Intergroup Communication. 3. The course will provide an overview of theory and research on intergroup relations to demonstrate how communication both affects and reflects our social group memberships. The objective is to provide students with the theoretical foundation to view various contexts of communication through an "intergroup lens." Dual listed with COJO 5620. *Prerequisite:* COJO 1000 or COJO 1400.

4630 [CMJR 4630; CO/M 4630]. Ethics in Personal Relationships. 3. Examines personal relationships and the ethical issues participants in these relationships encounter. Personal relationships are those unique relationships in which the participants cannot be replaced without altering the very nature of the relationship. Personal relationships are originated, developed, maintained and dissolved through communication between the participants. Dual listed with COJO 5630. *Prerequisite:* COJO 1030. (Offered fall semester of odd-numbered years)

4800 [CMJR 4800; CO/M 4800]. Media Management. 3. Discusses station and program orientation, market studies, law, policies, programming, public relations and public responsibilities. *Prerequisites:* COJO 2100 and 6 hours in the department. (Offered based on demand and resources)

4990 [CMJR 4990; CO/M 4990]. Independent Study in Communication. 1-3 (Max. 6). *Prerequisites:* 15 hours in the department and consent of department chair.

5000. News-making Process. 3. Study of the processes underlying the production of news in the mass media with special emphasis on how those processes affect the news and have an impact on society. Course examines the functions of news, values, and objectivity in the news, outside influences, and news as entertainment. Dual listed with COJO 4000. *Prerequisite:* graduate standing.

5010. Texts of Mass Media. 3. Intensive critical examination of the history, theory, social responsibility and empirical research in the production and consumption of mediated messages. *Prerequisite:* graduate standing.

5030. Seminar in Interpersonal Communication. 3. Intensive examination of contemporary theoretical perspectives and empirical research on interpersonal communication, including the role of communication in self-concept formation, social relationship development, and the structure and function of ordinary discourse in human interaction. Dual listed with COJO 4030. *Prerequisite:* graduate standing.

5061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with ENGL 5061; dual listed with COJO 4061. *Prerequisites:* COJO 1040 and 3040 or ENGL 2035.

5070. Research in Communication I. 3. Principles and problems of experimental research in human communication. Attention primarily on experimental design within laboratory and field settings. *Prerequisite:* graduate standing.

5080. Research in Communication II. 3. Principles and problems in quasi-experimental and naturalistic research in human communication. Attention primarily on the observation and systematic investigation of naturally occurring communicative events. *Prerequisite:* graduate standing.

5140. Nonverbal Communication Studies. 3. Critical analysis of current studies in the areas of nonverbal communication. Students are required to complete an independent study of some aspects of nonverbal communication relevant to interests. Dual listed with COJO 4140. *Prerequisites:* COJO 1040 or COJO 1000.

5160. African American Rhetoric. 3. African American discourse and its relationship to equality and participation. Through examination of various media, music, speeches, and art this course uses the struggle of African Americans as an instructive exemplar, to come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Dual listed with COJO 4160; cross listed with AAST 5160. Prerequisite: AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

5190. Dimensions of Racism. 3. Explores the effects of racism on African people in America using an African centered framework. We will look at the ways racism intersects with sexism, classism, and heterosexism/homophobia within the African community both in America and throughout the Diaspora. Dual listed with COJO 4190; cross listed with AAST 5190. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior or senior standing, or nine credit hours in any level COJO course.

5210. Special Topics in Communication. 1-3 (Max. 6). Intensive examination of current theoretical issues in communication. Course content varies. Graduate students are expected to follow a rigorous reading schedule and submit a major paper or research project. Dual listed with COJO 4210. *Prerequisite:* graduate standing.

5230. Special Topics in Mass Media. 1-3 (Max. 6). Intensive study of problems and topics specific to the mass media, including print, broadcast, advertising, public relations and the internet. Course content varies and may include historical, legal, ethical, political, sociocultural, economic and theoretical perspectives. May dual list with COJO 4230. Graduate students are expected to follow a rigorous reading schedule and submit a major paper or research project. *Prerequisite:* graduate standing.

5233. Race, Gender, Ethnicity in the Media. 3. Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with AAST 5233 and WMST 5233; dual-listed with COJO 4233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

5250. Seminar In Organizational Communication. 3. Intensive examination of the historical and contemporary theoretical approaches and empirical research in organizational dynamics. Attention primarily focuses

on how the institutionalized collective affects and is affected by other social systems. Dual listed with COJO 4250. *Prerequisite:* graduate standing.

5260. [5985] Rhetoric and Social Justice. 3. Analyzes concepts of ableism, anti-Semitism, heterosexism, racism, sexism, and socioeconomic class through a critical/social construction framework. Attempts to develop a "working" definition of these concepts by analyzing historical and current conceptualizations and identifying marginalization and disenfranchisement as it is woven in the fabric of American society. Dual listed with COJO 4260; cross listed with AAST 5260. *Prerequisite:* graduate standing.

5310. Seminar in Mass Communications. 3. The study of contemporary, historical, critical and behavioral theories of mass communication processes. Attention primarily on the social functions performed by mediated messages. *Prerequisite:* graduate standing.

5530. Advanced New Media. 3. Addresses the theory and logistics of web design and online interactivity. Students will create and maintain a professional portfolio website that showcases their communication and design talents. It is applicable to journalism, public relations, advertising, marketing, photography, and any other media-related career path that uses new media. Dual listed with COJO 4530. Prerequisites: COJO 1000 and 9 hours in the department.

5540. Seminar in Communication Theory. 3. An intensive examination of various metatheoretical assumptions and theoretical models used in the study of communicative dynamics. *Prerequisite:* graduate standing.

5590. Seminar in Persuasion. 3. Participants in this seminar engage in dialog directed toward both 1) understanding the issues raised in contemporary persuasion research and 2) exploring potential solutions and ideas for future research. This should prompt the participants to begin their own research ventures designed to contribute to the study of communication and social influence. Dual listed with COJO 4590. *Prerequisite:* COJO 2090 and 3070.

5600. Mass Media Ethics. 3. The study of ethical theory with special emphasis on how that theory can be applied to problem solving in the media. Examines major ethical perspectives and requires the application of those perspectives to actual case studies. Graduate students are expected to follow a rigorous project. Dual listed with COJO 4600. *Prerequisite:* graduate standing.

5620. Intergroup Communication. 3. The course will provide an overview of theory and research on intergroup relations to demonstrate how communication both affects and reflects our social group memberships. The objective is to provide students with the theoretical foundation to view various contexts of communication through an "intergroup lens." Dual listed with COJO 4620. *Prerequisite:* graduate standing.

5630. Ethics in Personal Relationships. 3. Examines personal relationships and the ethical issues participants in these relationships encounter. Personal relationships are those unique relationships in which the participants cannot be replaced without altering the very nature of the relationship. Personal relationships are originated, developed, maintained, and dissolved through communication between the participants. Dual listed with COJO 4630. *Prerequisite:* COJO 4030.

5800. Foundations of Communication and Journalism. 3. Examines current issues and trends in the various areas of communication and journalism that are represented within the department. Students analyze the historical roots of these issues and trends as a way of understanding the present context and future evolution of communication and journalism scholarship. *Prerequisites:* first year of graduate study and acceptance into the COJO graduate program.

5890. Problems: Communication. 1-4 (Max. 6). *Prerequisite:* 18 hours at the 5000 level in the department.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5961. Graduate Projects. 1-4 (Max. 4). Limited to those students enrolled in a Plan B graduate program. Students should be involved in non-course scholarly activities in support of their Plan B project. *Prerequisites:* enrollment in Plan B program and departmental approval.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Criminal Justice

223 Arts and Sciences Building, 766-2988
FAX: (307) 766-3913
Web site: www.uwyo.edu/cj
Department Head: Adrienne Freng

Professors:

ADRIENNE B. FRENG, B.A. Black Hills State University 1995; M.A. University of Nebraska 1997; Ph.D. 2001; Professor of Criminal Justice 2007, 2001.

MARGARET M. MURDOCK, B.A. Creighton University 1970; M.A. Tufts University 1975; Ph.D. 1978; Professor of Political Science and Criminal Justice – Casper 1993, 1975.

Associate Professors:

SCOTT E. CULHANE, B.A. University of Tennessee 1998; M.S. University of Tennessee at Chattanooga 2000; Ph.D. University of Texas at El Paso 2005; Associate Professor of Criminal Justice 2011, 2005.

ERIC J. WODAHL, A.A. Eastern Wyoming College 1992; B.A. Chadron State College 1994; M.P.A. University of Wyoming 2003; Ph.D. 2007; Associate Professor of Criminal Justice 2008, 2012.

Assistant Professors:

JOHN H. BOMAN IV, B.A. Ohio University 2007; M.A. University of Florida 2010; Ph.D. 2013; Assistant Professor of Criminal Justice 2013.

THOMAS J. MOWEN, B.S. University of Louisville 2011; Ph.D. University of Delaware 2015. Assistant Professor of Criminal Justice 2015.

Assistant Lecturer:

SHANE T. STONE, B.S. Central Missouri State University 1992; M.S. Lindenwood University 2000; M.A. Midwestern Baptist College 2011; Assistant Lecturer of Criminal Justice 2012.

Adjunct Professors:

(See Catalog section following name for academic credentials.)

Robert A. Schuhmann, political science

Students majoring in criminal justice will be involved in a critical examination of the sources of criminal behavior and the social and political institutions and processes designed to control criminal behavior. Criminal justice majors are offered at University of Wyoming campuses in Laramie and Casper, as well as through the Outreach School.

Undergraduate Major

Students pursuing a B.A. in criminal justice must fulfill university studies and college requirements as listed in this Catalog, satisfy required prerequisites to courses in the major program, and complete a minimum of 39 credit hours in the major. Only courses in which a grade of C or better has been earned may be used to satisfy major requirements.

Foundation Courses:		**Hrs.**
CRMJ	1001	3
CRMJ	2210	3
CRMJ/SOC	2400	3
CRMJ	2685	3
CRMJ	3110	3
CRMJ	3200	3
CRMJ	3350	3
CRMJ	3490	3

Crime and Deviance (2 courses)		**Hrs.**
CRMJ	3150	3
CRMJ	3250	3
CRMJ	3500	3
CRMJ	4260	3
CRMJ	4700	3
CRMJ	4890	3

Criminal Justice Institutions & Processes (2 courses)		**Hrs.**
CRMJ	4130	3
CRMJ	4140	3
CRMJ	4150	3
CRMJ	4280	3
CRMJ	4860	3

Supporting Courses

(1 course; or 1 additional course from Crime & Deviance or Criminal Justice Institutions & Processes):

		Hrs.
CRMJ/SOC	3320	3
CRMJ/SOC	3400	3
CRMJ/POLS	4110	3
CRMJ/ANTH	4230	3
CRMJ/SOC	4250	3
CRMJ	4270	3
CRMJ/PSYC	4370	3
CRMJ/SOC	4540	3
CRMJ/PSYC	4730	3
CMRJ/POLS	4600	3
CRMJ	4750	1-12
CRMJ/PSYC	4760	3
CRMJ	4965	1-6
CRMJ	4970	9-12
CRMJ	4975	1-3
CRMJ	4990	1-3

In addition to the above required courses, it is required that students take POLS 1000, STAT 2050 or 2070, one lab science, and two semesters of a foreign language.

Forensic Science Concentration

The Criminal Justice Department offers a Forensic Science Concentration for Criminal Justice majors that consists of courses selected from several departments across the university. These inter-disciplinary courses are intended to provide a base knowledge of the field of forensic science for future educational and employment opportunities.

27 hours must be completed from among the following courses. Of these 27 hours, 14 must be upper division (3000 level or above) and 6 hours of elective coursework either from the Criminal Justice or the Forensic Science Concentration curriculum. Life Sciences 1010 and Chemistry 1020, General Chemistry I, must be taken to fulfill the University Studies Program lab science requirement.

Analytical Techniques

(minimum 10 hours)

ANTH/CRMJ 4230 Forensic Anthropology **or**
ANTH 4240 Forensic Anthropology Lab
CHEM 2230 Quantitative Analysis
CHEM 4230 Instrumental Methods of Chemical Analysis
CHEM 3550 Physical Chemistry for the Life Sciences **or**
CHEM 4507 Physical Chemistry I **or**
CHEM 4508 Physical Chemistry II
PATB 4140 Principles of Toxicology
MOLB 4170 Cloning & DNA Sequencing Laboratory
MOLB 4260 Quantitative Microscopy
MOLB 4400 Immunology
MOLB 4440 Microbial Genetics
MOLB 4490 Microbial Gene Expression Laboratory
ZOO 4425 Genetic Markers

Human Biological Structure

(minimum 9 hours)

ANTH/CRMJ 4210 Human Osteology
LIFE 3050 Genetics
LIFE 3600 Cell Biology
CHEM 2300 Introduction to Organic Chemistry **or**
CHEM 2320 or 2420 Organic Chemistry I **or**
CHEM 2340 or 2440, Organic Chemistry II
CHEM/MOLB 3610 Principles of Biochemistry
MOLB 2240 Medical Microbiology
MOLB 3000 Intro to Molecular Biology
MOLB 4600 General Biochemistry I **or**
MOLB 4610 General Biochemistry II
ZOO/KIN 2040/2041 Human Anatomy
ZOO/KIN 3115 Human Systems Physiology

Physics

(minimum 8 hours)

PHYS 1110 Physics I **and**
PHYS 1120 Physics II
or
PHYS 1310 College Physics I **and**
PHYS 1320 College Physics II

Pre-Law Concentration

The Department of Criminal Justice offers a Pre-law Concentration for Criminal Justice majors that consists of courses selected from several departments across the university. These courses were chosen to help prepare students for the challenges of law school and the practice of law. Students electing the Pre-Law Concentration are urged to seek advising early.

Along with the 33 hours of criminal justice degree requirements, an additional 27 credit hours (18 of which must be 3000-level courses or above) must be earned for the Pre-Law Concentration.

Verbal Comprehension and Expression

(Choose at least one course - min. 3 hours)

COJO 2090 Persuasion
COJO 2150 Argumentation
COJO 2260 Interviewing
COJO 3010 Business and Professional Communication
COJO 3160 Theory of Language and Society
COJO 4050 Communication and Conflict

Written Comprehension and Expression

(Choose at least two courses-min. 6 hours)

ENGL 4000 21st Century Issues in Professional Writing
ENGL 4010 Technical Writing in the Professions
ENGL 4020 Editing for Publication
ENGL 4780 History of the English Language
ENGL 4970 Writing Internship
ENGL/COJO 4061 Rhetorical Theory and Criticism

*Course will be allowed to count for the concentration hours requirement.

Critical Understanding of Human Institutions and Values

(Choose at least one course - min. 3 hours)

ECON 1020 Principles of Microeconomics
PHIL 2200 Social and Political Philosophy
PHIL 3250 Global Justice
PHIL 3300 Ethical Theory
PHIL 3350 History of Moral Philosophy
PHIL 3500 History of Science

PHIL/ENGL 3340 Philosophy of Literature (max. 3 hours)
POLS 2460 Introduction to Political Philosophy
POLS 3600 American Political Thought

Creative and Analytical Thinking

(Choose at least one course - min. 3 hours)
ENGL 2050 Creative Writing - Intro to Fiction or
ENGL 2060 Creative Writing - Intro to Non-Fiction (max. 3 hours) or
ENGL 2070 Creative Autobiographical Writing (max. 3 hours) or
ENGL 2080 Creative Writing - Intro to Poetry (max. 3 hours)
PHIL 2420 Critical Thinking
PHIL 3140 Philosophy of Science
PHIL 3420 Symbolic Logic
PHIL 3510 Introduction to Epistemology

World Cultures and International Institutions

(Choose at least one course - min. 3 hours)
HIST 1320 World Civilizations to 1450
HIST 1330 World Civilizations from 1450
INST/BUSN 2000 Introduction to International Business
POLS/INST 2310 Introduction to International Relations
POLS/INST 4340 International Organizations
ANTH 3420 Anthropology of Global Issues
POLS/INST/SOC 4300 The World System
INST/SOC 4370 Global Political Economy
ECON/INST 4710 Comparative Systems

Electives

(Select courses from this list - maximum 3 courses or 9 hours)
AMST 1030 Social Justice in the 21st Century
ANTH 1200 Introduction to Cultural Anthropology
ANTH/INST 4350 Culture Change
CNSL 2200 Intro to Student Leadership
CNSL 4520 Fundamentals of Counseling
COJO 1030 Interpersonal Communication
COJO 1040 Introduction to Human Communication
COJO 3190 Cross-Cultural Communication
COJO 4150 Legal Communication
ECON 1000 Global Economic Issues
LANG/ENGL 4750 Fundamentals of Linguistics
LANG/ENGL 4770 Sociolinguistics
PHIL 3440 Philosophy of the Mind
POLS 4090 Anglo-American Jurisprudence
POLS/INST 1200 Non-Western Political Cultures
STAT 2000 Statistics and the World or
STAT 2050 Fundamentals of Statistics or
STAT 2070 Introductory Statistics for the Social Sciences

Undergraduate Minor

A minor in criminal justice requires 18 semester hours in criminal justice. All courses must be completed with a grade of C or better. The required courses are: CRMJ 1001, CRMJ 2210, CRMJ/SOC 2400, CRMJ 3110, CRMJ 3350, CRMJ 3490.

Graduate Study

The master of public administration in criminal justice is offered by the Department of Criminal Justice. The MPA curriculum consists of 39 credits including core (7), option-core (2) and criminal justice (4) courses. Core courses are designed to develop comprehensive administrative, managerial, quantitative, financial and analytical skills with an understanding of their applications in different sectors. Criminal Justice courses provide opportunity to supplement the core courses and facilitating the achievement of professional and career objectives in the field. One of the four electives is a required internship in the criminal justice field and can be replaced with an additional elective if the MPA Director approves a waiver. Students may complete the degree within 2 years full-time or approximately 3-4 years part-time.

Program Specific Admission Requirements

Master of Public Administration
Plan B (non-thesis)

Applicants for the M.P.A. may have any undergraduate major. Only POLS 5000 may be taken prior to full admission into the program with permission of the M.P.A. director.

Program Specific Degree Requirements

Master of Public Administration
Plan B (non-thesis)

Required Core Courses
POLS 5000 Survey of Public Administration
POLS 5400 Public Personnel Management
POLS 5410 Administrative Behavior & Theory of Organizations
POLS 5440 Principles & Processes of Government Budgeting
POLS 5510 Public Policy and Program Management
POLS 5684 Empirical Analysis for Public Administration
POLS 5690 Capstone in Public Management

Option-Core Courses

All MPA students are required to choose 2 courses designated as option core credit, defined as courses relating to more specific focuses on public administration and taught by MPA faculty members.

Criminal Justice Courses

Students must complete the core and option-core elements of the MPA degree requirements, but may apply CRMJ program coursework as MPA elective requirements, making the degree an MPA with a criminal justice concentration.

All students must take the following two courses:
CRMJ 5000 Survey of Criminal Justice
and
CRMJ 5100 Public Policy and Crime

Students must also enroll in three (3) credit hours of CRMJ 5500 Internship in Criminal Justice

Students will select *one* elective course. These courses are offered on a rotating basis and include the following options: CRMJ 5130 Leadership and Management in the Criminal Justice System; CRMJ 5270 Discrimination and the Law; CRMJ 5150 Crime Causation; CRMJ 5280 Comparative Criminal Justice.

In addition to graduate coursework, M.P.A. students must complete a series of papers constituting the Plan B project. It is the purpose of POLS 5690, Capstone in Public Management, to be a framework within which students initiate and substantially complete their Plan B projects.

Following the completion of all other requirements, the M.P.A. student is required to pass a comprehensive oral examination covering the information contained within his/her program of study as well as a defense of the Plan B projects. The oral examination is also conducted within the framework of the POLS 5690 Capstone course.

Significant administrative experience is required of all M.P.A. graduates. If the M.P.A. student has little or no administrative experience an internship is required and will be included as 3 hours of the required elective credits.

Students entering the M.P.A. Program are expected to possess basic computer literacy, and to have access to a computer for such purposes as communicating with professors via e-mail, receiving M.P.A. Program memos, conducting research on the Web, retrieving articles from course documents libraries, working on course projects, and for conducting interactive/electronic class discussion.

Students must maintain a graduate GPA of 3.0.

Students must complete the CAPP program in lieu of a program of study.

Criminal Justice (CRMJ)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1001 [2120] [ADJU 2120]. Introduction to Criminal Justice. 3. Introduces the American criminal justice system. Examines nature of crime and describes historical and philosophical foundations of law enforcement agencies, criminal courts and correctional institutions. Discusses major issues facing the criminal justice system.

1005. Issues in Criminal Justice. 1. [I,L◀▶(none)] Introduces students to Criminal Justice through a study of a contemporary issue or problem from the perspectives of the various subfields. *Prerequisite:* criminal justice major.

2210 [ADJU 2210]. Criminal Law. 3. Introduces the fundamental principles of substantive criminal law: the history and philosophy of modern criminal law, the basic dimension of criminality, the elements of major crimes, criminal defenses and the nature of criminal sanctions. *Prerequisite:* CRMJ 1001 and completion of a USP V course.

2400 [ADJU 2400]. Criminology. 3. Generally introduces the nature of crime, statistics on crime, types of criminal behavior and explanations of crime. Cross listed with SOC 2400. *Prerequisite:* SOC 1000 or equivalent.

2685 [CRMJ 3680, ADJU 3680]. Research Methods in Criminal Justice. 3. Introduces students to fundamental issues associated with the application of scientific methods to criminal justice problems. Students examine research designs involving ethnographic, archival, historical, and quantitative methods and how they relate to criminal justice issues. Prerequisite: enrollment limited to criminal justice majors.

3110. Criminal Courts and Processes. 3. Examines the structure, organization and operation of criminal courts and their role in the larger criminal justice system; the process of adjudication of criminal cases from initial charging through post-conviction review; the constitutional rights of the accused; and the roles of the major courtroom participants. *Prerequisites:* CRMJ 2210 or declared Public Law minor.

3200 [ADJU 3200]. Ethics in Administration of Justice. 3. Introduces basic ethical theories, emphasizing how ethical theory can be applied to contemporary problems in law enforcement, corrections and adjudication. Students will be called upon to apply these various ethical frameworks to typical moral dilemmas in criminal justice. *Prerequisites:* CRMJ 2210, 2400.

3250 [ADJU 3250]. Juvenile Delinquency. 3. Considers the nature of delinquency, including an analysis of treatment methods and the juvenile justice system. *Prerequisites:* CRMJ 1001.

3320. Family Violence. 3. Prevalence, types and causes of family violence are examined with an emphasis on a sociological understanding. Theories of violence are applied to the conflict that exists within the family institution such as woman battering, courtship conflict and child abuse. *Prerequisite:* 6 hours of sociology or equivalent social science (including SOC 1000).

3350 [ADJU 3350]. Correctional Theory and Practice. 3. Examines the various components of the correctional complex from both theoretical and practical frameworks. Students are exposed to the abundance of research that informs current correctional practice and will be called upon to critically evaluate this research and its implications for correctional policy and practice. *Prerequisite:* CRMJ 1001; CRMJ 2685.

3400 [ADJU 3400]. Deviant Behavior. 3. Examines theory and research relevant to understanding deviant behavior in general and specific types of individual and subcultural deviancy. Cross listed with SOC 3400. *Prerequisite:* SOC 1000 or equivalent.

3490 [ADJU 3490]. Issues in Policing. 3. Examines the various components of policing from both theoretical and practical frameworks. Students are exposed to the abundance of research that informs current policing practice and will be called upon to critically evaluate this research and its implications for policing policy and practice. *Prerequisites:* CRMJ 1001, CRMJ/SOC 2400, CRMJ 2210, and junior standing.

3500. Drugs and the Criminal Justice System. 3. Focus on drugs and their impact on society. Particular interest is paid to the extent of drug use/abuse in America, and the effects of this problem on the criminal justice system and society as a whole. Strategies for controlling both supply and demand are discussed. *Prerequisites:* CRMJ 1001 and CRMJ/SOC 2400.

4110 [ADJU 4110]. Constitutional Law: Civil Liberties and Rights. 3. Encompasses case-study analysis of judicial decisions and policies of the constitutional interpretation of the 1st Amendment (freedom of speech, press, association and religion), privacy rights, the rights of the criminally accused, and civil rights (racial and gender equality). Cross listed with POLS 4110. *Prerequisites:* 9 hours of POLS courses, POLS 3100 recommended.

4130 [ADJU 4130]. Leadership and Management in the Criminal Justice System. 3. There is a clear need for managers and administrators to understand leadership and ethics. This course is designed to provide students with a foundation in the management and leadership discourse surrounding criminal justice agencies. Dual listed with CRMJ 5130. *Prerequisites:* CRMJ 1001 and 3350 or 3490.

4140 [ADJU 4140]. Criminal Legal Procedure. 3. Examines the constitutional principles that safeguard the rights and liberties of criminal suspects and constrain police during the investigatory stages of the criminal justice process: arrest; search and seizure; interrogation; undercover operations; pretrial identification; and the exclusionary rule. *Prerequisites:* CRMJ 1001, 2210, and 2400 or declared Public Law minor.

4150. Community-Based Corrections 3. Designed to provide students with an in-depth look at the community corrections complex. It will examine the history and growth of community corrections, the probation system, methods of post-incarceration supervision, intermediate sanctions, and correctional programming and treatment in the community. *Prerequisite:* 9 hours of Criminal Justice (CRMJ 3350 recommended).

4151 [3150]. Crime Causation. 3. Examines the causal mechanisms that produce crime. Theoretical perspectives and empirical research from various disciplines will be evaluated, with particular emphasis placed on social factors that may cause crime. Policy implications of the different perspectives will be discussed. Dual listed with CRMJ 5151. *Prerequisite:* CRMJ/SOC 2400.

4230. Forensic Anthropology. 3. Introduces methods and purposes of physical anthropology as applied in human identification for law enforcement agencies. Cross listed with ANTH 4230. *Prerequisite:* ANTH 1100.

4260. Gangs. 3. Considers the nature and the characteristics of gangs and gang members. The theoretical and empirical evidence regard-

ing the phenomenon of gangs is evaluated. Particular emphasis is placed on the social and policy implications of this social problem. *Prerequisites:* CRMJ/SOC 2400 or CRMJ 3250 and upper division standing in criminal justice.

4270 [ADJU 4270]. Discrimination and the Law. 3 (Max. 6). A sociological examination of specific examples of discrimination and justice within the law and the legal system. Topics routinely vary and may include race, gender, religion, cultures or sexuality. Class may be repeated for credit when topics differ. *Prerequisites:* SOC 1000 and junior status.

4280 [ADJU 4280]. Comparative Criminal Justice. 3. [WC,G◀▶(none)] Compares the incidence, trends, control, treatment and prevention of crime across nations using mainstream criminological theories. Examines criminal justice systems from an international perspective and draws lessons for the American society. Explores forms of international cooperation and difficulties in the control of transnational crimes. *Prerequisite:* WA, WB, CRMJ 1001, junior standing.

4350 [ADJU 4250]. Sociology of Law. 3. A consideration of sociological concepts such as inequality, stratification, social control and social change in an analysis of the law and legal institutions. Topics include: the role of the police, lawyers, judges, and juries; race, sex, age, and sexuality discrimination and civil rights; free speech, and toxic torts. Cross listed with SOC 4350. *Prerequisites:* SOC 1000 and upper division status. (Offered based on sufficient demand and resources)

4370 [ADJU 4370]. Criminal Psychopathology. 3. Provides an overview of current theories and empirical evidence concerning relationship between psychological disorder and criminal behavior. Examines various clinical syndromes and their role in biological, social and psychological genesis of crime, as well as the concept of criminal responsibility. Cross listed with PSYC 4370. *Prerequisite:* 6 hours in psychology.

4540. Women, Crime and the Law. 3. Addresses status of women as offenders and as victims in society and in the criminal justice system. Considers special role of women as professionals in the criminal justice system. Cross listed with WMST 4540. *Prerequisite:* WMST/SOC 1080, 3500 or SOC 2400.

4600 [ADJU 4600]. Political Violence. 3. Examines causes and consequences of violence both among individuals and among nations. Cross listed with POLS 4600. *Prerequisites:* POLS 1000 or SOC 1000. (Normally offered every other year)

4700. Global Terrorism. 3. Examines the concept, causes, incidence, types, consequences of, and responses to terrorism. Highlights the distinction between domestic and international terrorism and expands on the latter within the framework of the global environment. *Prerequisites:* CRMJ 1001 and CRMJ 2400 and CRMJ 2210; or POLS 2310.

4710 [ADJU 4710]. Police Deviance. 3. A general description of police officials' activities which are inconsistent with the officers' official authority, organizational authority, values, and standards of ethical conduct (which are usually implied, rather that stated). Deviance can encompass a plethora of behaviors for which an officer can be disciplined. *Prerequisites:* POLS 1000 and CRMJ 1001.

4730. Psychology and Law. 3. Exposes students to the application of psychological principles to problems in law. Emphasizes the American trial system, correction systems and civil commitment. Cross listed with PSYC 4730. *Prerequisite:* 12 hours in psychology.

4750 [ADJU 4750]. Internship in Criminal Justice. 1-12 (Max. 12). Integrates practical criminal justice experience with academic knowledge. Students participate in specifically assigned duties and observe broader activities of the sponsoring organization, and reflect upon these experiences through written assignments. *Prerequisite:* junior standing, 2.5 cumulative GPA, completion of at least 6 upper division hours in CRMJ and consent of instructor.

4760. Child Maltreatment. 3. Lecture and seminar. Examines the phenomenon of child abuse and neglect. Includes an overview of attitudes towards and legal definitions of child maltreatment. Explores parental factors, contextual influences and developmental consequences of maltreatment. Relies heavily on current research in child abuse and neglect. Emphasizes policy implications. Cross listed with PSYC 4760. *Prerequisite:* 6 hours in psychology. (Offered alternate years)

4860. Social Inequality, Crime, Criminal Justice and the Law. 3. Provides an in-depth look at social inequality and its impact on crime, criminal justice, and the law. Particular emphasis will be given to the individual and interactive effects of race, class, and gender inequality. Critical theoretical perspectives that promote social justice will be the primary analytical focus. *Prerequisite:* 9 hours of CRMJ related coursework.

4890. Serial Killers. 3. Introduces students to particular case studies of notorious serial killers and explores current methods of tracking and apprehending such individuals. Draws on readings, films, and lectures. *Prerequisites:* junior standing and 6 completed hours of upper division criminal justice courses.

4965. Research Hours in Criminal Justice. 1-6 (Max. 6). Provides undergraduates with an opportunity to assist in conducting various aspects of research under the supervision of criminal justice faculty. Specific research activities and requirements will be determined in consultation with the sponsoring faculty person. Credit is only available for research corresponding to enrollment in this course. Dual listed with CRMJ 5965. *Prerequisites:* upper division standing and consent of instructor required in advance.

4970 [ADJU 4970]. Criminal Justice Practicum. 9-12 (Max. 12). Integrates academic knowledge with applied administration of justice experience through supervised field placement. Students are required to complete reading, discussion and writing assignments in addition to their practicum responsibilities. *Prerequisites:* junior standing and consent of practicum coordinator.

4975 [ADJU 4975]. Readings. 1-3 (Max. 6). Special programs of readings in criminal justice related subjects will be outlined to meet needs of individual students. *Prerequisite:* consent of instructor.

4990 [ADJU 4990]. Topics: ___. 1-3 (Max. 6). Intended to accommodate various special subjects not offered as regular courses. *Prerequisites:* as listed for housing department's topics course.

5000. Survey of Criminal Justice. 3. Provides an overview of criminal justice theory by providing critical evaluation and discussion of research in the criminal justice field. It will emphasize seminal works and review current research concerning the structure, function, operation, interaction of the criminal justice system's primary components, and future trends. *Prerequisite:* Admission to the MPA Program.

5100. Public Policy and Crime. 3. This course is designed to take a multidimensional look at public policy issues related to the prevention and control of crime in the United States. Issues covered include the development, implementation, and evaluation of crime control policy. *Prerequisite:* Admission to the MPA Program.

5130. Leadership and Management in the Criminal Justice System. 3. There is a clear need for managers and administrators to understand leadership and ethics. This course is designed to provide students with a foundation in the management and leadership discourse

surrounding criminal justice agencies. Dual listed with CRMJ 4130. *Prerequisites:* graduate standing or consent of instructor.

5151. Crime Causation. 3. Examines the causal mechanisms that produce crime. Theoretical perspectives and empirical research from various disciplines will be evaluated, with particular emphasis placed on social factors that may cause crime. Policy implications of the different perspectives will be discussed. Dual listed with CRMJ 4151. *Prerequisite:* graduate standing.

5500. Internship in Criminal Justice. 3. Educationally-oriented assignments for work in selected criminal justice agencies, with tutorial types of supervision. Offered Satisfactory/Unsatisfactory only. *Prerequisite:* Admission to the MPA Program.

5965. Research Hours in Criminal Justice. 1-6 (Max. 6). Provides students with an opportunity to assist in conducting various aspects of research under the supervision of criminal justice faculty. Specific research activities and requirements will be determined in consultation with the sponsoring faculty person. Credit is only available for research corresponding to enrollment in this course. Dual listed with CRMJ 4965. *Prerequisites:* upper division standing and consent of instructor required in advance.

English

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FAX: (307) 766-3189
Web site: www.uwyo.edu/english
Department Chair: Peter Parolin

Professors:

SUSAN ARONSTEIN, B.A. Seattle Pacific University 1980; M.Sc. Edinburgh University 1984; Ph.D. Stanford University 1987; Professor of English 2006, 1987.

SUSAN C. FRYE, B.S. Smith College 1974; M.A. University of New Mexico 1981; Ph.D. Stanford University 1986; Professor of English 2001, 1986.

ALYSON HAGY, B.A. Williams College 1982; M.F.A. University of Michigan 1985; Professor of English 2008, 1996.

CAROLINE McCRACKEN-FLESHER, M.A. University of Edinburgh 1980; M.A. Brown University 1986; Ph.D. 1989; Professor of English 2004, 1989.

DAVID ROMTVEDT, B.A. Reed College 1972; M.F.A. University of Iowa 1975; Professor of English 2008, 1995.

Associate Professors:

CAROLYN ANDERSON, B.A. Auckland University 1981; M.A. 1984; Ph.D. Stanford University 1992; Associate Professor of English 2001, 1993.

JEANNE E. HOLLAND, B.A. Auburn University 1978; M.A. 1981; Ph.D. State University of New York, Buffalo 1989; Associate Professor of English 1995, 1989.

KELLY KINNEY, B.A. Purdue University 1992; M.A. University of Nebraska-Omaha 1996; Ph.D. Ohio University 2005; Associate Professor of English and Director of Writing Programs 2015.

MICHAEL KNIEVEL, B.A. Creighton University 1995; M.A. 1997; Ph.D. Texas Tech University 2002; Associate Professor of English 2009, 2002.

CLIFFORD J. MARKS, A.B. University of Michigan 1983; M.A. State University of New York, Buffalo 1988; Ph.D. 1992; Associate Professor of English 2000, 1993.

KATE NORTHROP, B.A. University of Pennsylvania 1991; M.F.A. University of Iowa 1995; Associate Professor of English 2009, 2008.

ERIC W. NYE, B.A. St. Olaf College 1974; M.A. University of Chicago 1976; Ph.D. 1983; Associate Professor of English 1989, 1983.

PETER PAROLIN, B.A. University of British Columbia 1988; M.A. University of Pennsylvania 1991; Ph.D. 1997; Associate Professor of English 2003, 1997.

CHRISTOPHER CASKEY RUSSELL, B.A. Western Washington University 1993; M.A. 1996; Ph.D. University of Oregon 2001; Associate Professor of English 2009, 2004.

BRAD WATSON, B.A. Mississippi State University 1978; MFA University of Alabama 1985. Associate Professor of English 2009, 2005.

Assistant Professors:

JASON BASKIN, A.B. Harvard University 2000; M.A. Princeton University 2006; Ph.D. 2008; Assistant Professor of English 2010.

MICHAEL EDSON, B.A. Virginia Tech University 2003; M.A. University of Delaware 2005; Ph.D. 2011; Assistant Professor of English 2014.

ANDREW FITCH, B.A. University of Wisconsin, Madison 1997; Ph.D. Graduate Center of the City University of New York 2009; Assistant Professor of English 2009.

ERIN FORBES, B.A. Reed College 2002; M.A. Princeton University 2005; Ph.D. Princeton University 2009; Assistant Professor of English 2009.

SCOTT HENKEL, B.A. Western Michigan University 1997; M.A. Ohio University 2000; Ph.D. Michigan State University 2007; Assistant Professor of English 2015.

JULIA OBERT, B.A. University of Western Ontario 2004; M.A. University of British Columbia 2006; Ph.D. University of California, Irvine 2011; Assistant Professor of English 2011.

DANIELLE PAFUNDA, B.A. Bard College 1999; M.F.A. New School University 2002; Ph.D. University of Georgia 2008. Assistant Professor of English 2008.

JASON THOMPSON, B.A. Pacific Lutheran University 1996; MFA University of Arizona 2000; Ph.D. 2008; Assistant Professor of English 2008.

ARIELLE ZIBRAK, B.A. University of Rochester 2003; M.A. Boston University 2007; Ph.D. 2013; Assistant Professor of English 2014.

Associate Lecturer:

PAUL BERGSTRAESSER, B.A. Oberlin College 1989; M.A. Northern Michigan University 2000; Ph.D. University of Illinois, Chicago 2007; Associate Lecturer in English 2013, 2007.

APRIL HEANEY, B.A. University of Wyoming 1998; M.A. 2000. Associate Lecturer in English 2009, 2005.

VAL PEXTON, B.A. Humboldt State University 1986; B.A. University of Wyoming 1998; M.A. 2001; M.F.A. 2008; Associate Lecturer in English 2013, 2009.

JOYCE STEWART, B.A. Felician College 1994; M.A. Creighton University 1998; Associate Lecturer in English 2013, 2008.

MARGARET VAN BAALEN-WOOD, B.A. University of Wyoming 1983; M.A. 2003. Associate Lecturer in English 2009, 2004.

Assistant Lecturers:

RICK FISHER, B.A. University of Wyoming 2002; M.A. 2006; Assistant Lecturer of English 2011.

JASON KIRKMEYER, B.A. University of Wyoming 2002; M.A. 2004; Assistant Lecturer of English 2011.

Study in the English department today embraces literature, creative and expository writing, and the nature and workings of language. Students in the department's programs can learn to read with pleasure and understanding, to write with grace, clarity and force, and to think with greater penetration and breadth. With these accomplishments, students are prepared for lives and work in which their power to understand, read, write and communicate will serve themselves and

others, some specifically in careers in writing or teaching, some in professions of law, medicine, administration or almost any other field.

English studies center on the reading of what people have said, sung or written about their lives, their desires and the whole experience of being human. Literature is a great inheritance, a tradition that reaches back through the centuries, but it is also continually growing and changing. New theories about literature, and new and rediscovered literature itself, renew the ancient functions of literature to reflect, support and enhance the lives of the men and women who read it.

Assessment of English Undergraduate Learning

Through an active and ongoing assessment of our program, we have identified the following outcomes that are expected of each student graduating with a Bachelor of Arts in English. We will continue to assess our curriculum to ensure these outcomes are being met:

UW students graduating with a Bachelor of Arts in English will have demonstrated an ability to:

1. Read, interpret, and write about a diverse range of texts in English, for example literature, film, digital media, and popular culture;

2. Understand those texts analytically and critically;

3. Understand those texts on the basis of careful close reading;

4. Understand those texts through past and current literary theory;

5. Understand that those texts are culturally constructed in time, place, and tradition;

6. Understand how those texts inform culture;

7. Participate in the critical and cultural discourses of English;

8. Participate clearly and appropriately through multiple spoken and written forms

Undergraduate Major

Requirements **Hrs.**

Lower-division surveys of literature in English
2425, 2430, 2435 9

Shakespeare or Renaissance Literature
4110, 4120, or 4170.....3

4000-level courses in literature before 1900, in two different periods—4140, 4160, 4180, 4190, 4200, 4210, 4220, 4240, 4250, 4260, 4310, 4320, 4360, 4830 (exclusive of the Shakespeare/Renaissance requirement) 6

Emerging fields and approaches.....3
3610, 3710, 4450, 4460, 4470, 4640, 5360, or 5870

Senior Seminar (4990).....3

Electives (at least 6 hours must be at the 4000-level) 12

Total hours ***36***

(Courses in creative writing and professional writing may count as electives toward the major.)

Concentration in Literary Studies: Students wishing to concentrate in literary studies, including students interested in pursuing graduate degrees in English, should attempt to take the following upper-division courses: a course in Chaucer or in Medieval literature; a Shakespeare course; another course in English literature before 1800 (exclusive of Chaucer and Shakespeare); a course in 19th-Century English literature; two courses in American literature; a course in literature after 1900; the Senior Seminar; a course in Emerging fields and approaches.

In addition, in order to introduce its majors to language, culture, and comparative literature, the English department requires three semesters of a single foreign language. The choice of language should be made in consultation with the student's adviser and in consideration of career plans. For instance, students planning graduate study in literature may wish to choose a relevant modern or classical language. Or, a student in disability studies may substitute American Sign Language or Braille with permission of the assistant chair.

Within the framework above, each student should construct, with the help and approval of the adviser, a balanced and coherent program.

Only those courses in which a grade of C or better has been earned may count toward the 36 hours required for the B.A. (the B.S. is not offered) and the foreign language requirement. No 1000 courses count toward the B.A.

Advanced Standing

Advanced standing in English is required for all majors prior to taking the senior seminar (ENGL 4990). To be eligible for advanced standing in English, the student must have completed 24 hours of English course work above Writing A, including the 3 required survey courses (2425, 2430, 2435). Each course must have been passed with a grade of C or better. Approved transfer courses from other institutions will satisfy the prerequisites for advanced standing. English 4990 should be taken in the next-to-the-last semester before graduation.

English Honors Program

Requires a 3.5 GPA and a senior honors paper and defense. See the English department for information.

Minor in Literary Studies

To minor in literary studies, a student must complete the following sequence of courses:

Requirements **Hrs.**

2000/3000-level surveys 9
(2425, 2430, 2435, 3150, 3180, or 3380)

4000-level literature courses.....9

Alternatively, a student, in close consultation with an English department adviser, may construct his or her own program. Only those courses in which a grade of C or better has been earned may count toward the Literary Studies minor. For more information, please come to the English Department office, 201 Hoyt Hall.

Minors in Writing

The writing minors are designed to be used with any major. English majors may choose to have a minor in creative or professional writing, but at least 12 credit hours in the minor must be from courses not counted toward the student's major. All courses counted toward the writing minors must be completed with grades of C or better. Students in either minor must consult with an adviser from the minor in designing their programs.

Minor in Creative Writing. The creative writing minor consists of six courses (18 hours) in creative writing and literature. Four of these courses will be in creative writing (12 hours) and must adhere to the following sequence: ENGL 1040 Intro to Creative Writing, **two** Lower Division Creative Writing courses (at the 2000-level), and an Upper Division course (4050). In addition, two courses will be in literature (6 hours), one of which must be at the 3000- or 4000-level. All courses must be completed with grades of C or better.

This minor is designed to be used with any major and must be designed in conjunction with a creative writing adviser. English majors may choose to have a minor in creative writing, but "at least 12 credit hours in a minor must be from courses not counted toward the student's major" (UW *University Catalog*). Each course must be passed with a grade of C or better.

Minor in Professional Writing. This minor is designed for students in any major who are considering careers in professional or technical writing (including teaching, publishing or editing, web authoring, public relations, and journalism) as well as for students who simply seek writing expertise beyond the General Education requirements. The minor will offer in-depth instruction in writing that will prepare them for the numerous careers in which effective written communication is highly valued.

To complete the 18 credits required for the minor, students take the foundations courses (ENGL 2005 or ENGL 2035 AND ENGL 4000), at least two upper-division professional writing courses (ENGL 4010, 4020, 4025, 4030, 4050, 4075, and/or 4970), and up to two additional elective courses approved by their adviser (0-6 credits).

Teacher Certification

Students seeking the B.A. in English may also be certified for public school teaching by completing additional requirements set forth by the College of Education, via a concurrent major in English and English Education.

Prerequisites

Most 2000-level courses require the completion of the WA requirement. Normally, 3000-4000-level courses have the prerequisites of 6 hours of 2000-level literature courses. Students without certain prerequisites should consult the English Department for permission to enroll.

Graduate Study

The M.A. graduate program in English offers two concentrations leading to the master of arts degree: Literary Studies, and Composition and Rhetoric. The department also offers an M.F.A. in creative writing: a 40-hour studio degree in poetry, fiction, or creative non-fiction.

Program Specific Admission Requirements

Master of Arts in English

In addition to the minimum requirements set forth in this *Catalog*, the Department of English requires that students demonstrate by means of an official transcript that they have a solid undergraduate record with course work in English. That said, the department welcomes degrees in English or other disciplines from four-year colleges or universities.

Depending on their undergraduate preparation, some successful applicants may be required to take additional or specific courses toward the English master's degree.

Students must show knowledge of one foreign language, ordinarily ancient or modern European. Students may complete a language requirement concurrently with their program.

Candidates must submit GRE general test scores, a writing sample, and a 500-word statement of purpose.

Students should consult the M.A. web site or contact the department for specific admission information and deadlines.

Master of Fine Arts in Creative Writing

In addition to the minimum requirements set forth in this *Catalog*, the Creative Writing M.F.A. Program requires that students demonstrate by means of an official transcript that they have a solid undergraduate record. The M.F.A. program welcomes degrees in any discipline from four-year colleges or universities. Candidates must submit GRE general test scores, three letters of recommendation, a writing sample consisting of no more than 25 pages of prose or 10 pages of poetry, and a 500-word statement of purpose. Students should consult the M.F.A. web site or contact the department for specific admission information and deadlines.

Program Specific Graduate Assistantships

Teaching assistantships are available to qualified applicants. Full assistantships carry an annual stipend and a remission of full-time tuition and fees, and require the teaching of freshman English - currently one section per term. (Sections meet three hours each week and are composed of a maximum of 23 students.)

Each fall the department conducts a week-long orientation for new teaching assistants and a subsequent series of colloquia for all graduate assistants. Each assistant is assigned an experienced teacher in the department as a mentor, to be available throughout the semester for consultation on teaching and grading techniques.

Program Specific Degree Requirements

Master of Arts in English Plan A (thesis)

The Department of English offers two concentrations within the master of arts degree. A concentration consists of three courses chosen from among those designated by the department as belonging to that concentration, together with other courses to total 26 hours. The concentration insures coherence in each student's graduate program; breadth is insured by a distribution of courses. Much of each student's program is taken in courses outside the concentration. Seminars will usually include students from all concentrations.

Literary Studies. Working from a variety of perspectives, this concentration focuses on the study of literature and of other culturally significant texts and materials, including, for example, film, oral materials, and political documents.

Rhetoric and Composition. Founded in the reflective practice of different kinds of writing, this concentration emphasizes the theory, research, and scholarship bearing on the production of discourse; it offers training for writing and for teaching that can include teaching of ESL, composition, and creative writing.

26 hours of coursework and a thesis for 4 additional hours (ENGL 5960).

A 1 credit course in bibliography and research methods.

A course in contemporary theory.

Courses in at least three different periods, genres, major figures, or approaches.

A reading exam and final oral examination covering coursework as well as the thesis.

With approval of the graduate adviser, a student may take a maximum of 3 hours credit outside the department.

Students take most of their courses at the 5000 level; a student may take no more than two 4000-level courses toward the M.A. degree.

Master of Fine Arts in Creative Writing Plan A (thesis)

The Creative Writing M.F.A. Program offers three areas of concentration: poetry, fiction, and creative non-fiction. A concentration consists of three workshops,

a minimum of 10-12 semester hours, in the appropriate area. (An additional workshop outside the student's main genre is also required.)

M.F.A. students follow the guidelines for Plan A. The M.F.A. degree requires 34-36 hours of courses and a thesis for 6 additional hours of thesis research as ENGL 5960 for a total of 40-42 hours.

Only those courses in which a B or better has been earned may be applied to the graduate program of study.

All courses must be taken for a grade unless offered for S/U only. No graduate credit is allowed for grades S and U.

The cumulative GPA must be at least 3.0 to receive a degree. Courses below 4000 will not count toward the degree nor will they be figured in the GPA, although they will appear on the transcript.

Four workshops, normally 4 credit hours each, 14-16 hours (one workshop must be outside the student's main genre).

Two courses in Literary Studies, 4000 or 5000 level, 6 to 8 hours min.

3 elective courses, 9 hours min.

Thesis, at least 6 hours (may be taken incrementally).

Professional internship, 3 hours.

English (ENGL)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1008. Introduction to Academic Writing. 3. Prepares students for English 1010, the required first-year writing course. Emphasizes aspects of writing essential to effective communication, including paragraph and essay organization, the use of support and detail, sentence and clause structure, diction and mechanics. Offered for S/U only.

1009. IC In Pop Culture. 1. Complements WA writing activities, provides opportunities for students to do thematic readings, expand their understanding of diversity issues, learn about the intellectual expectations of college life, and become acquainted with the rich resources of the UW campus. Linked with WA course. *Prerequisite:* concurrent enrollment in ENGL 1010.

1010. College Composition and Rhetoric 3. [WA◀▶COM1] A composition course emphasizing expository writing and close, analytical reading. A grade of C or better is required to meet the WA requirement. Students may not have credit in both ENGL 1010 and UWYO 1000, 1110 or 1210.

1030. Intellectual Community in Cinema Etc. 3. [I◀▶(none)] Introduces students to a range of issues within the humanities through the analysis of film, television, and theater. Taught respectively by Modern and Classical Languages and English. Cross listed with LANG 1030.

1040. Intellectual Community: Introduction to Creative Writing. 3. [I◀▶(none)] Focus on critical learning skills as they relate to creative writing. Read from a variety of genres, attend literary events on campus, acquire research skills, and produce creative writing. Will produce portfolios of creative work in these areas, along with a self-reflective essay applying the critical skills learned throughout the semester.

1050. Literature and Film from 1940 to the Present. 3. A study of contemporary texts and films from various cultures, introducing the variety and vigor of recent world literature. Does not count toward the English major.

1080. Introduction to Women's Studies. 3. [CH,D◀▶(none)] An introduction to key issues in women's studies. A topical examination of women's participation in and relationship to institutions of society, such as family and school, as well as processes and activities, such as work, art and politics in historical and cross-cultural analysis. Cross listed with WMST 1080.

1100. FIG in: Special Topics. 3. [I,L◀▶(none)] Anchor course for Freshman Interest Groups (FIG) which each fall presents a FIG-related Topic focus. Prerequisite: enrollment in designated FIG section.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2005. Writing in Technology and the Sciences. 3. [WB◀▶COM2] Develops writing styles and techniques, document design and formats, and audience/readership considerations that are specifically suited to technological and scientific fields of study. The course concludes with a student-directed long form report. *Prerequisite:* successful completion of WA.

2020. Introduction to Literature. 3. [CH,WB◀▶COM2] An introduction to literary study including poetry, fiction and drama. *Prerequisites:* WA; sophomore standing.

2030. Critical Reading and Writing. 3. [WB◀▶(none)] Provides practice and guidance in writing expository essays. *Prerequisites:* WA; sophomore standing.

2035. Writing for Public Forums. 3. [WB◀▶COM2] Introduction to professional writing that focuses on analyzing and producing texts designed to influence public opinion. Genres may include letters, editorials, web pages, pamphlets, e-mail, speeches and position papers. Focuses on skills in collaboration and use of technology necessary for ethical, effective participation in public discourse. *Prerequisite:* WA.

2050. Creative Writing-Introduction to Fiction_____. 3 (Max. 6). Analyzes forms of fiction and the practice of creative writing at an introductory level. *Prerequisite:* WA.

2060. Creative Writing-Introduction to Nonfiction_____. 3 (Max. 6). The new nonfiction course will be described according to the emphasis the individual professor chooses to impart. In general, the course will teach students to research, organize, and express themselves in a nonfiction genre, such as essay, memoir, article, biography, autobiography, etc. *Prerequisite:* WA.

2070. Creative Autobiographical Writing. 3. Students read and explore in writing five autobiographical forms: brief bio for publicity and job application purposes, memoir, personal essay, confession and fictional monologue. What you can reveal about yourself, when and how and for whom. *Prerequisite:* completion of WA.

2080. Creative Writing-Introduction to Poetry_____. 3 (Max 6). Analyzes forms of poetry and practice of creative writing at introductory level. *Prerequisite:* WA.

2125. Writing in Popular Genres. 2. [WB◀▶(none)] Analyze and write in a variety of popular fiction and non-fiction genres. Study publishers' descriptions and read examples and critical analysis of the genres. Finally, produce a rhetorical description and an original text work in one chosen genre. *Prerequisite:* ENGL 1010.

2130. Creative Impulse: Literature and the Fine Arts. 3. Centers on literature with analogous examples drawn from painting, sculpture, architecture and music. Focuses on the variety of ways in which people perceive, evaluate and interpret reality.

2170. The Bible as Literature. 3. A study of the Bible as a body of literary expression with an introduction to critical technique appropriate to such study. *Prerequisite:* WA.

2190. African Literature. 3. A study of the modern literature of Africa written in English, against its background of the continent's oral traditions. *Prerequisite:* WA.

2240. Arthurian Legend. 3. An introduction to both Arthurian romance and writing about literature. Traces the Arthurian Legend from its roots in Welsh mythology through its development in the Middle Ages and to its current manifestations in popular culture. *Prerequisites:* WA; sophomore standing.

2340. Native American Culture and Literature. 3. [CH,D◀▶(none)] Broad cultural study of Native Americans, past and present. Emphasizes folklore and literature. Cross listed with AIST 2340. *Prerequisite:* WA.

2345. American Indians in Hollywood Film. 3. [CH◀▶(none)] Examines the ways Hollywood film has constructed various forms of racial identity for American Indians. Cross listed with AIST 2345. *Prerequisite:* WA.

2350. African American Literature. 3. [WB,D◀▶(none)] Encompasses poetry, fiction, drama and autobiography from the Harlem Renaissance and earlier to present. Cross listed with AAST 2350. *Prerequisite:* WA.

2360. Mexican American Literature. 3. [CH,D◀▶(none)] Discusses literary reflections of Chicanoism. Studies literature of the Hispanic Southwest, Mexican-American folklore and the contemporary Chicano movement. Cross listed with CHST 2360. *Prerequisite:* WA.

2400. Introduction to Folklore. 3. An introduction to forms of folklore and their relation to cultural settings. Focuses on myths, folktales, legends, ballads, proverbs, riddles, etc. from various cultures. *Prerequisite:* WA.

2410. Literary Genres. 3 (Max. 6). [CH,WB◀▶H] Studies specific genres of literature. Emphasis will vary (poetry, fiction, drama, etc.) from semester to semester, depending on curricular needs. *Prerequisite:* WA.

2425. Literatures in English I. 3. [CH◀▶(none)] Surveys major figures and literary movements in literatures written in English through 1750. *Prerequisite:* WA.

2430. Literatures in English II. 3. [CH◀▶(none)] Surveys major figures and literary movements in literatures written in English 1750-1865. *Prerequisite:* WA.

2435. Literatures in English III. 3. [CH◀▶(none)] Surveys major figures and literary movements in literatures written in English 1865-present. *Prerequisite:* WA.

2490. Studies in_____. 1-6 (Max. 6). Presents a variety of topics in literature. *Prerequisite:* WA.

3100. Tribal Literatures of the Great Plains. 3. [WC,D◀▶(none)] Familiarizes students with American Indian literatures of the Great Plains. The Great Plains region is the locus of much historical and contemporary significance in regard to American Indian cultures. The literature of Great Plains Indians allows students to confront and reexamine the national narratives surrounding American Indians. Cross listed with AIST 3100. Prerequisite: 6 hours of AIST or ENGL.

3150. World Literature. 3 (Max. 6). [CH,G◀▶(none)] Encompasses reading and analysis of major works representative of significant periods or literary forms in the history of literature. *Prerequisites:* WA and WB.

3180. Medieval Culture. 3. Surveys the major texts of medieval European literature (in translation) in their cultural and historical contexts. Genres covered include epic, saga, romance, dream vision, drama and fabliaux. *Prerequisite:* WA.

3340. Philosophy in Literature. 3 (Max 6). Examines central themes in literary works with philosophical significance; studies related general issues. Authors studied may include Aristotle, Dostoievski, Kafka, ee cummings, Grass, Mann, Pound, Rilke, Camus, and Sartre. Issues include questions of interpretation, criticism, and translation, as well as the possibility of direct philosophical influence on authors. Cross listed with PHIL 3340. *Prerequisites:* one course in philosophy and one course in literature or criticism in the English department.

3380. Great Works of American Literature. 3. Traces the development and staying power of the American tradition by studying literary monuments such as Melville, Whitman, Dickinson, Eliot, and Faulkner. Credit cannot be earned in both 2380 and 3380. *Prerequisite:* WA.

3610. Non-Western Women Writers. 3. Examines literature written by women in non-western cultures. The geographical region, time period, and genres of literature may vary by semester. Analyzes representations of such topics as family, marriage, sexuality, community, and colonialism as expressed in fiction, drama, literary non-fiction, and/or poetry. *Prerequisites:* ENGL 1010 or WMST 1080; junior standing.

3710. Gender: Humanities Focus. 3. [CH◀▶COM2] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ART/WMST 3710. *Prerequisite:* WMST 1080 or ENGL 1010.

4000 [3000]. 21st Century Issues in Professional Writing. 3. [WC◀▶(none)] Examines ethical, cultural, and practical issues for writers in complex, real-world scenarios that pose communication challenges. Focuses on applying fundamental principles of rhetoric, effective research methods, analytical skills, and design technologies to collaborative and individual problem-based projects. *Prerequisites:* WA and WB.

4010. Technical Writing in the Professions. 3. [WC◀▶COM3] Deals with professional writing for various audiences. Includes research methods, audience analysis, organization and developmental techniques, abstracting, types of reports and popularization. Part of the last half of the course is devoted to solution of a student-initiated problem, culminating in the writing of a long-form report. *Prerequisites:* WA and WB; junior standing.

4020. Editing for Publication. 3. Theory and practice of editing in the contexts of book, magazine, newspaper, and web-based publications. Standard editing practices for using grammar, proofreading marks, and computer editing tools. *Prerequisites:* WA, WB (ENGL 2035 and 3000 recommended).

4025 [3050]. Writing for the Web. 3. [WC,L◀▶COM3] Covers a variety of issues relevant for composing in the 21st century. As students learn to design and generate effective writing for a particular audience in a digital environment, they will also develop skills with advanced web and print research, basic HTML programming language, and standard web design software. *Prerequisites:* WB and junior standing.

4050. Writer's Workshop in_____. 1-3 (Max. 6 at undergraduate level, Max. 12 for B.A. plus M.A.). Students submit manuscripts in the short story, poetry, drama, etc. Includes class and conference criticism and consultation. Considers different types of creative writing in various semesters, as announced in class schedule. *Prerequisites:* 3 hours of a 2000-level creative writing class in the appropriate genre and consent of instructor.

4061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with COJO 4061; dual listed with ENGL 5061. *Prerequisites:* COJO 1040 and 3040 or ENGL 2035.

4070. Film Directors:____ 3 (Max. 6). Offers an intensive examination of representative films by selected film makers. *Prerequisite*: 6 hours of 2000-level literature courses.

4075. Writing for Non-Profits. 3. [WC◀▶COM3] Designed for students interested in working in the non-profit sector. Explores rhetorical, political and social dimensions of writing and communicating in the non-profit world and features intensive study of special topics and problems related to non-profit communication, including activ-

ism, grant writing, organizational rhetoric, and non-profit genres. Content varies. *Prerequisite:* WB.

4080. Film Genre Studies:____. 3 (Max. 6). Offers structural, film historical and political analyses of selected major film genres. *Prerequisite:* 6 hours of 2000-level literature courses.

4090. Film and Religion. 3. Movies use religion to convey messages; they debate religious issues and use religion to debate non-religious issues. This course analyzes how film makers use religion and religious themes to transform religions into advocates for social issues and to shape religion's role in society. Popular films drawn from many genres. *Prerequisite:* 6 hours of 2000-level or higher literature courses or religion courses.

4110. Shakespeare: Romantic Comedies and History Plays. 1.5-4 (Max. 4). *Prerequisite:* 6 hours of 2000-level literature courses.

4120. Shakespeare: Tragedies and Romances. 1.5-4 (Max. 4). *Prerequisite:* 6 hours of 2000-level literature courses.

4140. English Drama: Restoration and 18th Century. 3. A study of the development of the drama from 1660 to 1800, including comedy of manners, heroic drama, tragedy, sentimental comedy, laughing comedy, satire, ballad opera and burlesque. *Prerequisite:* 6 hours of 2000-level literature courses.

4150. Modern Drama. 3. Focuses on development and shape of modern theatre. Plays are treated as dramatic literature, performed art and manifestations of a social and philosophical milieu. *Prerequisite:* 6 hours of 2000-level literature courses.

4160. Chaucer. 3. A study of the major works. *Prerequisite:* 6 hours of 2000-level literature courses. (Alternates with ENGL 4180).

4170. Early English Renaissance Literature: 16th Century. 3. A study of prose, poetry and drama from More through Shakespeare. Also studies developments in primary genres, styles, aesthetic values and intellectual concerns of the period's literature. *Prerequisite:* 6 hours of 2000-level literature courses.

4180. Middle English Literature. 3. Surveys the literature of medieval England from the early 13th century to the mid-15th century. Focuses on language, literature and cultural history. *Prerequisite:* 6 hours of 2000-level literature courses. (Alternates with ENGL 4160).

4190. Milton. 3. The complete poetry and selected prose of John Milton, with emphasis on the art and meaning of *Paradise Lost*. *Prerequisite:* 6 hours of 2000-level literature courses.

4200. Later English Renaissance Literature: 17th Century. 3. A study of prose, poetry and drama from Bacon and Donne through Browne and Behn. Also studies developments in the primary genres, styles, aesthetic values and intellectual concerns of the literature of the period. *Prerequisite:* 6 hours of 2000-level literature courses.

4210. English Literature of the 18th Century: Restoration to Mid-Century. 3. A survey of poetry, satire, comedy of manners and the early novel, as well as literary, cultural, historical and philosophical works from the age of Dryden through the age of Swift and Pope. *Prerequisite:* 6 hours of 2000-level literature courses.

4220. English Literature of the 18th Century: Mid- to Late- Century. 3. A study of poetry, the novel, development of literary criticism, historical and cultural commentary, and biography from the age of Johnson and Boswell to the beginnings of romanticism. *Prerequisite:* 6 hours of 2000-level literature courses.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with CLAS/THEA 4230. *Prerequisite:* 3 hours of classics courses. (Offered in spring in alternate years)

4240. English Literature of the 19th Century: Romantic Period. 3. A study of prose and poetry of authors who flourished between 1789-1832, such as Blake, Wordsworth, Coleridge, Keats, Shelley, Byron, Lamb, Hazlitt, Austen and Scott. *Prerequisite:* 6 hours of 2000-level literature courses.

4245. Jane Austen. 3. A study of all the surviving work, published and unpublished, of this master of the modern novel, along with selected work by other authors supplying cultural and literary contexts. *Prerequisite:* 6 hours of 2000-level literature courses.

4250. Poetry of the Victorian Age. 3. A study of major poetic forms practiced by Tennyson, Browning, Arnold and their successors. *Prerequisite:* 6 hours of 2000-level literature courses.

4260. English Prose Literature of the Victorian Age. 3. A study of political, social, economic, religious and aesthetic ideas, as analyzed by representative authors from Carlyle and Mill to the end of the century. *Prerequisite:* 6 hours of 2000-level literature courses.

4270. Classical Epic Poetry. 3. Reading and discussion of major works of Greek and Latin epic poetry, centered on Homer and Vergil. Also includes consideration of the background of these works (both mythological and historical) and the development of the epic tradition in the ancient world. Cross listed with CLAS 4270. *Prerequisite:* WB.

4280. Modern British Fiction. 3. Covers the novel in British literature from 1920 to present. *Prerequisite:* 6 hours of 2000-level literature courses.

4310. The English Novel: 18th Century to Early 19th Century. 3. Spans the novel's formative (experimental) period, to its Gothic moment. Representative authors from Defoe to Scott. *Prerequisite:* 6 hours of 2000-level literature courses.

4320. The English Novel: 19th Century to Early 20th Century. 3. Spans the novel's Victorian (realist) manifestation, to its Modernist reconsideration. Representative authors from Dickens to Woolf. *Prerequisite:* 6 hours of 2000-level literature courses.

4340. Modern Poetry. 3. A study of selected aspects of modern poetry, including poets, poems, poetics and other relevant matter, mainly in Britain and the United States, between the mid-19th century and present. *Prerequisite:* 6 hours of 2000-level literature courses.

4360. American Prose: Early Through Mid-19th Century. 3. A study of major fiction and relevant non-fiction, written in America from the beginning through the middle of the 19th century. *Prerequisite:* 6 hours of 2000-level literature courses.

4370. American Prose: 1865-1920. 3. A study of major fiction written in the late-19th and early-20th centuries in relation to rise of realism and naturalism. *Prerequisite:* 6 hours of 2000-level literature courses.

4430. Modern American Fiction. 3. Covers the novel in American literature from 1920 to present. *Prerequisite:* 6 hours of 2000-level literature courses.

4450. African American Novel. 3. [D◀▶(none)] Considers aesthetic dimension and cultural matrix of novels written by Black Americans. Cross listed with AAST 4450. *Prerequisites:* AAST 1000, any AAST 2000 level course, junior/senior standing, six hours of 2000-level literature courses in ENGL.

4455. Literature of Enslavement. 3-4 (Max. 4). [D◀▶(none)] Students engage in an in-depth study of the literary voices that emerged from the history of enslavement in the Americas from colonial times through the end of Reconstruction in 1877. Dual listed with ENGL 5455; cross listed with AAST 4455. *Prerequisites:* AAST 1000, any AAST 2000-level course, and junior/senior standing, or six credit hours of literature courses in ENGL.

4460. American Indian Literature. 3. [WC◀▶(none)] Advanced critical study of the history of American Indian literature, emphasizing the authors' views of social change. Cross listed with AIST 4460. *Prerequisite:* 6 hours of 2000-level literature courses.

4470. Studies in Chicano Folklore. 3. [CH,D◀▶(none)] Provides a survey of the origins, development and contemporary folklore of the Mexican American Chicano people of the United States with comparative relation to Mexico and other groups in the United States. Cross listed with CHST 4470. *Prerequisites:* CHST 1100 and WA.

4480. Regional Literature of the U.S.: The West. 3. Encompasses major themes and writers in western American literature. *Prerequisite:* 6 hours of 2000-level literature courses.

4500. American Folklore. 3. A study of American folklore, emphasizing verbal art. Students read primary sources, as well as some critical and theoretical work. Includes folklore fieldwork. *Prerequisite:* 6 hours of 2000-level literature and/or cultural anthropology.

4546. Agriculture: Rooted in Diversity. 3. [C,D◀▶(none)] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/CHST/FCSC/HIST/AMST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4600. Studies in _____. 1-6 (Max. 12). Presents from semester to semester a variety of significant topics in American, English or other literatures. *Prerequisite:* 6 hours of 2000-level literature courses.

4610. Special Studies Abroad in _____. 1-6 (Max. 6). *Prerequisite:* 6 hours of 2000-level literature courses.

4620. Independent Reading in _____. 1-3 (Max. for M.A. 3; Max. 6). Involves independent study and research experience in given topic, person, movement in literature. *Prerequisites:* 6 hours of 2000-level literature courses, consent of instructor and permission of department chair.

4630. English Honors Thesis. 1-3 (Max. 3). Directed study under the supervision of an English honors thesis chairperson. Results in production of an English honors thesis. Maximum of three credits of ENGL 4630 can be applied to the degree. *Prerequisites:* consent of the Director of the English Honors Program, instructor and department chair.

4635. English Department Honors. 0. Satisfactory completion of this course indicates that English Departmental Honors have been conferred on the student. *Prerequisites:* successful completion and defense of English Honors thesis.

4640. Studies in Emerging Fields and Approaches. 3 (Max. 12). Presents from semester to semester a variety of significant topics in emerging fields or approaches to literature written in English. *Prerequisite:* six hours of 2000 level literature courses.

4710. Research Writing for ESL Students. 3. A course in university research techniques and writing for graduate students for whom English is a second language. *Prerequisite:* consent of instructor.

4750 [3750]. Fundamentals of Linguistics. 3. Introduction to fundamentals of linguistic study, including phonology, morphology, semantics, pragmatics, and syntax, with a focus on the application of linguistic theory. Cross listed with ANTH/LANG 4750. *Prerequisite:* 8 hours of foreign language.

4770 [3770]. Sociolinguistics. 3. Following an introduction to the fundamentals of linguistic study, an examination of the relationship and interactions among language, society, and culture, including linguistic and social behaviors with regard to the creation and modification of cultural identity. Cross listed with ANTH/LANG 3770. *Prerequisite:* 8 hours of foreign language.

4780. History of the English Language. 3. Considers major sources of change in the English language historically, as well as some of the internal and external catalysts for the process. Identical to ANTH 4780. *Prerequisite:* ENGL 4750.

4785. Linguistics, Language Teaching and Social Context. 3. Introduces prospective teachers of English as second language to the basic components of language and to the social aspects of human language use. Explores a variety of concepts about language: how it is used and perceived, how languages change, how diverse cultures respond to such changes. Cross listed with LANG 4785. *Prerequisite:* WB.

4830. Victorian Women's Lives: Their Art, Literature and Culture. 3. [CA◀▶(none)] An interdisciplinary approach to the study of women's issues in art, using literary, cultural and sociological texts to enlarge the art historical basis. Topics include "domestic goddess," class issues, racial questions, working women, prostitution, education, marriage and divorce. Dual listed with ENGL 5830; cross listed with ART/WMST 4830. *Prerequisites:* ART 2020, WMST/ENGL 1080.

4950. The American Dream in Literature. 3. A study of literary reflections of how certain cultural hopes, expectations and assumptions in the American experience have been enunciated, realized, frustrated and contradicted. Focuses on American literature of the 19th and 20th centuries. *Prerequisite:* 3 hours of 2000-level literature courses, 3 hours of American history.

4970. Writing Internship. 3 (Max. 6). Students work 6-8 hours per week as "writing interns" for a private business or public agency, performing specific writing/editing tasks for that client. Students are supported and enabled through a series of classroom sessions and individual meetings with the course instructor. Formal progress reports and a comprehensive final report are required. *Prerequisite:* successful completion of ENGL 4010, 4020, or 4050.

4980. Numerical Imaginings 3. An introduction to mathematical and statistical studies in literature and the literary tradition. *Prerequisites:* completion of QA and QB requirements, 6 hours of 2000-level literature courses.

4990. Senior Seminar in English Studies. 3. [WC◀▶COM3] Considers methods, theories and history of the study of literature and writing. In readings, discussion, as well as oral and written presentations, students seek a broad perspective on knowledge and skills gained throughout study in the English major. *Prerequisite:* advanced (senior) standing in English.

5000. Studies In:. 1 - 8 (Max. 8). Provides an opportunity for specialized seminar approaches to subjects in literature. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5010. Practical Teaching in English Writing and Literature. 1 - 4 (Max. 4). Practical and theoretical teaching methods and approaches for teachers of composition and literature courses. Prerequisite: graduate status or 12 hours of 4000-level work.

5030. English as a Second Language: Theory and Method. 4. Theoretical and practical explorations of the problems of teaching English as a second language. *Prerequisite:* graduate status.

5061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with COJO 5061; dual listed with ENGL 4061. *Prerequisites:* COJO 1040 and 3040 or ENGL 2035.

5080. Graduate Apprenticeship. 1. The graduate apprenticeship furthers a graduate student's professional development by allowing him/her to teach in a course other than Freshman Composition and to engage in a close working relationship with a faculty mem-

ber. Apprentices will engage in a full range of teaching activities, such as grading, constructing assignments and exams, lecturing, leading discussion, and so on. Does not apply to hour requirement for the degree. *Prerequisites:* graduate standing and permission of the English department chair.

5090. Research Methods. 1. An introduction to research methods and resources necessary for the advanced study of literature, rhetoric and composition, and creative writing. Satisfactory/Unsatisfactory only. *Prerequisite:* graduate standing in English.

5220. Studies in Medieval Literature. 1-4 (Max. 8). A seminar course in selected genres, figures, and themes in Medieval English literature. *Prerequisite:* graduate status or 12 hours or 4000-level work.

5230. Studies in English Renaissance Literature. 1-4 (Max. 8). A seminar in selected genres, figures, and themes of the sixteenth and early seventeenth centuries. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5250. Studies in Shakespeare. 1-4 (Max. 8). To provide advanced students with the opportunity to study problems of text, sources, staging, theatrical history, and/or critical theory with reference to the works of William Shakespeare. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5270. Studies in 18c English Literature. 1-4 (Max. 8). A seminar in selected genres, figures, and themes of restoration and eighteenth century English literature. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5280. Studies in 19c English Literature. 1-4 (Max. 4). A seminar in selected genres, figures, and themes of the romantic and Victorian periods. *Prerequisite:* graduate status or 12 hours or 4000-level work.

5290. Studies in 20c English Literature. 1-4 (Max. 8). A seminar in significant writers of poetry, drama, fiction, and biography from the end of the nineteenth century to the present. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5310. Early American Literature. 4. Seminar designed to acquaint graduate students with selected texts from the colonial period to 1800, relevant secondary works, and scholarly methods. *Prerequisite:* graduate status or 12 hours of 3000-4000 level work.

5320. Studies in 19c American Literature. 1-4 (Max. 8). A seminar designed to acquaint graduate students with selected principal works of American literature, relevant secondary works, and scholarly method. *Prerequisite:* graduate status of 12 hours or 4000-level work.

5330. Studies in 20c American Literature. 1-4 (Max. 8). A seminar in selected significant writers of poetry, drama, and prose from the end of the nineteenth century to the present. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5340. Intellectual Currents in Modern American Literature. 1-4 (Max. 4). Devoted to the study of writers such as Marx and Freud and more recent American writers. *Prerequisite:* graduate status or 12 hours or 4000-level work.

5360. Studies in Ethnic Literature. 1-4 (Max. 8). A study of literature and culture of selected ethnic minorities. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5455. Literature of Enslavement. 3-4 (Max. 4). Students engage in an in-depth study of the literary voices that emerged from the history of enslavement in the Americas from colonial times through the end of Reconstruction in 1877. Dual listed with ENGL 4455; cross listed with AAST 5455. *Prerequisites:* AAST 1000, any AAST 2000-level course, and junior/senior standing, or six credit hours of literature courses in ENGL.

5520. History of Literacy Criticism: Enlightenment and 19th Century. 4. Historical survey of the mainstream of European literary criticism, including the critics of antiquity and the Renaissance. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5530. Modern Critical Theory and Practice. 1-4 (Max. 4). Major trends in modern poetics and practical criticism. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5540. Seminar in Creative Writing. 4. Meets the theory requirement for graduate English majors concentrating in Creative Writing. Students review important texts about writing, review literary magazines, publishing procedures, and produce an independent writing project. *Prerequisite:* creative writing-4000 level and permission of instructor.

5550. Independent Study in Creative Writing. 1-3 (Max. 6). Guided independent writing of poetry or imaginative prose at an advanced level. Limited enrollment. No more than 9 hours of ENGL 4050 and ENGL 5550 combined may be counted toward the M.A. in English. *Prerequisite:* consent of instructor and graduate status or 6 hours of ENGL 4050.

5560. Graduate Writing Workshop. 1-4 (Max. 28). Graduate level workshop that emphasizes reading as well as writing in a specific genre (poetry, nonfiction, fiction) or in relation to a theme that combines genres, at the discretion of the instructor. *Prerequisite:* 12 hours of 4000-level creative writing or graduate status.

5830. Victorian Women's Lives: Their Art, Literature and Culture. 3. An interdisciplinary approach to the study of women's issues in art, using literary, cultural and sociological texts to enlarge the art historical basis. Topics include "domestic goddess," class issues, racial questions, working women, prostitution, education, marriage and divorce. Dual listed with ENGL 4830; cross listed with WMST 5830. *Prerequisites:* ART 2020, WMST 1080, ENGL 1080.

5870. Women's Studies. 1-4. (Max 8). A seminar in women writers and feminist criticism. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5880. Studies in Modern Fiction. 4. A study of modern fiction, examining theory and practice, and covering works of English, European, and American origin. *Prerequisite:* graduate status or 12 hours of 4000-level work.

5900. Practicum in College Teaching. 1-3 (Max. 4). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5910. English Communication Skills for International Teaching Assistants. 3. Offered satisfactory/unsatisfactory only. Three credit hours for fee purposes. *Prerequisite:* graduate standing.

5915. Tutorial. 1. Graduate standing or consent of instructor. One credit hour for fee purposes.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes.

5**960. Thesis Research. 1-12 (Max. 24).** Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5975. Independent Studies. 1-4 (Max. 6). Independent study and research experience in a given topic, person, or movement in literature at an advanced level. *Prerequisite:* permission of chair; graduate standing.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Gender and Women's Studies

100 Ross Hall, 766-2733
FAX: (307) 766-2555
Web site: www.uwyo.edu/wmst
Director: Catherine Connolly

Professors:

CATHERINE CONNOLLY, B.S. State University College at Buffalo 1984; M.A. State University of New York at Buffalo 1989; J.D. 1991; Ph.D. 1992; Professor of Sociology and Women's Studies 2004, 1998, 1992.

COLLEEN DENNEY, B.A. Louisiana State University 1981; M.A. 1983; Ph.D. University of Minnesota 1990; Professor of Art 2005, 1990; Professor of Gender and Women's Studies 2009.

BONNIE ZARE, B.A. Stanford University 1988; M.A. University of Wisconsin 1989; Ph.D. Tufts University 1994; Assistant Lecturer in English 1997; Professor of Gender and Women's Studies 2014, 2002.

Associate Professors:

SUSAN DEWEY, B.A. Stony Book University 1999; M.A. Syracuse University 2002; Ph.D. 2004; Associate Professor of Gender and Women's Studies 2014, 2010.

Academic Professionals:

BARBARA ELLEN LOGAN, B.A. Queens College CUNY 1986; Ph.D. University of California Santa Cruz 2002; Assistant Academic Professional Lecturer 2011.

Professor Emeriti:

Susan McKay (Distinguished Professor Emeritus in Gender and Women's Studies)

Adjunct Faculty:

(see department section following name for academic credentials)

Ulrich Adelt, American Studies
Treena Anastasia, Gender and Women's Studies
Stephanie Anderson, Political Science
Judith Antell, Emeritus, American Indian Studies
Cecelia Aragon, Latina/o Studies, Theatre and Dance
Christin Covello, Gender and Women's Studies
Susan C. Frye, English
Teena Gabrielson, Political Science
Anne Guzzo, Music
Alison Harkin, Gender and Women's Studies
Janice Harris, Emeritus, English
Cynthia Hartung, Psychology
Isadora Helfgott, History
Jeanne Holland, English
Angela Jaime, Educational Studies
Ed Janak, Educational Studies
Michelle Jarman, WIND
Chian Jones Ritten, Agricultural and Applied Economics
Marianne R. Kamp, History
Frieda E. Knobloch, American Studies
Renee Laegreid, History
Jennifer LaVanchy, Modern and Classical Languages
Jennifer Mayer, University Libraries
Leila Monoghan, Disability Studies
Hannelore Mundt, German
Danielle Pafunda, English
Tracey Patton, African American and Diaspora Studies
Tucker Readdy, Kinesiology and Health
Nancy Shea, Gender and Women's Studies
Nathaniel Smith, Gender and Women's Studies
Lilia Soto, American Studies, Latina/o Studies
Tonia St. Germain, Gender and Women's Studies
Grant Walsh-Haines, Gender and Women's Studies
Georgia Wheatley, Casper College

Advisory Committee:

Stephanie Anderson (Political Science)
Cecelia Aragon (Latina/o Studies, Theatre and Dance)
Alison Harkin (Gender and Women's Studies)
Isadora Helfgott (History)
Angela Jaime (Educational Studies)
Michelle Jarman (WIND)
Marianne Kamp (History)
Renee Laegreid (History)
Jennifer LaVanchy (Modern and Classical Languages)
Danielle Pafunda (English)
Chian Jones Ritten (Agricultural and Applied Economics)

The Gender and Women's Studies Program offers an interdisciplinary course of study that examines the relevance of sex, gender and sexuality in history, societies, and cultures. Students may earn a major, minor, or graduate minor in Gender and Women's Studies, or a minor or graduate minor in Queer Studies. A faculty advisor is assigned to the student upon declaration of a major or minor.

Students graduating with a degree in Gender and Women's Studies will have skills to succeed in a variety of settings indicated by their ability to:

1. conduct interdisciplinary feminist analysis.
2. examine and critique ideological assumptions underlying social institutions and systems of representation, including but not limited to assumptions regarding gender, race, class, nationality, disability, age, and sexual orientation.
3. comprehend the impact of gender on individuals' historical and contemporary agency, and how the ability to express agency has shaped people's lives in various geographical settings.

Major requirements

For the gender and women's studies major, the student must complete 33 credit hours of gender and women's studies courses. All courses must be completed with a grade of "C" or better.

Core Courses (12 credit hours)

1. Introductory Course: (3 credits)
   Choose ONE from:
   a. WMST 1080: Intro to Women's Studies or
   b. WMST 2000: Intro to GLBTQ/NS Studies or
   c. WMST 1900: Women & Leadership
2. Theory/Methods Courses (9 credits)
   a. WMST 3710: Gender & Humanities and
   b. WMST 2500: Gender & Society or WMST 4210: Feminist Research Methods; and
   c. WMST 4700: Feminist Theories

Free Electives: 21 credit hours.

Students may choose from our full complement of courses to complete their major requirements.

Students have the option to do 21 hours in one of the following areas, or a combination in one or more areas, or create an independent path under consultation with the advisor. Possible areas of emphasis include:

Culture and Representation; Science, the Body and Sexualities; Social Policy and Social Justice; Independent Path. (see advisor for list of offerings)

As part of their 21 free elective hours students have the option of pursuing internships (WMST 4970) within the program but should recognize that internships require both a 3.3GPA and consent of instructor.

Gender and Women's Studies with Honors

Honors in Gender and Women's Studies recognizes academically ambitious students who have excelled in their undergraduate careers, and who are ready for graduate school and/or employment in the public or private spheres. Requirements include an overall minimum GPA of 3.5 and the completion of WMST 4965, Senior Honors Project. Students should typically plan for the Senior Honors Project in consultation with their advisor during their junior year. Students in UW Honors Program, McNair Scholars Program, or other departments that require completion of an independent research project may dovetail their honors work in GWST with those programs.

For students beginning in Fall 2015, Honors in Gender and Women's Studies requires the completion of 3 semesters of foreign language or sign language, or a concentration in quantitative analysis.

Minor Requirements

For the Gender and Women's Studies minor, students must complete 18 hours of WMST course work including one of the following core courses: WMST 1080, 3500, 3710, 4210 or 4700. A minimum of 12 hours of credit in the minor must be exclusive of hours earned in the student's major. Nine of the required hours must be 3000-level or above. All classes for the minor must be completed with a grade of "C"or better.

Minor in Queer Studies

The Queer Studies minor requires the completion of 18 hours of classes, including WMST 2000-Intro to LGBTQ/NS, and nine or more credits at the 3-4000 level. Each semester, students, in consultation with a queer studies advisor, will choose elective courses. Independent projects or internships will be encouraged.

An interdisciplinary, independent Queer Studies advisory committee advises the program on curriculum, scheduling and coordination. A faculty advisor is assigned to the student on declaration of the minor.

The advisory board for the minor includes:

Rachel Watson, chair, Molecular Biology
Ulrich Adelt, American Studies
Christine Boggs, Outreach School
Dolores Cardona, Assoc. Dean of Students
Cathy Connolly, Gender and Women's Studies
Susanna Goodin, Philosophy
Mark Helmsing, Secondary Education
Beth Loffreda, American Studies
Danielle Pafunda, English
Eric Teman, Professional Studies

Graduate Study

Students interested in a graduate minor in Gender and Women's Studies or Queer Studies should contact the Director of the Program for enrollment.

Minor in Gender and Women's Studies

A total of 12 hours of course work is required, including nine hours at the 5000-level and including WMST 5710, Feminist Theoretical Perspectives. In addition, students are encouraged to complete at least one independent study (WMST 5975) with a GWST faculty member. When practical, students should include a GWST faculty member on their thesis, dissertation or Plan B committees. Students in professional programs without a culminating research project (or those whose graduate work is outside of GWST) can meet this requirement through alternative means.

Minor in Queer Studies

A graduate minor in Queer Studies requires the completion of 12 hours, including WMST/ENGL 5000, Queer Theory, a minimum of 6 hours at the 5000+ level, and a capstone experience or independent study. For committee-based degree programs with QS content it is expected that the student will include one committee member from QS.

Gender and Women's Studies (WMST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1020. Intellectual Community: Women in Sports. 3. [I,L◀▶(none)] An overview of the role of American women in sports. Studies concepts about women, sports, and society in contemporary and historical perspectives. Topics include: history of women in sports, physiological, social and cultural considerations, media image, and careers. Cross listed with HLSC 1020.

1030. Social Justice in the 21st Century. 3. [I,D◀▶(none)] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with CHST/AAST/AMST/AIST 1030. Enrollment preference will be given to We The People FIG students.

1080. Introduction to Women's Studies. 3. [CH,D◀▶H] Introduction to key issues in women's studies. Topical examination of women's participation in, and relationship to, institutions of society, such as family and school, as well as processes and activities, such as work, art, literature and politics in historical and cross-cultural analysis. Cross listed with ENGL 1080. (Offered both semesters)

1090. Women in Contemporary Society. 1. [I◀▶(none)] Exposes students to the major questions in Women's Studies. Examines women's participation in, and relationship to, institutions and society, such as family and school, as well as activities such as work, art, literature and politics in historical analysis.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1900 [4510]. Women and Leadership. 3. [O,L◀▶(none)] Students examine theoretical, historical and cultural aspects of leadership, values in leadership, gender differences in leadership styles, and practical applications of leadership skills through oral communication and information literacy. Individual and collaborative work is expected. Cross listed with SOWK 1900.

2000. Introduction to LGBTQ/NS Studies. 2. [C,D◀▶H] Lesbian, Gay, Bisexual, Transgender, Queer and New Sexuality Studies (LGBTQ/NS) explores the interdisciplinary study of sexuality and its importance to the organization of social relations and social institutions. Primary among its concerns is the study of the lives, the politics, and the creative work of sexual minorities.

2001. Gender and Ethnicity in Science. 3. Covers factors affecting the performance and retention of women and ethnic minority students in science careers, and science as a social construct. Cross listed with CHST 2001.

2060. Topics in Women's Studies. 1-4 (Max. 6). Popular and current topics in women's studies.

2070. Gender and Religion. 3. Aims to help students understand how religion constructs and reinforces gender roles in religion and society. Looks at traditional gender roles in Christianity and the transformation they have undergone in the past century or so. Cross listed with RELI 2070.

2135. Women and Aging. 3. Focuses on women and the aging process with emphasis given to both the problems and promises of aging. Topics to be explored within a multicultural, sociological framework include the

definition of self, relationships, community, health and health care, work and service, retirement, economic realities and new perspectives on aging. Cross listed with FCSC/SOC/NURS 2135. *Prerequisite:* ENGL/SOC/WMST 1080 or SOC 1000 or FCSC/NURS/SOC 2120.

2389. History of Women in the American West. 3. [D◆▸(none)] Surveys the roots of society's marginal historical depiction of women in the American West from the colonial period through the twentieth century. From the perspective of race, class, ethnicity, and gender, the course focuses on the development of a multi-dimensional understanding of women's roles using an interdisciplinary approach. Cross listed with HIST 2389.

2420 [2500]. Women and Politics. 3. Describes and compares status and political activity of women in America with those of women in other societies in order to explore causes, methods and results of political involvement by women. Cross listed with POLS 2420. *Prerequisite:* POLS 1000 or consent of instructor.

2500 [3500]. Gender and Society. 3. [WB◆▸COM2] Examines the social construction of gender using interdisciplinary methods of analysis. The readings and assignments emphasize the importance of denaturalizing the gender stereotypes and norms that impact women's and men's lives. Intersections between gender, race, class, age, and sexual orientation are examined within their cultural contexts. This course will prepare students for advanced work in Gender and Women's Studies. *Prerequisite:* WMST 1080 or cross listed equivalent.

2700. Gender and Disability. 3. [D◆▸H] Disability studies draws upon critical theory to investigate disability as a discursive construction. Investigates how intersecting conceptions of disability and gender have shaped cultural meanings and the social positioning of specific groups, especially women with disabilities. Topics include non-normative embodiment, issues of representation and subjectivity, and the politics of health, sexuality, and care. Cross listed with WIND 2700.

3050. Cultures of Nature in the United States. 3. Uses artistic, philosophical, historical and literary material to investigate how ideas about and representations of nature have changed over time in the U.S. Culminates in an examination of a wide range of contemporary environmental ideas within this broad historical and cultural context. Cross listed with ENR/AMST 3050. Prerequisite: 2000-level course in one of the following departments: AMST, American history, American literature, or a 2000-level course approved for the ENR program.

3150. Feminist Christian Thought. 3. In recent decades Christianity has undergone important changes with regard to the place of women in the church. Addresses historical and theological discussions that have accompanied those changes. Also addresses how feminism and religion affect one's belief system. Cross listed with RELI 3150. *Prerequisites:* junior standing and at least one course in women's studies or religious studies.

3200. Perspectives in Chicana Studies 3. [D◆▸(none)]An interdisciplinary introduction to the study of the history, culture, gender relations, and contemporary political, economic status of Chicanas/Mexican American women. Examines the origins, development of Chicana studies as a major emphasis in Chicano/Chicana studies. Cross listed with CHST 3200. *Prerequisite:* CHST 1100.

3300. Gender Development. 3. Examines the development of gender roles and sex differences. Incorporates developmental, clinical and social psychological perspectives. Includes examination of biological, social and cultural factors on gender development; conceptualizations of masculinity, femininity and androgyny; differences in play behavior in boys and girls; evaluation of psychological measurement and research regarding gender development and sex differences. Cross listed with PSYC 3300. *Prerequisite:* PSYC 2300 or 4300.

3400. Popular Music and Sexualities. 3. [CH,D◆▸(none)] Looks at ways in which popular music has intersected with sexual and gendered identities as a means and expression of both oppression and liberation. Cross listed with AMST 3400. *Prerequisite:* WA.

3610. Non-Western Women Writers. 3. Examines literature written by women in non-western cultures. The geographical region, time period, and genres of literature may vary by semester. Analyzes representations of such topics as family, marriage, sexuality, community, and colonialism as expressed in fiction, drama, literary non-fiction, and/or poetry. *Prerequisites:* ENGL 1010 or WMST 1080; junior standing.

3650. Contemporary US Immigrant Women Writers. 3. [CH,D◆▸(none)] A study of contemporary American literature (fiction, autobiography, and poetry) by Mexican, Caribbean (Haitian and Dominican) and Arab immigrant women and daughters of immigrant parents. Film, other visual arts, and a range of essays enrich students' analysis of the literary texts. *Prerequisite:* WMST 1080, or WA, or junior standing.

3710. Gender and Humanities. 3. [CH◆▸COM2] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ENGL/ART 3710. *Prerequisite:* WMST 1080 or ENGL 1010. (Offered once a year)

3800. Chicanas/os in Contemporary Society. 3. [CS,D◆▸(none)] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with AMST/CHST 3800. *Prerequisites:* CHST 1100 or WMST 1080 or AMST 2010.

4050. Minority Sexual/Gender Identity Issues in Education. 3. How youth of minority sexual and gender identities have been educated: the challenges they experience in U.S. K-16 schools, the risk factors related to academic success (health, safety, and emotional well being), and strategies to create safe, caring, and inclusive learning environments for all youth. Dual listed with WMST 5050; cross listed with EDCI 4050. *Prerequisites*: completion of WA and WMST 2000 with C or better.

4100. U.S. Latina/o Theater. 3. [CA,D◆▸(none)] Designed to provide an overview of United States Latina/o Theater. Through a variety of delivery methods, students are instructed on the various categories that directly impact U.S. Latina/o Theater such as political theatre, gay/lesbian theatre, border issues, race, class, gender, and sexuality. Cross listed with CHST 4100. Dual listed with WMST 5100. *Prerequisite*: 6 hours of CHST or WMST.

4155 [4920, 4950]. Women, War and Health. 3. [CS,G◆▸(none)] Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. Dual listed with WMST 5155; cross listed with INST/NURS 4155. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4175 [4940]. Gender, Women, and Health. 3. [CS,G◆▶(none)] Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally will be examined. Cross listed with INST/NURS 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4190. Women and the Bible. 3. Explores depictions, roles and statuses of women found in the Bible, both Old and New Testaments. Introduces ways biblical portraits of women have been used in more recent centuries to develop theologies of, by, and for women. Cross listed with RELI 4190. *Prerequisite:* junior standing or permission of instructor.

4200. Gender and Race in the Economy. 3. [D◆▶(none)] Focuses on the role gender and race play in the economy; specifically the way that gender and race affect economic outcomes for individuals in the United States. Cross listed with AGEC 4200. Dual listed with WMST 5200. *Prerequisites:* AGEC 1020 or equivalent, or SOC 1000, or WMST 1080, and WB.

4210. Feminist Research Methods. 3. Introduces students to feminist methods of research problem formulation, data acquisition, analysis, and presentation of research findings regarding topics related to sex, gender and sexuality. Requires students to participate in research projects. Dual listed with WMST 5210. *Prerequisites*: Nine hours of WMST or permission of the instructor.

4233. Race, Gender, Ethnicity in the Media. 3. [WC,D◆▶COM3] Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with AAST 4233 and COJO 4233; dual-listed with WMST 5233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

4240. Global Sex Work and Trafficking. 3. [G◆▶(none)] Drawing upon case studies from Africa, Asia, the Americas and Europe, this course explores the gendered intersections of power and privilege through the lens of sex work, broadly defined as the exchange of intimacy for something of value, and trafficking, defined as coerced forms of sex work. Dual listed with WMST 5240; cross listed with INST 4240. *Prerequisite:* 3-6 hours of WMST or INST.

4300. The Politics of Sexuality. 3. Addresses issue of how sexuality has become gendered with different meanings for both males and females as to reproductive behavior, especially how women's bodies are defined in sexual terms. *Prerequisite:* WMST 1080, 3500 or 3710. (Offered every other year)

4330. European Gender and Women's History. 3. The experiences of women and the history of gender from the Renaissance through the 19th century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. *Prerequisite:* HIST 1110 or 2110.

4335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with HIST 4335 and RELI 4335, dual listed with WMST 4335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

4360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. The complexity and diversity of Indian women's experiences throughout history are emphasized. Much of the class concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Cross listed with AIST/SOC 4360. *Prerequisite:* 6 hours of 2000-level AIST classes.

4400. Women and Work. 3. [WB◆▶(none)] Surveys general patterns of women's paid and unpaid work in the U.S. and abroad. Offers reconceptualizations of the meaning of work in women's lives, as well as debates surrounding comparable worth, pay equity, women's work experience and women in the world economy. Cross listed with SOC 4400, dual listed with WMST 5400. *Prerequisite:* 6 hours of women's studies or sociology. (Offered once a year)

4450. Ecofeminism. 3. Focus is on issues of gender, women and ecology. Ecofeminist thinkers argue that there is no liberation for women and no solution to the ecological crisis without a fundamental shift in relationships of domination. Uniting the two movements results in a radical reshaping of modern socio-economic relations. Dual listed with WMST 5450. *Prerequisite:* 6 hours in WMST, PHIL, and/or ENR.

4500. Special Topics in Women's Studies. 1-4 (Max. 12). Presents current research issues by visiting and regular faculty. *Prerequisite:* WMST 1080, 3500, 3710 or consent of instructor.

4520. Gender and Sexuality in Postcolonial Writing. 3. [CH,G◆▶(none)] Increases knowledge of history, cultural representations, and understandings of gender in formerly colonized areas. It engages with the provocative contributions of postcolonial theory and advances comprehension of the different issues confronted by women, men, and sexual minorities. Literature in different regions of the world may be highlighted. Dual listed with WMST 5520. Prerequisites: any two English/writing courses, or any WMST course.

4540. Women, Crime and the Law. 3. Addresses status of women as offenders and as victims in society and in the criminal justice system. Considers special role of women as professionals in the criminal justice system. Cross listed with CRMJ 4540. *Prerequisite:* WMST/ SOC 1080, 3500 or SOC 2400. (Offered every other year)

4580. Gender, Global Change, and Development. 3. [CS,G◆▶(none)] Examines the global intersections of gender and public policy through its analysis of five central themes: [1] international development discourse in practice; [2] feminized labor and migration; [3] women's unequal access to resources (including land ownership and education); [4] agricultural production and sustainability; [5] health, reproduction and mothering. Dual listed with WMST 5580; cross listed with INST 4580. *Prerequisite:* 3-6 hours of WMST or INST courses. (Offered once a year)

4590. Women of India. 3. [G◆▶(none)] Introduces students to concepts that influence the daily lives of contemporary women from India. Organized around two themes: how women have made history in India, and how today's women are performing, confronting and modifying cultural traditions. *Prerequisites:* WA and a CS or CH course.

4650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of im-

migration. Cross listed with AMST/CHST/INST 4650. Dual listed with WMST 5650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

4675. U.S. Women of Color. 3. [D◀▶(none)] Examines in comparative perspective the social conditions that shape the experiences of Chicanas/Latinas in the U.S. Students gain an understanding of how the intersection of race, class, gender, and sexuality shape the lived experiences of U.S. women of color through ideological, economic, and political forces. Cross listed with AAST/CHST 4675. *Prerequisite:* junior standing and/or a combination of 3-6 hours of any level of CHST, WMST, or AAST coursework.

4700. Feminist Theories. 3. [WC◀▶(none)] Surveys contemporary feminist theories and places those theories within the framework of social, literary, and artistic criticism. Uses feminist theories to address questions such as nature of meaning in literature and artistic forms; construction of science; and identity of the individual as these phenomena are affected by gender construction. *Prerequisite:* 12 hours of women's studies. (Offered once a year)

4770. Gender and Film. 3. Investigates gender construction in mainstream, mainly contemporary Hollywood cinema. Readings of germinal essays in film theory and extensive viewing of films will provide the critical tools to understand how and why stereotypical images are presented, how and why the spectator is manipulated to identify with these images. Dual listed with WMST 5770. *Prerequisite:* WMST 1080, 3500 or 3710. (Offered once a year)

4775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. Dual listed with WMST 5775; cross listed with ANTH 4775. *Prerequisite:* ANTH 1200, 2000.

4780. History of Women Artists. 3. Studies documented influence of women as subjects, makers and receivers of art. Emphasizes careers and works of women over a wide range of times and places and under a variety of social circumstances. Greatly emphasizes developments in the twentieth century. Cross listed with ART 4780; dual listed with WMST 5780. *Prerequisites:* ART 2010 or ART 2020 or 3 hours of Women's Studies courses; and WB.

4830. Victorian Women's Lives: Their Art, Literature and Culture. 3. [CA◀▶(none)] An interdisciplinary approach to the study of women's issues in art, using literary, cultural and sociological texts to enlarge the art historical basis. Topics include "domestic goddess," class issues, racial questions, working women, prostitution, education, marriage and divorce. Cross listed with ART/ENGL 4830, dual listed with WMST 5830. *Prerequisite:* Either ART 2020 or WMST/ENGL 1080. (Offered every other year)

4960. Women's Bodies, Women's Minds. 3. [CS◀▶(none)] Explores women's physiologic and psychologic development and the influences of patriarchal society upon the interpretation of what constitutes normalcy across the female life cycle. Historical, cultural and contemporary attitudes of the health care system and women's perspectives on menstruation, childbearing, breastfeeding and menopause will be analyzed. Cross listed with NURS 4960. *Prerequisite:* upper division status. (Offered every other year)

4965 [4980]. Senior Honors Project. 3. The student consults with the director/faculty supervisor to identify a topic and (a) produces a 30-40 page research paper or (b) a shorter 15-20 page paper plus a creative or service learning component, showing originality, firm knowledge of the discipline(s), and solid research skills, with a thesis defense as culmination. *Prerequisites:* WMST 4700, or concurrent enrollment with instructor consent, and a 3.5 gpa.

4970 [4000]. Internship. 3. Students gain practical experience in the application of principles learned in women's studies courses. Students will work with the director of women's studies internships to select a site; will intern approximately ten hours per week in the host organization; and will complete written assignments which reflect the student's work. Offered S/U only. *Prerequisites:* 12 semester hours of WMST coursework, 3.3 gpa and consent of instructor. (Offered both semesters)

4975 [4970]. Independent Studies. 1-4. Offers the advanced student the opportunity to pursue a topic of interest with the assistance and direction of an instructor in women's studies. *Prerequisite:* 6 hours in women's studies or consent of instructor.

5000. Special Topics. 1-4 (Max. 8). Presents findings from current research and new areas of inquiry into women's studies at the graduate level, by present and visiting faculty. *Prerequisite:* 18 hours of undergraduate women's studies.

5050. Minority Sexual/Gender Identity Issues in Education. 3. How youth of minority sexual and gender identities have been educated: the challenges they experience in U.S. K-16 schools, the risk factors related to academic success (health, safety, and emotional well being), and strategies to create safe, caring, and inclusive learning environments for all youth. Dual listed with WMST 4050; cross listed with EDCI 5050. *Prerequisites*: completion of WA and WMST 2000 with C or better; graduate standing; completion/concurrent enrollment in ADED 5260 or instructor approval.

5100. U.S. Latina/o Theater. 3. [CA,D◀▶(none)] Designed to provide an overview of United States Latina/o Theater. Through a variety of delivery methods, students are instructed on the various categories that directly impact U.S. Latina/o Theater such as political theatre, gay/lesbian theatre, border issues, race, class, gender, and sexuality. Cross listed with CHST 5100. Dual listed with WMST 4100. *Prerequisite*: 6 hours of CHST or WMST.

5155. Women, War & Health. 3. Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. *Prerequisites:* upper division standing, lower division social or psychological science course and instructor's consent.

5175. Gender, Women & Health. 3. Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally are examined. *Prerequisites:* upper-division standing, lower division social or psychological science course. Dual listed with WMST 4175; cross listed with INST/NURS 5175.

5200. Gender and Race in the Economy. 3. Focuses on the role gender and race play in the economy; specifically the way that gender and race affect economic outcomes for individuals in the United States. Cross listed with AGEC 5200. Dual listed with WMST 4200. *Prerequisites:* AGEC 1020 or equivalent, or SOC 1000, or WMST 1080, and WB.

5210. Feminist Research Methods. 3. Introduces students to feminist methods of research problem formulation, data acquisition, analysis, and presentation of research findings regarding topics related to sex, gender

and sexuality. Requires students to participate in research projects. Dual listed with WMST 4210. *Prerequisites*: Nine hours of WMST or permission of the instructor.

5233. Race, Gender, Ethnicity in the Media. 3. Examine the role mass media plays in the Black community and other racial, ethnic, gendered, and socioeconomic communities. Students will develop a critical understanding of the way the mass media uses stereotypes and prejudice to influence society's views about ethnic minorities and women in in contemporary United States society. Cross-listed with AAST 5233 and COJO 5233; dual-listed with WMST 4233. *Prerequisites:* AAST 1000, any AAST 2000-level course, or three hours of any level of WMST courses, or three hours of any level COJO courses; WB, and junior/senior standing.

5240. Global Sex Work and Trafficking. 3. Drawing upon case studies from Africa, Asia, the Americas and Europe, this course explores the gendered intersections of power and privilege through the lens of sex work, broadly defined as the exchange of intimacy for something of value, and trafficking, defined as coerced forms of sex work. Dual listed with WMST 4240; cross listed with INST 5240. *Prerequisite:* 3-6 hours of WMST or INST.

5330. European Gender History. 3. The experiences of women and the history of gender from the Renaissance through the nineteenth century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. Dual listed with WMST 4330; cross listed with HIST 4330/5330. *Prerequisite:* HIST 1110 or 2110.

5335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with HIST 5335, dual listed with WMST 4335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

5360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. The complexity and diversity of Indian women's experiences throughout history are emphasized. Much of the class concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Dual listed with WMST 4360; cross listed with SOC 5360. Prerequisite: 6 hours of AIST 2000-level classes.

5400. Women and Work. 3. Surveys general patterns of women's paid and unpaid work in the U.S. and abroad. Offers reconceptualizations of the meaning of work in women's lives, as well as debates surrounding comparable worth, pay equity, women's work experience and women in the world economy. Dual listed with WMST 4400; cross listed with SOC 4400/5400. *Prerequisite:* six hours of women studies or sociology.

5450. Ecofeminism. 3. Focus is on issues of gender, women and ecology. Ecofeminist thinkers argue that there is no liberation for women and no solution to the ecological crisis without a fundamental shift in relationships of domination. Uniting the two movements results in a radical reshaping of modern socioeconomic relations. Dual listed with WMST 4450. *Prerequisite:* six credits from women's studies, philosophy, and/or ENR.

5500. Readings in Women's Studies. 3. An interdisciplinary course at graduate level focusing on feminist criticism and theory, which draws on current debates in feminist analysis from the general areas of history, literature and social science, to inform students of reformulations of research and unresolved issues. Identical to HIST 5500. *Prerequisite:* graduate status, 12 hours of 4000-level work.

5520. Gender and Sexuality in Postcolonial Writing. 3. [CH,D◀▶(none)] Increases knowledge of history, cultural representations, and understandings of gender in formerly colonized areas. It engages with the provocative contributions of postcolonial theory and advances comprehension of the different issues confronted by women, men, and sexual minorities. Literature in different regions of the world may be highlighted. Dual listed with WMST 4520. Prerequisites: any two English/writing courses, or any WMST course.

5580. Gender, Global Change, and Development. 3. Examines the global intersections of gender and public policy through its analysis of five central themes: [1] international development discourse in practice; [2] feminized labor and migration; [3] women's unequal access to resources (including land ownership and education); [4] agricultural production and sustainability; [5] health, reproduction and mothering. Dual listed with WMST 4580; cross listed with INST 5580. *Prerequisite:* 3-6 hours of WMST or INST courses. (Offered once a year)

5590. Women of India. 3. Introduces students to concepts that influence the daily lives of contemporary women from India. Organized around two themes: how women have made history in India, and how today's women are performing, confronting and modifying cultural traditions. *Prerequisites:* USP WA class and a CS or CH class.

5650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with AMST/CHST/INST 5650. Dual listed with WMST 4650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

5710. Feminist Theoretical Perspectives. 3. Intensive introduction to the epistemology and application of a wide range of trans-historical, trans-cultural, and trans-national feminist theories. Students will be asked to apply self-selected feminist theories to their own thesis work and graduate fields, as well as to current examples of sex, gender, gender performance, and gendered coding in American media. *Prerequisite*: graduate standing.

5770. Gender and Film. 3. Investigates gender construction in mainstream, mainly contemporary Hollywood cinema. Includes readings of seminal essays in film theory and extensive viewing of films, which provide critical tools to understand how and why stereotypical images are presented, how and why the spectator is manipulated to identify with these images. Dual listed with WMST 4770. *Prerequisites:* WMST 1080, 3500 or 3710.

5775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. Dual listed with WMST 4775; cross listed with ANTH 5775. *Prerequisite:* ANTH 1200, 2000.

5780. History of Women Artists. 3. Studies documented influence of women as subjects, makers and receivers of art. Emphasizes careers and works of women over a wide range of times and places and under a variety of social circumstances. Greatly emphasizes developments in the twentieth century. Dual listed with WMST 4780. *Prerequisites:* ART 2010 or ART 2020 or 3 hours of Women's Studies courses; and WB.

5830. Victorian Women's Lives: Their Art, Literature, and Culture. 3. An interdisciplinary approach to the study of women's issues in art, using literary, cultural and sociological texts to enlarge the art historical basis. Topics include "domestic goddess," class issues, racial questions, working women, prostitution, education, marriage and divorce. Dual listed with WMST 4830; cross listed with ENGL 5830. *Prerequisite:* ART 2020 or ENGL/WMST 1080.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 14). Graduate level course designed for students who are involved in research for their thesis project. Also designed for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5970. Independent Studies. 1-4 (Max. 8). Allows the graduate student to pursue studies in gender issues with the supervision of an instructor from the Women's Studies faculty. *Prerequisite:* graduate standing.

5990. Internship. 1-12 (Max. 12). *Prerequisite:* graduate standing.

Geography

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CHEN XU, B.S. Sichuan University, China 1999; M.S. Sam Houston State University 2005; Ph.D. Texas A&M University 2010; Assistant Professor of Geography 2014.

Senior Research Scientist:

JEFFREY D. HAMERLINCK, B.S. University of North Dakota 1988; M.P. University of Wyoming 1992; Ph.D. University of Colorado - Boulder 2011; Director, Wyoming Geographic Information Sciences Center (WyGISC) 2004.

Assistant Research Scientist:

SHANNON E. ALBEKE, B.A. University of Colorado, Boulder 1997; Ph.D. University of Georgia 2010. Assistant Research Scientist, 2010.

PADDINGTON HODZA, BSC, University of Zimbabwe, 1994; MSC, University of Zimbabwe, 1998; Ph.D. West Virginia University, 2007; Assistant Director, Wyoming Geographic Information Sciences Center (WyGISC); Assistant Research Scientist, 2013.

Adjunct Faculty:

Steven D. Prager

Professor Emeritus:

John L. Allen, William L. Baker, Ronald E. Beiswenger, Deborah D. Paulson, Thomas Buchanan

The department of Geography is comprised of faculty with interests and expertise in geography, planning, and resource management. The department focuses upon the following:

1. The origin and nature of the physical and cultural environment, how the physical environment and its natural resources form, and how the environment and natural resources affect the quality of life.
2. The ways in which people and institutions affect natural resources and the environment.
3. The variety of methods and techniques with which we solve or prevent problems through the planning and management of natural resources.
4. The ways in which human institutions (e.g. political, economic, social) interact to produce diverse human landscapes.

Four Fundamentals of Geographic Learning

The Department of Geography has identified four fundamental goals of geography to emphasize in its undergraduate curriculum. These four goals are at the intersection of topically important areas in the discipline of geography. We continue to evaluate student learning in our program to insure our curriculum addresses these fundamental goals as effectively as possible.

Goal 1 – Human-Environment Interaction

Students will be able to identify and explain how humans modify the environment and affect Earth's biophysical systems through their human activities.

Goal 2 – Biophysical Systems

Students will be able to identify and explain an array of patterns, processes, and interactions in Earth's biophysical systems occurring at different spatial scales.

Goal 3 – Human-Cultural Systems

Students will be able to identify and explain an array of patterns, processes, and interactions across Earth's human landscapes at different spatial scales.

Goal 4 – Geographic Thought, Methods and Analysis

Students will understand basic geographic concepts and ideas, and will be capable of using them to inform their work. Students will also demonstrate the ability to select and use appropriate tools and techniques for addressing geographic problems and conducting geographic analysis. They will also be able to use multiple methods to examine, represent, and visualize Earth and its geographic characteristics.

Undergraduate Major

In addition to course work required by the university and the college, majors must complete 40 hours of department requirements, all of which must be completed with a grade of C or above. Note: students not pursuing one of the five existing concentrations but who accumulate 15 or more of their 26 content credits in Physical Geography and Geographic Information Science qualify for the B.S. degree. Those accumulating 15 or more of their 26 content credits in Natural Resource Management and Human Geography qualify for either a B.S. or a B.A. degree. Students must declare to their academic adviser their preference of degrees prior to graduation. Students in both the B.A. and B.S. programs must complete the following:

Core requirements: 14 hours
GEOG 1000 World Regional Geog.....3
GEOG 1010 Intro to Physical Geography ...4
GEOG 1020 Intro to Human Geog.....3
GEOG 2150 Found of GIS & Tech.....4

Content areas. 26 hours distributed among a minimum of three of the following areas with at least two courses in each of two areas:

- Human geography
- Physical geography
- Geographic information science
- Natural resource management

Courses which satisfy content area requirements are identified by the following codes which appear at the end of the course descriptions: (H) human geography, (P) physical geography, (A) geographic information science, (R) natural resource management. Courses used to meet department requirements must be approved by the faculty adviser. The remaining credit hours needed for completion of the B.A. or B.S. are elective credits (approximately 13-15).

Undergraduate Concentrations

Although students are encouraged to sample from the wide variety of courses within the geography program, and the general geography major is an option selected by many students, most undergraduate majors choose to specialize in one of the department's areas of concentration. Students must maintain a 3.0 GPA in concentration area courses.

Concentration in Physical Geography (B.S.). Offerings in this concentration include an introductory survey of the natural environment and advanced course work in areas that include landforms, soils, weather and climate, glacial and periglacial environments, paleoenvironments, and biogeography. Course work in this concentration is frequently related to ongoing faculty research programs and activities. Courses in this concentration are designated with (P) in the following course listing. The concentration consists of 16 hours to include:
GEOG 1010 Intro to Phys Geog 4
and any four of the following courses
GEOG 3010 Geomorphology 3
GEOG 3450 Weather/Climate 3
GEOG 3480 Environmental Change 3
GEOG 3550 Natural Hazards & Society.....3
GEOG 4000 Terrain Analysis 3
GEOG 4450 Fluvial Geomorphology 4
GEOG 4460 Biogeography 3
GEOG 4470 Fire Ecology.....3

Concentration in Geographic Information Science (B.S.). The concentration in geographic analysis focuses upon the interface between geography and the computer. It offers specialized training in a variety of analytic tools and methods courses ranging from the design and preparation of maps using computer-aided mapping programs to the spatial analysis of physical and human phenomena using detailed computer-based geographic-based geographic information systems (GIS). Courses in this concentration are designated with an (A) in the following course listing. The concentration consists of 19 hours to include:
GEOG 2150 Found of GIS & Tech.....4
GEOG 4200 Intro to GIS 4

And at least 12 credits from among the remaining courses.
GEOG 4000 Terrain Analysis 3
GEOG 4111 Remote Sensing of Env 4
GEOG 4113 Geol. Remote Sensing 4
GEOG 4150 Cartography & Dig Map Des ..4
GEOG 4210 Advanced GIS.....4
GEOG 4211 Adv Remote Sensing of Env ...4
GEOG 4220 Spatial Modeling/Geocomp ...4
GEOG 4240 GISC for Bus. & Ind. 3
GEOG 4280 Quant Methods 4

Concentration in Natural Resource Management (B.A.) Interdisciplinary approach to the management of natural and recreational resources, with emphasis on the Rocky Mountain region. Resource management is a major focus of departmental faculty and encompasses an array of topics, including physical and social aspects of natural resource management, management of fire in natural systems, public land management, hazard studies, the planning-managing-administration of recreation and tourism resources, and the geographic analysis of resource systems. Courses in this concentration are designated as (R) in the course listing. The concentration consists of 15 hours to include:
GEOG 4040 Conservation of Natural Resources 3
and any four of the following courses
GEOG 1050 Intro to Env. & Nat. Res. 3
GEOG 2550 Recreation Nat Resources.....3
GEOG 3400 Traditional Ecol. Knowledge .3
GEOG 3550 Natural Hazards & Society.....3
GEOG 4000 Terrain Analysis 3
GEOG 4051 Env Politics 3
GEOG 4052 Fed Land Politics 3
GEOG 4080 Mgmt. Maj. River Basins 3
GEOG 4111 Remote Sensing of Env 4
GEOG 4211 Adv Remote Sensing of Env ...4
GEOG 4310 Found of Sustainable Plan 3
GEOG 4340 Nat Resource Mgt on Western Reservations 3
GEOG 4370 Environmental Planning 3
GEOG 4400 Nat Resource Policy 3
GEOG 4420 Geography & Tourism 3
GEOG 4460 Biogeography 3
GEOG 4470 Fire Ecology 3
GEOG 4750 Public Land Mgmt. 3

Concentration in Human Geography (B.A.). The human geography concentration examines how societies organize their economic, cultural, and political activities spatially, and how human societies interact with their environments. Courses in the concentration are directed toward economic, cultural, regional, and global studies. Students in this concentration typically take a variety of courses from related fields such as sociology, political science, economics, international studies, and American studies. Courses within this concentration are designated with (H) in the course listing. The concentration consists of 15 hours to include:
GEOG 1000 World Reg Geog.....3
GEOG 1020 Intro to Human Geog 3
and any three of the following courses
GEOG 2200 Geography of Wyoming 3
GEOG 2370 Chicano History 3
GEOG 3030 Geog Development 3
GEOG 3050 Econ Geography 3
GEOG 3550 Natural Hazards & Society.....3
GEOG 4013 Political Geography 3
GEOG 4050 Interm Econ Geography 3
GEOG 4310 Found of Sustainable Plan 3
GEOG 4325 Legal Aspect of Planning 3
GEOG 4330 Land Use Planning.....3
GEOG 4390 Rural/Small Town Planning ...3
GEOG 4420 Geography and Tourism.....3
GEOG 4500 The American Landscape.....3
GEOG 4502 Images of Wyoming & the West.....3
GEOG 4540 Cultural Ecology 3
GEOG 4550 Geography of Wine.....3
GEOG 4560 Global Cities 3
GEOG 4570 Cultural Geography.....3
GEOG 4572 Experience of Place.....3
GEOG 4574 Contested Landscapes.....3
GEOG 4576 Historical Landscapes.....3

Concentration in Planning (B.S.). The concentration in planning offers students a preprofessional curriculum; many students in this concentration go on to complete a graduate degree in the department's graduate planning program. The planning specialty examines the environmental, social and economic factors that influence community and regional change. The program is designed to integrate community visions with current conditions to determine options for the future. The emphasis of the planning concentration is on natural resource and rural community planning, approached from an interdisciplinary perspective. Courses within this concentration are designated with (PL) in the course listing. The concentration consists of 15 hours to include:

GEOG 4310 Found of Sustainable Planning 3
GEOG 4330 Land Use Planning.....3
and any three of the following courses
GEOG 4325 Legal Aspects of Planning.....3
GEOG 4340 Natural Res. Mgmt on Western Reservations.....3
GEOG 4370 Environmental Planning 3
GEOG 4390 Rural/Small Town Plan.....3
GEOG 4400 Natural Resource Policy.....3
GEOG 4750 Pub Land Mgt.....3

Undergraduate Minor

The department offers minors in geography, planning, and geographic information sciences. Credit requirements range from 18-20 hours of required and elective courses, all of which must be completed with a grade of C or above. Information on the minor programs is available on the geography department website.

Environment and Natural Resources

The department offers a concentration in the university's interdisciplinary program, Environment and Natural Resources. A description of the concentration requirements is available online at the ENR website.

Graduate Study

The Department of Geography offers programs leading to the Master of Arts, Master of Science in teaching, and Master of Planning degrees. Areas include: physical geography, natural resource management,spatial analysis, information, and display, and human geography. Areas in planning include: land use planning, natural resource planning, economic development natural resource planning, community and regional planning, and site development.

Program Specific Admission Requirements

In addition to the minimum requirements set forth in this *Catalog*, applicants must submit a statement of academic and professional goals. All applicants are evaluated on an individual basis. Undergraduate deficiencies, identified by the candidate and adviser, can be remedied during the degree program.

Program Specific Graduate Assistantships

Graduate assistantships are available as both teaching and research assistantships. Applicants for graduate assistantships must submit their completed materials to the graduate coordinator of the department by February 1st prior to the fall semester for which they are seeking the assistantship. Students already in the program as well as new applicants for admission may apply for graduate assistantships. Assistantship duties will be determined following the award and acceptance of the student.

Program Specific Degree Requirements

Incoming students must have a minimum undergraduate background equivalent to 15 semester hours in college-level geography courses to include 3 hours each in maps and mapping, human geography, and physical geography. Planning students may use undergraduate course work in planning, analytic tools, regional science, or other relevant subject matter to meet the undergraduate requirement. Deficiency courses prescribed by the faculty adviser do not count toward graduate program requirements, and must be taken for credit and for a grade (not S/U).

All Master Degrees (Plan A Thesis)

Thirty credit hours of approved course work (not including thesis research), a minimum of six hours of thesis research, and completion of a thesis.

Core Requirements - All Programs:
GEOG 5000 Research Perspectives.....3
Students will successfully complete at least two techniques courses totaling six or more credit hours. These may be selected from the list below. Alternatively, students may discuss with their advisor techniques courses that more appropriately support their program of study and research plans.
GEOG 4200 Introduction to Geographic Information Sciences 4
GEOG 5001 Research in Geography Colloquium 2
GEOG 5002 Geography Graduate Seminar 1
GEOG 5111 Remote Sensing of the Environment/Lab.....4
GEOG 5210 Advanced Geographic Information Systems.....4
GEOG 5220 Spatial Modeling 4
GEOG 5455 Remote Sensing of Rivers.....3
GEOG 5050 Data Management.....2
STAT 5070 Statistical Methods for the Social Sciences 3
STAT 5210 Statistical Methods.....3
AMST 5800 Historical Preservation.....3
SOC 5100 Advanced Social Research Methods 3
GEOL 5430 Applied Geostatistics 3
GEOL 5446 Introduction to Geostatistics ..3

All students must complete a thesis which shall be an original contribution to knowledge. All students must prepare a thesis proposal for submission to their committee and have committee approval to initiate research on their thesis and must successfully complete an oral defense of their thesis. The student's committee may also require a written examination.

Master of Arts in Geography

Students must fulfill all requirements listed above.

Master of Science in Teaching

Students must fulfill all requirements above, plus requirements developed in conjunction with faculty advisor in the College of Education, not to be less than 12 credit hours of courses in education and/or geography education.

Master of Planning
Core courses (12 hours)
GEOG 4310 Foundations of Sustainable Planning 3
POLS 5510 Public Policy and Program Management.....3
GEOG 5325 Legal Aspects of Planning.....3
GEOG 5330 Land Use Planning 3
Analysis courses: (three courses - 9 hours)
Statistics: (one course - 3 hours)
Techniques: (two courses - 6 hours)

Students completing the Plan A option are required to complete a minimum of 6 hours of thesis research.

Students completing the Plan B are required to complete a minimum of 6 hours of geographic research writing and two papers from the areas of planning: land use, natural resource, or small town and rural area.
Elective courses:
15 hours of elective course work in planning areas: land use, natural resource, or small town and rural area approved by faculty adviser.

Master of Arts in Geography/Water Resources
Core Requirements:
GEOG 5000 Research Perspectives.....3
GEOG 5450 Fluvial Geomorphology.....4
REWM 4700 Wildland Watershed Management 3
OR
REWM 4285 Wildland Hydrology.....3

In completing core methods requirements students may also choose GEOG 5111, Remote Sensing of the Environment (4), or GEOG 4455/5455, Remote Sensing of Rivers (3). Additional course requirements include one class from the Technical Hydrology and/or Water Quality lists for the Interdisciplinary MS Program in Hydrology & Water Resources (WARE) program and one course from the Law and Natural Resource Economics list.

Technical Hydrology Water Quality Course Requirement (at least one of the following):

CE 4800 Hydrology 3
CE 5435 Environmental Transport Processes 3
CE 5445 Hazardous Waste Site Remediation 3
CE 5810 Ground Water Hydrology.....3
CE 5860 Soil Erosion and Conservation 3
CE 5870 Water Resources Engineering 3
CE 5880 Advanced Hydrology 3
GEOL 5444 Geohydrology.....3
GEOL 5550 Numerical Methods in Ground Water Geology I.....3
GEOL 5570 Advanced Geohydrology 3
REWM 4700 Wildland Watershed Management.....3
REWM 5280 Stream Habitat Management..3
REWM 5285 Wildland Hydrology.....3
SOIL/MATH 5110 Modeling Flow Transport in Soil and Groundwater Systems 4
BOT 5740 Ecosystems Analysis 4
CE 4410 Environmental Engineering Chemistry 3
CE 4400 Design of Water Treatment Facilities 3
CE 5410 Advanced Biological Wastewater Treatment 3
CE 5450 Advanced Physical/Chemical Water Treatment Processes 3
GEOL 4490 Geochemistry 3
GEOL 5450 Water Quality Modeling 3
GEOL 5777 Geochemistry of Natural Waters 3
REWM 5710 Watershed Water Quality Management.....3
SOIL 5130 Chemistry of the Soil Environment.....4
ZOO 4440 Limnology 3

Law and Natural Resource Economics Course Requirement (at least one of the following):

AGEC 4710 Natural Resource Law and Policy 3
AGEC 4720 Water Resource Economics.....3
AGEC 5630 Advanced Natural Resources Economics 3
ECON 4400 Environmental Economics 3
ECON 4410 Natural Resources Economics 3
ECON 5400 Advanced Resource & Environmental Economics.....3
LAW 6660 Environmental Law.....3
LAW 6860 Water Rights.....3

Plan B (Non-Thesis)

Thirty credit hours of approved course work (not including geographic research writing credit), a minimum of six hours of research writing credit, and the completion of two professional research papers.

Core Requirements - All Programs:

GEOG 5000 Research Perspectives 3

Students will successfully complete at least two techniques courses totaling six or more credit hours. These may be selected from the list below. Alternatively, student may discuss with their advisor techniques courses that more appropriately support their program of study and research plans.

GEOG 4200 Introduction to Geographic Information Systems.....3
GEOG 5001 Research in Geography Colloquium 2
GEOG 5002 Geography Graduate Seminar 1
GEOG 5111 Remote Sensing of the Environment/Lab.....4
GEOG 5210 Advanced Geographic Information Systems.....4
GEOG 5220 Spatial Modeling 4
GEOG 5455 Remote Sensing of Rivers.....3
GEOG 5050 Data Management.....2
STAT 5070 Statistical Methods for the Social Sciences 3
STAT 5210 Statistical Methods.....3
AMST 5800 Historical Preservation.....3
SOC 5100 Advanced Social Research Methods 3
GEOL 5430 Applied Geostatistics 3
GEOL 5446 Introduction to Geostatistics ..3

All students must have committee approval to initiate research on their professional papers and must successfully complete an oral defense of their professional papers. The student's committee may also require a written examination.

Geography (GEOG)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000 [G&R 1000]. World Regional Geography. 3. [CS,G◀▶H] Covers the distributions, traits, and processes of the Earth's peoples and landscapes through the perspective of regional geography, which is the study of the spatial relationships of natural environments and human societies. Equivalent to INST 1060. Credit cannot be earned in both GEOG 1000 and INST 1060.

1010 [G&R 1010]. Introduction to Physical Geography. 4. [SE◀▶PN] Systematically studies natural aspects of geographic environments, including weather and climate, landforms, soils and vegetation. Lab fee required. (Offered both semesters)

1020 [G&R 1020]. Introduction to Human Geography. 3. [CS,G◀▶H] Analyzes spatial patterns of and interaction between the world's great cultural systems. Includes settlement patterns, behavioral patterns, agricultural land use and resource utilization. (Offered both semesters)

1050 [G&R 1050]. Introduction to Environment and Natural Resources. 3. Examines human interaction with environment, ranging from regional to global scales, from perspectives of environmental effects on human life, human effects on environment and approaches to environmental management. (Normally offered spring semester) (R)

2150 [G&R 2150]. Foundations of Geo Information Science and Technology. 4. [L◀▶(none)] Overviews the role of geographic information and technology in modern society. Includes discovery and accessing geospatial data and information for both research and enjoyment, with an emphasis on reading and analyzing maps and visualizations to support geographical reasoning. Lab provides hands-on experience working with maps and related geographic information technologies. (Normally offered spring semester) (A)

2200. [G&R 2200] Geography of Wyoming and the West. 3. Covers the distributions, traits, and processes of Wyoming's people and landscapes, and their context in the West, through the perspective of regional geography. *Prerequisite:* GEOG 1010 or 1020. (Offered based on sufficient demand and resources) (H)

2370. Chicano History: Origins to 1900. 3. [CS,D◀▶(none)] General survey that traces the geographic distribution and historical processes that have shaped the life experiences, socio-economic development and cultural contributions of peoples of Mexican descent in the United States from their indigenous and Hispanic origins to the end of the 19th century. Cross listed with CHST/HIST 2370. (H)

2550 [G&R 2550]. Recreation and Natural Resources. 3. Introduces outdoor recreation agencies and programs; supply and demand for outdoor recreation resources; and relationship of recreation to the conservation of natural resources. (Normally offered fall semester) (R)

3010 [G&R 3010]. Geomorphology of Earth's Dynamic Landscapes. 3. A Systematic exploration of Earth's surface, emphasizing the geographic distribution of various landforms and their evolution over time. Introduces general geomorphic principles and describes the application of these principles to specific landscape features. The processes that drive landscape change are examined through case studies, computer-based mapping exercises, and basic calculations. *Prerequisites:* QA, QB, and either GEOG 1010 or GEOL 1500. (P)

3030 [G&R 3030]. Geography and Development. 3. [CS,G◀▶(none)] Examines distribution of wealth and poverty in the world; theories of development, from traditional modernization theories through Marxist critiques and sustainable development; and case studies from around the world of development successes and failures, chosen to illustrate and illuminate theories of development. *Prerequisite:* GEOG 1000 or 1020 or 9 credit hours of social science with global focus. (Normally offered fall semester) (H)

3050 [G&R 3050]. Economic Geography. 3. Economic Geography is the study of the location, distribution and spatial organization of economic actvities across the globe; specifically how the economic realm is intertwined with other spheres of international social life. It explores the inherent logics and mechanisms of the capitalist system, and the social and spatial inequalities that result. *Prerequisite:* 6 hours of Social Sciences or International Studies. (Normally offered fall semester every other year) (H)

3150. Survey of Remote Sensing Applications. 3. Provides an introduction to remote sensing with a survey of applications in different fields. It include a brief introduction to fundamental of remote sensing and surveys applications of aerial photography, multi-and hyperspectral, active and thermal remote sensing, and global change remote sensing. Cross listed with BOT 3150. *Prerequisites:* completion of a USP QA course and one science course with laboratory. (A)

3280. Spatial Methods. 4. [(none)◀▶COM3] Introduction of statistical methods for the analysis of geo-spatial data; point, line/network, and areal units. The application of quantitative measurements to examining the spatial relationship of physical and socio-economic factors in problem-solving. *Prerequisites:* at least one geography course and completion of either STAT 2010, 2050, or 2070. (A)

3400. Traditional Ecological Knowledge. 3. [CS,D◀▶(none)] Description of the interaction between economy, religion, language and the ecosystem for select indigenous peoples and discussion of the pedagogical methods for preserving their ecological knowledge. An examination of the conflict between contemporary society's demands and preserving traditional society's heritage. Cross listed with AIST 3400. *Prerequisite:* one course in American Indian culture. (R)

3450 [G&R 3450]. Weather and Climate. 3. Systematically examines elements and controls of weather and climate with application to regions. Cross listed with ENR 3450. *Prerequisite:* GEOG 1000, 1010 or 1020. (Normally offered fall semester) (P)

3480 [G&R 3480]. Environmental Change. 3. [WB,G◀▶(none)] Examines changes in the bio-physical environments and landscapes of Earth during its habitation by humans. Emphasizes integrated approaches to understanding environmental changes based on climatological, ecological, geological, archeological, and historical evidence. Explores how humans have modified Earth's environments and how societies have responded to natural and anthropogenic environmental change. Cross listed with ESS 3480. *Prerequisites:* GEOG 1010 or any USP S, SB, SE or SP course; any WA course. (P)

3550 [G&R 3550]. Natural Hazards and Society. 3. [CS◀▶(none)] Considers societal structures and processes as they interact with hazards in the natural environment. (Offered based on sufficient demand and resources) (H,P,R)

4000 [G&R 4000]. Terrain Analysis. 3. Studies techniques for acquiring and analyzing spatial data from maps, remotely sensed imagery and field surveys for landscape assessment. Emphasizes deriving maps that describe physical suitability of landscapes for specific human activities. Field trip required. *Prerequisites:* GEOG 2150 and junior standing. (P,A,R)

4013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Dual listed with GEOG 5013; cross listed with POLS 4013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science. (H)

4040 [G&R 4040]. Conservation of Natural Resources. 3. [CS◀▶(none)] Geographically analyzes conservation of natural and human resources, as well as political, social and ethical ramifications of our environmental policy. Cross listed with ENR 4040. *Prerequisite:* 6 hours of geography or ENR. (R)

4050 [G&R 4050]. Intermediate Economic Geography. 3. Studies spatial interaction of pertinent physical, economic and social variables as they influence behavior of industrial, agricultural and commercial activities. *Prerequisite:* GEOG 3050. (Offered based on sufficient demand and resources) (H)

4051 [G&R 4051]. Environmental Politics. 3. [WC◀▶(none)] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, ENR, POLS and REWM 4051. *Prerequisite:* POLS 1000. (R)

4052 [G&R 4052]. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/ENR/AMST/REWM 4052. *Prerequisite:* POLS 1000. (R)

4080 [G&R 4080]. Management of Major River Basins. 3. Examines geography of water resources, including distribution, water as a resource and water as a hazard to humans. Focuses on water management case studies on the scale of major river basins in North America and elsewhere in the world. *Prerequisites:* GEOG 4040 and junior standing. (Offered based on sufficient demand and resources) (R)

4111. Remote Sensing of the Environment. 4. Combined lecture and laboratory course introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applications. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with GEOG 5111; cross listed with BOT 4111. *Prerequisites:* QA and one science course with lab. (A) (R)

4113. Geological Remote Sensing. 4. Acquaints students with aircraft and spacecraft remote sensing of the environment, emphasizing geologic application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. Laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, stratigraphy, environmental geology and geologic

hazards. Dual listed with GEOG 5113; cross listed with GEOL 4113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 or MATH 1450. (A)

4150 [G&R 4150]. Cartography and Digital Map Design. 4. Studies techniques for effectively selecting, analyzing and graphically displaying geographic information. *Prerequisite:* GEOG 2150. (Normally offered spring semester) (A)

4200 [G&R 4200]. Introduction to Geographic Information Systems. 4. Fundamental concepts, theories and applications in geographic information systems and science. *Prerequisite:* GEOG 2150. (Normally offered fall semester) (A)

4210 [G&R 4210]. Advanced Geographic Information Systems. 4. Advanced study of programs, data structures, and techniques for spatial data display and analysis. Dual listed with GEOG 5210. *Prerequisite:* GEOG 4200. (Normally offered spring semester) (A)

4211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Cross listed with BOT 4211; dual listed with GEOG 5211. *Prerequisite:* BOT/GEOG/GEOL 4111. (A, R)

4220. Spatial Modeling and Geocomputation. 4. Examines the theory and development of models of spatial patterns and process. Modeling these systems often required techniques not readily available in a GIS environment. Examines GIS and geocomputational methods to solve these problems as well as issues related to error, representation, and scale. Dual listed with GEOG 5220. *Prerequisite:* GEOG 4200/4210. (A)

4240. GIScience for Business and Industry. 3. Examines a variety of roles that GIScience plays in the modern day business landscape. Through a combination of lectures and hands-on work with some of the same tools employed by industry, students will become acquainted with the roles and applications of GIScience in a business context. Dual listed with GEOG 5240. *Prerequisite:* junior standing; QB. (A)

4280 [G&R 4280]. Quantitative Methods. 4. Examines and utilizes mathematical and statistical tools in analyzing geographic and spatial data. Dual listed with GEOG 5280. *Prerequisite:* STAT 2070 or equivalent. (Normally offered spring semester) (A)

4300 [G&R 4300]. GPS for Natural Resource Management. 3. Introduction to the basic concepts of global positioning systems, project planning and development, integration into a GIS, and its applications to natural resource management. Dual listed with GEOG 5300. *Prerequisites:* senior status and GEOG 2150. (A)

4310 [G&R 4310]. Foundations of Sustainable Planning. 3. Description and analysis of planning that involves a citizen involvement process to determine the future direction of a community or region. Sustainability concepts are described to provide a framework for social equity, environmental protection, and economic longevity, the fundamental elements of a community or regional comprehensive plan. Dual listed with GEOG 5310. *Prerequisite:* junior standing. (Normally offered fall semester) (H,R, PL)

4325 [G&R 4325]. Legal Aspects of Planning. 3. Review of the U.S. Constitution, federal and state laws and statues, and pertinent court cases that directly relate to planning policy at the federal, state and local level. Examination of the legal system to provide services and protect the health, safety, and welfare of citizens with regard to private property rights. *Prerequisites:* junior standing, USP "V" course. (PL) (H)

4330 [G&R 4330]. Land Use Planning. 3. Advanced study of processes expressed as a specific activity on the land. An examination and analysis of the interacting environmental, economic, and social factors that produce the land activity. Dual listed with GEOG 5330. (PL) (H)

4340 [G&R 4340]. Natural Resource Management on Western Reservations. 3. Designed to examine natural resource management techniques on western reservations. Topics to be discussed will focus on the management and planning of water, grazing, extractive industries and forestry. Field work on the Wind River Indian Reservation is a part of the class. Cross listed with AIST 4340. *Prerequisite:* 6 hours of 2000-level AIST classes. (PL) (H)

4370 [G&R 4370]. Environmental Planning. 3. A planning-oriented approach to ecosystems theory based on the federal/legal regulatory foundation. An examination of scientific and alternative perspectives on the comparative dynamics of natural and human-oriented ecosystems and implementing strategies. Dual listed with GEOG 5370. (PL, R)

4390 [G&R 4390]. Rural & Small Town Planning. 3. A single community planning problem is assigned. Student teams play the role of community planning staff. Teams experience defining community goals; communicating with others about these goals and problem perceptions; accomplishing necessary research; generating various solutions to problems they have perceived; selected from among these solutions, and formulating a single, integrated, comprehensive plan and documenting the plan and rationale behind it. Dual listed with GEOG 5390. *Prerequisite:* work at the 4000-level in one or more of the four substantive areas, and/or consent of the instructor. (PL) (H)

4400 [G&R 4400]. Natural Resource Policy. 3. Encompasses administrative policies and programs relating to natural areas. Emphasizes the national park system. *Prerequisite:* GEOG 4750. (Offered fall semester of odd-numbered years) (R, PL)

4420 [G&R 4420]. Geography and Tourism. 3. Studies concepts, methods, conflicts and opportunities of national and international tourism. Emphasizes recreation and the environment. *Prerequisites:* GEOG 1000. (Normally offered spring semester) (H)

4450 [G&R 4450]. Fluvial Geomorphology. 4. A systematic examination of rivers and related land forms. Emphasizes understanding how processes of flow and sediment transport influence channel form and behavior. Considers rivers systems across a range of scales, from movement of individual sediment particles to organization of continental drainage basins. Explores connections to aquatic ecosystems and human impacts. Dual listed with GEOG 5450. *Prerequisites:* GEOG 3010 or GEOL 2100 or 2150. (P)

4455. Remote Sensing of Rivers. 4. Explores the application of remote sensing data and techniques to the study of river systems and introduces the physical principles that enable various channel attributes to be inferred from different types of image data. A series of computer-based exercises illustrate methods for characterizing river form and behavior via remote sensing. Dual listed with GEOG 5455. *Prerequisites:* junior standing and one prior course in remote sensing.

4460 [G&R 4460, 3460]. Biogeography. 3. A systematic study of the distribution of plants and animals, communities and ecosystems, the processes that produce patterns of distribution and their change over time. Interactions of climate, soil geomorphology, biota and human activities are emphasized. *Prerequisites:* junior standing and GEOG 1010 or LIFE 2022 or 2023. (P, R)

4470 [G&R 4470]. Fire Ecology. 3. Natural and human-caused fires are an important phenomenon affecting ecosystems and human communities throughout the world. Explores

the geography, ecology, and management of fires. Dual listed with GEOG 5470. *Prerequisite:* GEOG 4460, BOT 4700, LIFE 3400 or graduate standing. (P, R)

4500 [G&R 4500]. The American Landscape. 3. Provides a basis for interpreting the nature and content of the contemporary landscapes of the United States by viewing those landscapes in the process of creation and change and investigates the relationship between landscape and American environmental attitudes. Students are introduced to research techniques and methodologies in historical geography. *Prerequisite:* GEOG 1010 or 1020, or 6 hours in social science. (H)

4502. Images of Wyoming and the West. 3. The West is nothing more than a barren, desolate landscape to some while to others it offers great spiritual and cultural significance. Examines how individuals and groups perceive Wyoming and the West, how such perceptions have been constructed over time, and how these differing views create images of the region both real and imagined. Dual listed with GEOG 5502. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing. (H)

4540 [G&R 4540]. Topics in Cultural Ecology:_____. 3 (Max. 6). [WC◀▶(none)] Examines selected topics of human-environment interaction from a cultural ecological perspective. May be repeated for a maximum of 6 credits under different course topics. Dual listed with GEOG 5540. *Prerequisites:* junior standing and 4 hours biological or earth science and 6 hours social science. (H)

4550. Geography of Wine. 3. Examine the regional influence of climate, terrain and cultural characteristics on the production of grape varieties and demonstrate the implications of this influence on the location and distribution of wines produced. Discussion will focus on the world-wide production and consumption of wine and impacts of multi-national corporations. *Prerequisites:* junior standing and at least 21 years of age. (H)

4560. Global Cities. 3. Globalization accelerates urbanization processes and creates a new type of city, the global city. This course introduces debates over global cities, urban culture, new urban landscapes, urban planning practices, and social disparity. It uses case studies on the cities around the world to explore the diversity of global city formation processes. Dual Listed with GEOG 5560; cross listed with INST 4560. *Prerequisites*: 9 hours of international studies or geography.

4570. Cultural Geography. 3. Cultural Geography is an overview in qualitative cultural landscape studies. The course emphasizes what a cultural landscape is, how it can be examined, and what can be learned from such landscapes. Students are exposed to readings in cultural geography from a wide array of viewpoints with an emphasis placed on classic works. Dual listed with GEOG 5570. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing. (H)

4572. Experience of Place. 3. Examines how individuals and groups perceive specific geographic locations, how such perceptions are constructed, and how these differing views and feelings play out in our everyday. Dual listed with GEOG 5572. *Prerequisites:* GEOG 1000 or GEOG 1020. (H)

4574. Contested Landscapes. 3. Explores the representation of place and how various groups often have differing views of how a place should be represented and/or thought of. Various local representations of contested land use, group place identity, and personal place identity are discussed. Dual listed with GEOG 5574. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing. (H)

4576. Historical Landscapes. 3. A cultural landscape expresses much of who we are. Students examine how one can learn from the past as well as more accurately assess our present culture by examining the layers of culture offered on the landscape. Dual listed with GEOG 5576. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing. (H)

4750 [G&R 4750, 4700]. Public Land Management. 3. Teaches management of the federal and public lands of the United States. Includes consideration of management issues, agencies and organizations, and management approaches for public lands and associated natural resources. Dual listed with GEOG 5750. *Prerequisite:* 6 hours of geography or ENR. (Offered once a year) (R, PL)

4860 [G&R 4860]. Field Studies. 1-6 (Max. 6). Intensive introduction to field methods used in geographic research in one or more of the subdivisions of geography. Dual listed with GEOG 5860.

4865 [G&R 4865]. Directed Studies/Research Problems. 1-6 (Max 6). Intensive introduction to methods used in geographic research. Dual listed with GEOG 5865. *Prerequisites:* consent of instructor and at least 12 hours in geography.

4870 [4990]. Practicum. 1-6 (Max. 12). Experience in applying student skills and training in an agency, organization, or business. Offered for S/U only. Dual listed with GEOG 5870. *Prerequisites:* for majors only, minimum of 12 hours in the major, junior standing and consent of the instructor. (Offered fall, spring and summer)

4875 [G&R 4875, 4950]. Independent Studies. 1-6 (Max. 6). Considers current research topics in consultation with faculty member. Dual listed with GEOG 5875. *Prerequisite:* 9 hours in subject area of topic of current research. (Offered fall, spring and summer)

4880 [G&R 4880, 4850]. Current Topics. 1-6 (Max. 9). Special course on a topic of current interest. Dual listed with GEOG 5880. *Prerequisite:* junior standing. (Offered fall, spring and summer)

4885 [G&R 4885, 4900]. Seminar: _____. 1-3 (Max. 6). Faculty-student discussion, reading, and study focused on a selected topic and interest. Dual listed with GEOG 5885. *Prerequisite:* GEOG 4750. (Offered based on sufficient demand and resources)

5000. Research Perspectives. 3. Focuses upon the historical development, heritage and topical breadth of geography. Special emphasis is given to the changing approaches and philosophies for conducting research in geography. *Prerequisite:* graduate student admitted to our program, or, any other student with 15 hours of geography courses.

5001. Research in Geography Colloquium. 2. Colloquium series and discussion to review and critique examples of current research in geography and allied disciplines. This course builds on the theoretical and philosophical foundations from Research Perspectives. *Prerequisite*: GEOG 5000.

5002. Geography Graduate Seminar. 2. Research seminar providing third-semester graduate students a public and formal opportunity to present their research. *Prerequisite*: GEOG 5001.

5013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Cross listed with POLS 5013 and dual listed with GEOG 4013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science.

5050. Techniques in Environmental Data Management. 4. Centers on the role of information technology in support of scientific research. Through integration of multiple software packages (e.g. Relational databases, ProgramR and ArcGIS), proven database designs, and SQL scripting, increased efficiency and utility will occur during data analyses. These information science principles are demonstrated using project-based examples. Cross listed with ECOL/ENR 5050. Prerequisite: graduate standing.

5060. Landscape Ecology. 3. A study of structure, function, and change in the biosphere on the scale of kilometers. Includes a consideration of the effects of human land uses, natural disturbances, and other processes on landscapes. *Prerequisite:* GEOG 4460 or LIFE 3400 or BOT 4700.

5111. Remote Sensing of the Environment. 4. Combined lecture and laboratory course introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applications. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with GEOG 4111; cross listed with BOT 5111. *Prerequisites:* QA and one science course with lab.

5113. Geological Remote Sensing. 4. Acquaints students with aircraft and spacecraft remote sensing of the environment, emphasizing geologic application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. The laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, statigraphy, environmental geology and geologic hazards. Dual listed with GEOG 4113; cross listed with GEOL 5113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 or MATH 1450.

5210. Advanced Geographic Information Systems. 4. Advanced study of programs, data structures, and techniques for spatial data display and analysis. Dual listed with GEOG 4210. *Prerequisites:* GEOG 4200.

5211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Dual listed with GEOG 4211; cross listed with BOT 5211. *Prerequisite:* BOT/GEOG/GEOL 4111/5111.

5220. Spatial Modeling and Geocomputation. 4. Examines the theory and development of models of spatial patterns and process. Modeling these systems often requires techniques not readily available in GIS environment. Examines GIS and geocomputational methods to solve these problems as well as issues related to error, representation, and scale. Dual listed with GEOG 4220. *Prerequisite:* GEOG 4200/4210.

5240. GIScience for Business and Industry. 3. Examines a variety of roles that GIScience plays in the modern day business landscape. Through a combination of lectures and hands-on work with some of the same tools employed by industry, students become acquainted with the roles and applications of GIScience in a business context. Dual listed with GEOG 4240. *Prerequisites:* junior standing, QB.

5300. GPS for Natural Resource Management. 3. Introduction to the basic concepts of the global positioning system, project planning and development, integration into a GIS, and its applications to natural resource management. Dual listed with GEOG 4300. *Prerequisite:* senior or graduate status and GEOG 2150.

5310. Foundations of Sustainable Planning. 3. Description and analysis of planning that involves a citizen involvement process to determine the future direction of a community or region. Sustainability concepts are described to provide a framework for social equity, environmental protection, and economic longevity, the fundamental elements of a community or regional comprehensive plan. *Prerequisite:* junior standing.

5325. Legal Aspects of Planning. 3. Review of the U.S. Constitution, federal and state laws and statues, and pertinent court cases that directly relate to planning policy at the federal, state and local level. Examination of the legal system to provide services and protect the health, safety, and welfare of citizens with regard to private property rights. Dual listed with GEOG 4325. *Prerequisites:* junior standing, USP V course.

5330. Land Use Planning. 3. Advanced study of processes expressed as a specific activity on the land. An examination and analysis of the interacting environmental, economic, and social factors that produce the land activity. Dual listed with GEOG 4330. *Prerequisite:* graduate standing in GEOG.

5370. Environmental Planning. 3. A planning-oriented approach to ecosystems theory based on the federal/legal regulatory foundation. An examination of scientific and alternative perspectives on the comparative dynamics of natural and human-oriented ecosystems and implementing strategies. Dual listed with GEOG 4370. *Prerequisite:* GEOG 4330/5330.

5390. Rural and Small Town Planning. 3. A single community planning problem is assigned. Student teams play the role of community planning staff. Teams experience defining community goals; communicating with others about these goals and problem perceptions; accomplishing necessary research; perceived; selecting from among these solutions, and formulating a single, integrated, comprehensive plan, and documenting the plan and rationale behind it. Dual listed with GEOG 4390. *Prerequisite:* work at the 4000-level in one or more of the four substantive areas, and/or consent of the instructor.

5450. Fluvial Geomorphology. 4. A systematic examination of rivers and related land forms. Emphasizes understanding how processes of flow and sediment transport influence channel form and behavior. Considers rivers systems across a range of scales, from movement of individual sediment particles to organization of continental drainage basins. Explores connections to aquatic ecosystems and human impacts. Dual listed with GEOG 4450.

5455. Remote Sensing of Rivers. 4. Explores the application of remote sensing data and techniques to the study of river systems and introduces the physical principles that enable various channel attributes to be inferred from different types of image data. A series of computer-based exercises illustrate methods for characterizing river form and behavior via remote sensing. Dual listed with GEOG 4455. *Prerequisites:* junior standing and one prior course in remote sensing.

5470. Fire Ecology. 3. Natural and human-caused fires are an important phenomenon affecting ecosystems and human communities throughout the world. Explores the geography, ecology, and management of fires. Dual listed with GEOG 4470. *Prerequisite:* GEOG 4460, BOT 4700, LIFE 3400 or graduate standing.

5502. Images of Wyoming and the West. 3. The West is nothing more than a barren, desolate landscape to some while to others it offers great spiritual and cultural significance. Examines how individuals and groups perceive Wyoming and the West, how such perceptions have been constructed over time, and how these differing views create images of the region both real and imagined. Dual listed with GEOG 4502. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing.

5540. Topics in Cultural Ecology. 3 (Max. 6). Examination of a selected topic of human-environment interaction from a cultural ecological perspective. May be repeated for a maximum of 6 credits under a different course topic. Dual listed with GEOG 4540. *Prerequisites:* junior standing and 4 credits of biological or earth science and 6 credits of social science.

5560. Global Cities. 3. Globalization accelerates urbanization processes and creates a new type of city, the global city. This course introduces debates over global cities, urban culture, new urban landscapes, urban planning practices, and social disparity. It uses case studies on the cities around the world to

explore the diversity of global city formation processes. Dual Listed with GEOG 4560; cross listed with INST 5560. *Prerequisites*: 9 hours of international studies or geography.

5570. Cultural Geography. 3. Cultural Geography is an overview in qualitative cultural landscape studies. The course emphasizes what a cultural landscape is, how it can be examined, and what can be learned from such landscapes. Students are exposed to readings in cultural geography from a wide array of viewpoints with an emphasis placed on classic works. Dual listed with GEOG 4570. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing.

5572. Experience of Place. 3. Examines how individuals and groups perceive specific geographic locations, how such perceptions are constructed, and how these differing views and feelings play out in our everyday. Dual listed with GEOG 4572. *Prerequisites:* GEOG 1000 or GEOG 1020.

5574. Contested Landscapes. 3. Explores the representation of place and how various groups often have differing views of how a place should be represented and/or thought of. Various local representations of contested land use, group place identity, and personal place identity are discussed. Dual listed with GEOG 4574. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing.

5576. Historical Landscapes. 3. A cultural landscape expresses much of who we are. Students examine how one can learn from the past as well as more accurately assess our present culture by examining the layers of culture offered on the landscape. Dual listed with GEOG 4576. *Prerequisite:* GEOG 1000 or GEOG 1020 and junior standing.

5750. Public Land Management. 3. Management of the federal and public lands of the United States. Includes consideration of management issues, agencies and organization, and management approaches for public lands and associated natural resources. Dual listed with GEOG 4750. *Prerequisite:* 6 hours in geography or ENR.

5790. Research Methods. 1-3 (Max. 9). Introduction to the methodology of empirical research in related fields for advanced students. *Prerequisites:* 12 hours in the major and consent of instructor.

5870. Internship/Practicum. 1-12 (Max. 12). Experience in applying student skills and training in an agency, organization, or business. Dual listed with GEOG 4870. *Prerequisite:* for majors only, junior standing.

5875. Independent Study. 1-6 (Max. 6). Considers current research topics in consultation with faculty member. Dual listed with GEOG 4875. *Prerequisite:* 9 hours in subject area of topic of current research.

5880. Current Topics. 1-9 (Max. 9). Special course on a topic of current interest. Dual listed with GEOG 4880. *Prerequisite:* junior standing.

5885. Seminar. 1-3 (Max. 6). Faculty-student discussion, reading, and study focused on a selected topic of interest. *Prerequisite:* consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisites:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Geology and Geophysics

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Department Head: Paul L. Heller

Professors:

CARRICK M. EGGLESTON, A.B. Dartmouth College 1983; Ph.D. Stanford University 1991; Professor of Geology 2006, 1995.

B. RONALD FROST, B.A. University of Virginia 1969; M.S. University of Washington 1971; Ph.D. 1973; Professor of Geology 1989, 1978.

CAROL D. FROST, A.B. Dartmouth College 1979; Ph.D. Cambridge University 1984; Professor of Geology 1995, 1983.

PAUL L. HELLER, B.S. State University of New York 1974; M.S. Western Washington University 1978; Ph.D. University of Arizona 1983; Professor of Geology 1994, 1983.

W. STEVEN HOLBROOK, B.S. Pennsylvania State University 1982; M.S. Stanford University 1985; Ph.D. 1989; Professor of Geophysics 2003, 1997.

NEIL F. HUMPHREY, B.S. University of British Columbia 1978; M.S. University of Washington 1983; Ph.D. 1987; Professor of Geology 2002, 1990.

BARBARA E. JOHN, B.A. University of California-Berkeley 1978; Ph.D. University of California-Santa Barbara 1987; Professor of Geology 2002, 1992.

SUBHASHIS MALLICK, B.S. Indian Institute of Technology 1976; M.S. 1978; Ph.D. University of Hawaii 1987; Professor of Geology and Geophysics and the School of Energy Resources 2008.

JAMES D. MYERS, B.S. University of Rhode Island 1973; M.A. The Johns Hopkins University 1977; Ph.D. 1979; Professor of Geology 1993, 1981.

KENNETH W. W. SIMS, B.A. Colorado College 1986; M.S. University of New Mexico 1989; Ph.D. University of California - Berkeley 1995; Professor of Geology 2014, 2009.

ARTHUR W. SNOKE, A.B. Franklin and Marshall College 1967; Ph.D. Stanford University 1972; Professor of Geology 1984.

Associate Professors:

MICHAEL J. CHEADLE, B.A. Oxford University 1981; M.S. Cornell University 1984; Ph.D. Cambridge University 1989; Associate Professor of Geology and Geophysics 2001.

PO CHEN, B.S. Beijing University 2000; Ph.D. University of Southern California 2005; Associate Professor of Geology and Geophysics and the School of Energy Resources 2014, 2008.

MARK T. CLEMENTZ, B.S. University of Missouri, Columbia 1996; Ph.D. University of California, Santa Cruz 2002; Associate Professor of Geology 2011, 2005.

KENNETH G. DUEKER, B.A. Whitman College 1984; Ph.D. University of Oregon 1994; Associate Professor of Geophysics 2006, 2000.

ROBERT R. HOWELL, B.S. University of Michigan 1974; Ph.D. University of Arizona 1980; Associate Professor of Geology and Geophysics 1992, 1986.

JOHN KASZUBA, B.S. Beloit Collge 1982; M.S. Virginia Polytechnic Institute & State University 1986; Ph.D. Colorado School of Mines 1997; Associate Professor of Geology and the School of Energy Resources 2008, 2012.

CLIFFORD S. RIEBE, B.S.E. University of Michigan 1992; Ph.D. University of California-Berkeley 2000; Associate Professor of Geology 2014, 2008.

BRYAN N SHUMAN, B.A. Colorado College 1994; M.S. Brown University 1997; Ph.D. 2001; Associate Professor of Geology 2010, 2007.

YE ZHANG, B.S. Nanjing University (PR China) 1998; M.S. University of Minnesota 2004; Ph.D. Indiana University 2005; Associate Professor of Geology 2014, 2007.

Assistant Professor:

ELLEN D. CURRANO, B.Sc. University of Chicago 2003; Ph.D. Pennsylvania State University 2008; Assistant Professor of Geology and Geophysics 2014.

DARIO GRANA, B.S. University of Pavia 2003; M.S. 2005; M.S. University of Milano-Bicocca 2006; M.S. Stanford University 2013; Ph.D. 2013; Assistant Professor of Geology and Geophysics and the School of Energy Resources 2013.

BRANDON McELROY, B.S. University of Michigan 2000; M.S. 2003; Ph.D. University of Texas 2009; Assistant Professor of Geology 2011.

ANDREW PARSEKIAN, B.S. Dickinson College 2005; Ph.D. Rutgers University 2011; Assistant Professor of Geology and Geophysics 2013.

Lecturers:

ERIN CAMPBELL-STONE, B.A. Occidental College 1992; Ph.D. University of Wyoming 1997; Associate Lecturer 2005, 2001.

RANDI S. MARTINSEN, B.S. S.U.N.Y. Stony Brook 1971; M.S. Northern Arizona University 1975; Senior Lecturer 1995.

Research Scientists:

BRADLEY CARR, B.S University of Wisconsin-Madison 1987; Ph.D. University of Wyoming 1995; Research Scientist 2013.

KEVIN R. CHAMBERLAIN, B.A. Colgate University 1979; Ph.D. Washington University 1990; Research Professor 2004, 1990.

JANET C. DEWEY, B.S. Mississippi State University 1990; M.S. Auburn University; Assistant Research Scientist 2011.

SUSAN SWAPP, B.A. Indiana University 1977; M.S. Yale University 1978; Ph.D. 1982; Senior Research Scientist 1994.

Adjunct Professors:

Vladmir Alvarado, Eric Erslev, Warren B. Hamilton, Peter H. Hennings, Ranie Lynds, Laura Vietti

Professors Emeriti:

Donald W. Boyd, James I. Drever, William E. Frerichs, Robert Houston, Jason A. Lillegraven, Ronald W. Marrs, James E. McClurg, Brainerd Mears, Jr., Peter Shive, Scott B. Smithson, James R. Steidtmann, Ronald C. Surdam

Geology is the study of the origin, history and structure of the earth. Our undergraduate offerings encompass virtually every aspect of the science, with emphasis on current theory, methods and applications. The philosophy of the department is to provide sound training in both theory and field observation, and to couple this background with a thorough education in modern laboratory, quantitative and field techniques required for an understanding of geologic processes.

The setting of the university in the Rocky Mountains is ideal because some of North America's most outstanding geologic features are within a short drive of campus. The semi-arid climate in Wyoming has resulted in excellent exposures of diverse rock types ranging in age from Precambrian to Recent. Deformation of the rocks in the region has been extensive, affording the student a field laboratory that exhibits a wide diversity of styles of faulting and folding. Mineral deposits, petroleum resources and coal abound in the region.

Undergraduate Majors

The Bachelor of Science in geology is designed for those students who intend to become professional geologists and/or those who plan to attend graduate school in geosciences. The program includes courses normally expected of graduate school applicants, including a summer field camp and courses in related sciences and mathematics. This degree program prepares students for the examination for the professional geologist license.

The Bachelor of Arts in geology and Earth sciences is specifically designed for undergraduates who wish to study Earth sciences as a foundation for careers in a variety of areas, such as environmental law, natural resource business, land use planning, Earth science education, science journalism, and many governmental positions. The B.A. program includes a broad spectrum of courses, and focuses both on information about the Earth and on how society makes decisions that affect the Earth system.

The Bachelor of Science in Environmental Geology and Geohydrology is designed for those students who intend to become professionals in environmental fields such as consulting, site assessment, hazard assessment, and remediation. The degree will prepare students for graduate school in environmental disciplines and for entry-level jobs.

Majors in any of the degree programs above may also choose to declare an affiliated degree with the School of Environment and Natural Resources by completing degree requirements for both degrees. Students should consult the section on the School of Environment and Natural Resources.

The Department of Geology and Geophysics also participates in the Earth System Science interdisciplinary program by offering a concentration in geology for the B.S. degree in ESS. Students interested in this major should consult the section on Earth System Science for curriculum requirements.

Geology Program Objectives: Bachelor of Science

The primary mission of our B.S. geology program is to provide a quality educational experience that prepares men and women to enter careers in geology and related fields. We expect that our graduates should:

- Have the basic knowledge and skills demanded for entry-level competence in typical careers in earth science.
- Be able to apply basic scientific and technical knowledge to specific tasks and problems.
- Cultivate the specific scientific and technical skills that will allow them effectively to serve their employers and to enhance their own career development.
- Develop increased capacity in the skills of independent learning, critical thinking, problem definition, and problem solving.
- Develop enhanced numerical skills and computer literacy as part of an undergraduate program designed to deliver a current and relevant knowledge of their discipline.
- Communicate effectively and professionally through oral, written, and graphical means and to participate effectively in their workplace and in individual and team-related activities.
- Have the broad general education needed to appreciate the role of Earth Sciences in the societal context and appreciate the importance of ethics in the practice of the profession.

Geology Program Goals: Bachelor of Science

The department of Geology and Geophysics has the following specific goals for its B.S. program:

- Students in the B.S. program will receive a quality preparatory education in the discipline that is current, relevant, practical, and personal.
- B.S. students who graduate with appropriate grades will be able to compete successfully for positions at graduate schools nationwide.
- B.S. students who graduate with appropriate grades will be well prepared for entry-level positions as professionals within their and other related disciplines.

Geology Program Objectives: Bachelor of Arts

The primary mission of our B.A. geology program is to provide a broad educational experience that prepares men and women for careers in earth science-related fields. We expect that our graduate should:

- Have the basic knowledge and skills demanded for entry-level competence in typical careers in earth science-related fields.
- Be able to apply their knowledge to specific situations or problems.
- Cultivate the skills and ethics that will allow them effectively to serve their employers and to enhance their own career development.
- Develop increased capacity for independent learning, critical thinking, and problem solving.
- Develop basic numerical skills and computer literacy as part of an undergraduate program designed to deliver a current and relevant knowledge of their discipline.
- Communicate effectively and professionally through oral, written, and graphical means and to participate effectively in the work environment, both in individual and team-related activities.
- Have the broad general education needed to appreciate the role of Earth Sciences in the societal context and appreciate the importance of ethics in the practice of the profession.

Geology Program Goals: Bachelor of Arts

The department of Geology and Geophysics has the following specific goals for its B.A. program:

- Students in the B.A. program will receive a broad preparatory education in earth science and related fields that is current, relevant, practical, and personal.
- B.A. students who graduate with appropriate grades will be able to compete successfully for positions at graduate schools nationwide.
- B.A. students who graduate with appropriate grades will be well prepared for entry-level positions in the geosciences and other related disciplines.

Required Academic Performance

In order to graduate with a Bachelor of Science or Bachelor of Arts degree in geology, the student must earn a letter grade of C (S where appropriate) or better in each course listed herein as part of the required course programs. This grade requirement applies to course work taken outside the department, as well as to transfer courses credited in lieu of resident requirements.

Bachelor of Science Curriculum

Geology Program

I. Required Courses **Hrs.**

One of the following:

GEOL 1005 Earth History or.....4
GEOL 1100 Physical Geology or 4
GEOL 1200 Historical Geology or.....4
GEOL 1500 Water, Dirt, Climate 4

And each of the following:

GEOL 2000 Geochemical Cycles & Earth Systems.....4
GEOL 2005 Introduction to Geophysics or GEOG 3005 Principles of Geophysics 4
GEOL 2010 Minerology 3
GEOL 2020 Petrology 2
GEOL 2100 Stratigraphy & Sedimentation..4
GEOL 4610 Structural Geology & Tectonics 4
GEOL 4717 Field Course in Geology .....6 (to be taken in 1 of the last 2 summers on campus)
GEOL 4820 Capstone 3

II. Additional 18 credit hours in Geology courses at 2000-level and above:

III. Allied Math and Sciences (20 credits) **Hrs.**

CHEM 1020 or 1050 General Chem I 4
CHEM 1030 or 1060 General Chem II.....4
MATH 2200 Calculus I.....4
MATH 2205 Calculus II or MATH 2250 Elem Lin Algebra or GEOL 4525 Environmental Data Analysis 3-4
PHYS 1110 or 1210 Gen or Engr Physics 4

Note: This program represents a minimum proficiency. Students are strongly advised to elect additional courses in geology.

Bachelor of Science Curriculum Environmental Geology and Geohydrology (EGGH) Program

The Environmental Geology and Geohydrology degree is designed for those students who intend to become professionals in environmental fields such as consulting, site assessment, hazard assessment, and remediation. The degree will prepare students for graduate school in environmental disciplines and for entry-level jobs.

I. Required Courses **Hrs.**

One of the following:

GEOL 1005 Earth History or.....4
GEOL 1100 Physical Geology or 4
GEOL 1200 Historical Geology or.....4
GEOL 1500 Water, Dirt, Climate 4
GEOL 1600 Global Sustainability 4

And each of the following:

GEOL 2000 Geochemical Cycles, Earth System 4
GEOL 2010 Mineralogy.....3
GEOL 2080 General Field Geology.....3
GEOL 2100 Strat and Sediment.....4
GEOL 4444 Geohydrology.....4
GEOL 4490 Geochemistry 4
GEOL 4777 Geochem of Natural Waters 3
GEOL 4880 Earth Surface Processes 3
GEOL 4820 Capstone 3

II. Required Allied Math and Science Courses

CHEM 1020 General Chem I 4
CHEM 1030 General Chem II 4
PHYS 1110 or 1210 Gen or Engr Physics 4
MATH 2200 Calculus I.....4
MATH 2205 Calculus II 4

One of the following:

LIFE 1010 General Biology or.....4
STAT 2050 Fund of Statistics or 4
MATH 2210 Calculus III or.....4
PHYS 1120 General Physics II or 4
PHYS 1220 Engr Physics II 4

III. Additional 18 credit hours of Electives, in consultation with adviser

GEOL 2005 Intro to Geophysics or
GEOL 3005 Principles of Geophysics 4
GEOL 2020 Intro to Petrology 2
GEOL 2070 Intro to Oceanography 4
GEOL 4610 Structure & Tectonics.....4
GEOL 3400 Geologic Hazards 4
GEOL 3500 Global Change.....4
GEOL 3600 Earth & Mineral Res.....4
GEOL 3650 Energy, Geological Persp 4
GEOL 4001 Modeling in Earth System 4
GEOL 4113 Geological Remote Sensing.....4
GEOL 4525 Environmental Data
Analysis 4
GEOL 4888 Glaciology 3

NOTE: Students are encouraged, in consultation with their adviser, to design a major that best fits their interests and goals. With this in mind, there are many courses outside the Department of Geology and Geophysics that may be substituted for courses in the Electives (B) list above provided that such substitutions are made with the consent of an adviser. A list of such courses may be obtained from the Department. Students who seek the Geology BS may not also seek EGGH as a double major, and vice versa.

Bachelor of Arts in Geology and Earth Science Curriculum

I. Required Courses **Hrs.**

Each of the following:

GEOL 1000-level intro lab course(s).....4-8
GEOL 2000 Geochemical Cycles &
Earth System 4
GEOL 2010 Mineralogy.....3
GEOL 2020 Intro to Petrology 2
GEOL 2100 Stratig/Sedimentation.....4
GEOL 2080 General Field Geology.....3
GEOL 4820 Capstone 3
LIFE 1010 General Biology.....4
CHEM 1020 General Chemistry I 4
PHYS 1110 General Physics I.....4
MATH 1405 Trigonometry 3
or
MATH 1450 Algebra/Trig.....5

II. Six courses from the following:

ATSC 2000 Meteorology.....4
or
GEOG 3450 Weather and Climate 3
ECON 2400 Economics of the
Environment 3
GEOG 3010 Landforms and Soils.....3
GEOL 2005 Intro to Geophysics or
GEOL 3005 Principles of Geophysics 4
GEOL 2050 Principles of Paleontology.....3
GEOL 2070 Intro to Oceanography 4
GEOL 3600 Earth & Mineral Resources 4
GEOL 3650 Energy:Geological Persp. 4
GEOL 3400 Geologic Hazards 4
GEOL 3500 Global Change.....4
GEOL 4444 Geohydrology.....4
GEOL 4490 Geochemistry 3
GEOL 4610 Structural Geol/Tectonics.....4
GEOL 4835 Applied/Exploration
Geophysics.....3
POLS 4051 Environmental Politics
and Admin 3
SOIL 4120 Genesis, Morphology,
Classification of Soils.....4
ECON 4400 Environmental Economics 3
or
ECON 4410 Natural Resource Economics..3

III. Additional 12 hours of electives with adviser consultation, at least 6 hours of which must be taken outside of the Department of Geology and Geophysics.

Undergraduate Minor

A minor in geology requires 20 hours of coursework in the Department of Geology and Geophysics. Students are required to take GEOL 1100, 1200, or 1500; GEOL 2000; GEOL 3400, 3500, or 3600; and 8 additional credits in consultation with their adviser. A grade of C or better is required in each of these courses.

Graduate Study

The department offers instruction and research programs leading to master of science and doctor of philosophy degrees in both geology and geophysics and to the master of science in geology/water resources.

Program Specific Admission Requirements

All applicants must complete an online departmental application form with statement of intent. Forms are available from the Department of Geology and Geophysics Web site at geology.uwyo.edu.

Application deadline is January 15 of each year.

All applicants should have completed undergraduate coursework including mathematics through calculus, one year of chemistry, basic training in geology, and for most areas, one year of calculus-based physics.

Applicants to the geophysics graduate program should have an undergraduate degree in geophysics, geology, mathematics, physics, or engineering.

Applicants to the Ph.D. program, without a M.S. degree, must have attained an exceptional undergraduate record.

Formal approval of application by the departmental admissions committee.

Formal acceptance by an adviser.

Formal notice of admission by the university.

Program Specific Graduate Assistantships

All applicants to the geology and geophysics graduate program are considered for assistantships. Applicants are NOT required to complete the graduate assistant application form.

Program Specific Degree Requirements

Master of Science in Geology

Plan A (thesis) (26 hours of coursework and 4 hours of thesis)

Preliminary and initial advising shall take place upon acceptance to the graduate program to identify background deficiencies and develop a list of required deficiency coursework to be taken. Deficiency coursework must be completed with a grade of B or better early in the student's graduate residence.

GEOL 5020 Fundamentals of Research is required of ALL graduate students during the first semester of residence.

All graduate students in geology must complete two semesters of GEOL 5200. Distinguished Lecture Series in the first two semesters of residence plus Rocky Mountain Field Trip.

All M.S. students in the Department of Geology and Geophysics will be required to complete a qualifying exam by the end of the second term in residence. Specific department examination requirements are available from the department office. Failure of this exam may result in dismissal from the graduate program.

The candidate's committee shall evaluate the thesis and conduct the final examination. The final exam is an oral presentation of the thesis, oral defense of thesis, and oral responses to questions relating to ancillary topics. Failure of this exam can result in dismissal. Retaking of the exam is subject to the discretion of the candidate's graduate committee.

Master of Science in Geophysics

Plan A (thesis) (26 hours of coursework and 4 hours of thesis)

Preliminary and initial advising shall take place upon acceptance to the graduate program to identify background deficiencies and develop a list of required deficiency coursework to be taken. Deficiency coursework must be completed with a grade of B or better early in the student's graduate residence.

GEOL 5020 Fundamentals of Research is required of ALL graduate students during the first semester of residence.

All graduate students in geophysics must complete two semesters of GEOL 5210. Distinguished Lecture Series in the first two semesters of residence plus Rocky Mountain Field Trip.

All M.S. students in the Department of Geology and Geophysics will be required to complete a qualifying exam by the end of the second term in residence. Specific department examination requirements are available from the department office. Failure of this exam may result in dismissal from the graduate program.

The candidate's committee shall evaluate the thesis and conduct the final examination. The final exam is an oral presentation of the thesis, oral defense of thesis, and oral responses to questions relating to ancillary topics. Failure of this exam can result in dismissal. Retaking of the exam is subject to the discretion of the candidate's graduate committee.

M.S. candidates in geophysics must complete 6 hours of mathematics and three hours of physics or engineering courses at the graduate level.

M.S. candidates must take at least 12 hours of 4000- and 5000-level courses in geophysics. Recommended graduate level mathematics courses include differential equations, numerical analysis, and real and complex variables; in physics and engineering they include classical mechanics, continuum mechanics, elasticity, electricity and magnetism. Substitutions for graduate-level geophysics courses may be made with the permission of the candidate's adviser. Remaining graduate-level course requirements may be made up from courses in physics, engineering, mathematics, and geology.

Doctor of Philosophy in Geology (42 hours of coursework and 30 hours of dissertation research)

Preliminary and initial advising will identify background deficiencies and develop a list of required deficiency coursework. Deficiency coursework must be completed with a grade of B or better early in the student's graduate residence.

Completion of GEOL 5020 Fundamentals of Research is required during the first semester of residence.

All graduate students in Geology must complete two semesters of GEOL 5200. Distinguished Lecture Series in the first two semesters of residence plus Rocky Mountain Field Trip.

All Ph.D. students in the Department of Geology and Geophysics will be required to complete a qualifying exam by the end of the second term in residence. Specific department examination requirements are available from the department office. Failure to complete the exam by the end of the second semester in residence without an approved extension will result in suspension of the student's financial support, irrespective of the source of funding. Ph.D. students who fail the exam will be asked to withdraw from the graduate program or to enroll in the M.S. program.

The preliminary examination is administered following completion of 30 hours of 4000-level or higher coursework, not including independent study or research credits. Failure of this exam may, at the discretion of the thesis committee, lead to a re-examination during the following semester in residence, remedial work, or expulsion from the program.

The Ph.D. dissertation and its defense are described in the regulations section of this *Catalog*. Specific department examination requirements are available from the department office. The candidate's committee is responsible for monitoring progress of the research, refereeing the written work, and administering the final examination.

Doctor of Philosophy in Geophysics (42 hours of coursework and 30 hours of dissertation research)

Preliminary and initial advising will identify background deficiencies and develop a list of required deficiency coursework. Deficiency coursework must be completed with a grade of B or better early in the student's graduate residence.

All graduate students in geophysics must complte two semesters of GEOL 5210. Distinguished Lecture Series in the first two semesters of residence plus Rocky Mountain Field Trip.

Completion of GEOL 5020 Fundamentals of Research is required during the first semester of residence.

Ph.D. candidates in geophysics must complete at least 6 additional hours of graduate-level coursework: 3 in mathematics and 3 in physics or engineering. Recommended graduate-level mathematics courses include differential equations, numerical analysis, and real and complex variables; in physics and engineering, they include classical mechanics, continuum mechanics, elasticity, electricity and magnetism. Ph.D. candidates are required to take at least 12 hours of 5000-level geophysics courses exclusive of GEOL 5854. Substitutions for graduate-level geophysics courses may be made with the permission of the candidate's adviser. Remaining graduate-level course requirements may be made up from courses in physics, engineering, mathematics, and geology.

All Ph.D. students in the Department of Geology and Geophysics will be required to complete a qualifying exam by the end of the second term in residence. Specific department examination requirements are available from the department office. Failure to complete the exam by the end of the second semester in residence without an approved extension will result in suspension of the student's financial support, irrespective of the source of funding. Ph.D. students who fail the exam will be asked to withdraw from the graduate program or to enroll in the M.S. program.

The preliminary examination is administered following completion of 30 hours of 4000-level or higher coursework, not including independent study or research credits. Failure of this exam may, at the discretion of the thesis committee, lead to a re-examination during the following semester in residence, remedial work, or expulsion from the program.

The Ph.D. dissertation and its defense are described in the regulations section of this *Catalog*. Specific department examination requirements are available from the department office. The candidate's committee is responsible for monitoring progress of the research, refereeing the written work, and administering the final examination.

Master of Science in Geology/Water Resources and Master of Science in Geophysics/Water Resources

Please refer to the Water Resources section of the *Catalog* for degree requirements.

Geology and Geophysics (GEOL)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1001. Earth Science and Society. 1. [I,L◀▶(none)] Introduces students to the study of Earth Science and its role in society through examination and discussion of current events, and through projects researching geologic topics of societal interest. *Prerequisite:* GEOL 1100 or concurrent enrollment.

1005. Earth History. 4. [S◀▶(none)] Reviews the evolution of the Earth including: the creation of the Universe, formation of a layered earth, development and history of continents, controls on climate change, and the origin and evolution of life. Class introduces basic geologic, chemical, physical and biologic concepts used to decipher Earth history.

1070. The Earth: Its Physical Environment. 4. [SE◀▶(none)] Discusses selected topics from geology, astronomy and meteorology illustrating fundamental concepts, processes, products and the interrelationships among them. Emphasizes nature of science and relationship between selected topics and society. Cross listed with ASTR 1070. *Prerequisites:* Math level 3 or equivalent courses, consent of instructor, elementary education major and EDCI 1450 must be taken concurrently.

1100. Physical Geology. 4. [SE◀▶PN] Studies modern concepts of the Earth's physical makeup including minerals and rocks, topography, crustal structure, plate tectonics and processes and forces acting on and within the earth.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1110. Physical Geology for Engineers. 4. [(none)◀▶PN] Introcution to geologic principles for engineers with emphasis on near-surface processes and material properties. The first half will teach planetary basics, mineral/rock and geologic structure, surface processes, geologic material strength and deformation, and geohazards. The final half covers methods and analysis with the collection of geophysical data on-campus to assess near-surface properties with a full lab report. *Prerequisites:* MATH 1400 and MATH 1405 or MPE score of 5 or higher or SAT Math score of 600 or higher or ACT Math score of 27 or higher.

1500. Water, Dirt, and Earth's Environment. 4. [SE◀▶PN]. Introductory environmental geology course focusing on water and soil both as hazards and as life-sustaining resources. Explores surface processes and climate change over geological and human timescales. Case studies illustrate the environmental tradeoffs of resource use. Cross listed with ENR 1500.

1600. Global Sustainability: Managing Earth's Resources. 4. [G,S◀▶(none)]. Uses biology, chemistry, physics and Earth science to examine Global Sustainability and how this worldview might guide our future management of Earth resources. Case studies in different international settings place questions of resource exploitation (discovery, extraction, processing, use and disposal) and sustainability in a larger global context.

2000. Geochemical Cycles and the Earth System. 4. [SE◀▶(none)]. Introduces the Earth system, including the solid Earth, hydrosphere, biosphere and atmosphere. Emphasizes the evolution of the Earth, rock associations and geochemical cycles. Cross listed with ESS 2000. *Prerequisites:* a 1000-level GEOL course with a lab and concurrent enrollment in CHEM 1020. (Normally offered fall semester)

2005. Introduction to Geophysics. 4. Mechanisms and driving forces of Earth deformation, at length-scales from the tectonic to the microstructural. Introduces solid bodies, including stress and strain, rheologies and cracking, with applications to plate tectonics, deformation of rocks and surficial processes. Fluid and heat flow is introduced, with applications to tectonic and hydrologic problems. *Prerequisites:* 1000-level GEOL course with lab, MATH 1450 or higher. (Normally offered spring semester)

2010. Mineralogy. 3. Introduction to rock-forming minerals. Includes introduction to crystallography, crystal chemistry, and the occurrence and identification of the common minerals, with emphasis on silicates. Field trip required. *Prerequisites:* GEOL 1005, 1100, or 1500; CHEM 1020 or concurrent enrollment.

2020. Introduction to Petrology. 2. Introduces the study of igneous, sedimentary, and metamorphic rocks in hand specimen. Covers textural and mineralogic classification of rocks and the tectonic environments in which they occur. Field trip required. *Prerequisite:* GEOL 2010.

2050. Principles of Paleontology. 3. Examines scientific principles, biological and geological, that underlie general study of ancient life on Earth. Includes interactions of evolutionary, stratigraphic, taphonomic and paleogeographic concepts within various approaches to paleobiology and systematic paleontology. Optional field trip. *Prerequisite:* GEOL 1100 or LIFE 1000 or 1010. (Normally offered spring semester)

2070. Introduction to Oceanography. 4. Survey of ocean processes, including the major subdisciplines of physical, geological, chemical, and biological oceanography. Studies the form of the world ocean; composition and chemistry of seawater; circulation, currents, waves and tides; nutrients and organisms; estuaries and coastal processes; origin and distribution of deep-sea sediments; and impacts of human activities. Prerequisites: GEOL 1005, 1100, 1200, 1500 or ENR 1500; MATH 1405 or 1450.

2080. General Field Geology. 3. [SE◀▶(none)] Covers basic concepts of geology and field techniques emphasizing interpretation of geologic features in the field. Weekly field trip required. *Prerequisite:* GEOL 1100, 1200, 1005 or 1500. (Normally offered the first half of the fall semester)

2100. Stratigraphy and Sedimentation. 4. Introduces principles of stratigraphy, materials and processes of sedimentation. Laboratory includes study and interpretation of sedimentary rocks, sedimentary structures and stratigraphic techniques. Field trip required. *Prerequisite:* GEOL 2010. (Normally offered fall semester)

2150. Geomorphology. 4. Discusses general principles of landform description and analysis. *Prerequisite:* GEOL 1100 or equivalent.

2220. Communicating Earth Science. 3. This course will focus on communicating science to non-scientists. Students will deliver earth science information through written, digital and oral presentations to be informative and interesting to the public. *Prerequisites:* grade of C or higher in GEOL 2010, COM1.

3040. Introduction to Groundwater. 3. This class will introduce the basic principles of Groundwater Hydrology such as hydrological cycle, mass balance, fluid properties, mechanics of flow through porous media, Darcy's law, aquifer and aquitards, groundwater wells, groundwater geology, and surface water/groundwater interaction. *Prerequisites:* A grade of B or higher in MATH 1405 or MATH 1450.

3110. Invertebrate Paleontology. 4. Encompasses taxonomy and morphology of major groups of invertebrate fossils. Includes examples of their use in correlation, environmental reconstruction and interpretation of evolution. *Prerequisite:* GEOL 1200. (Normally offered spring semester)

3250. Geosciences and Computers. 4. [I◀▶(none)] An integrated introduction to the basic components of modern scientific

computing and to illustrate basic computing concepts through geoscience applications. *Prerequisite:* One USP designated science course with lab.

3400. Geologic Hazards: A Historical and Scientific Review. 4. [SE◀▶(none)] Geologic hazards include well-known catastrophic events such as earthquakes, volcanic eruptions and landslides, as well as lesser known processes such as soil expansion, land subsidence and ground failure. Economically, the latter processes have a much greater impact each year than the more notorious geologic events. Reviews geologic hazards from a historical and scientific perspective. Describes relevant geologic processes, how geologic evidence is used to identify regions at risk, monitoring procedures and the role of the scientist in predicting catastrophic geologic events. Prehistoric and historic events are used to illustrate temporal and spatial scales of geologic hazards. *Prerequisite:* junior standing.

3500. Global Change: A Geological Perspective. 4. Considers the geochemical and geophysical systems that control the Earth's climate, the geological and historical record of climate change, and then discusses the possible effect that human activities will have upon these chemical and geophysical systems. *Prerequisites:* junior standing and an introductory class in the physical sciences.

3600. Earth and Mineral Resources. 4. [SE,G◀▶PN] Explores the geologic formation, production, and use of Earth and mineral resources, including building materials, chemical minerals, industrial minerals and metals. For each resource, the geologic environment and processes of formation are discussed. Exploration and mining techniques for each resources are also reviewed and associated environmental problems and regulations examined. Beneficial and detrimental aspects of the use of each resource are also discussed. *Prerequisite:* completion of USP QA and L.

3650. Energy for Society: Addressing the Energy Grand Challenge. 4. [SE,G◀▶PN] Examines the energy needs of a modern industrialized society. Looks at the types of energy, the natural laws that govern its use, transformation, and conservation. The different sources of energy available to modern societies are examined. Examination includes fossil fuels, nuclear power as well as alternative energy sources. The formation of the resource is discussed, how it is extracted, and any environmental consequences associated with its extraction and use. *Prerequisite:* completion of USP QA and L.

4000. Paleomagnetism in Geology/Geophysics. 3. Studies paleomagnetic solutions in geoscience topics. Includes plate reconstructions; sea-floor formation; structural geology; dating of structural/tectonic events; western North American tectonics; global geomagnetic polarity reversals and time scale; magnetostratigraphic correlation; stratigraphic dating; dating diagenetic events; characteristics of core and mantle; extraterrestrial impacts and geologic phenomena; environmental and climate change applications. Field trip and laboratory project required. Dual listed with GEOL 5000. *Prerequisite:* GEOL 1000 or 1100; GEOL 1200 desirable.

4001. Modeling the Earth System. 4. Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with BOT/ATSC/ESS 4001. *Prerequisites:* MATH 2205 or equivalent and [ESS 2000 or GEOL 2000].

4025. Igneous and Metamorphic Petrology. 4. An advanced study of igneous and metamorphic rocks in hand sample and thin section. Covers optical techniques for identifying minerals, the use of phase diagrams and geochemistry to understand the evolution of igneous rocks and the formation conditions of metamorphic rocks. A field trip is required. *Prerequisite:* GEOL 2020.

4030. Groundwater Flow and Solute Transport Modeling. 3. Movement of groundwater and the dissolved solute is responsible for a variety of environmental, engineering, and geological processes of interest. Presents an overview of the analyses of groundwater flow and solute transport using numerical modeling. The principles of the Finite Difference Method are introduced. Dual listed with GEOL 5030. *Prerequisites:* MATH 2205, GEOL 5444.

4050. Geology of Wyoming. 3. Survey of the geologic history of Wyoming beginning in the Precambrian and extending to the present. Stratigraphic and sedimentation history, igneous activity, metamorphism, and orogenic activity are emphasized in the lectures. Occasional field trips are required. *Prerequisite:* GEOL 1100 or an equivalent course. (Normally offered fall semester)

4060. Rocky Mountain Field Trip. 1 (Max. 3). A six-day geological field trip to various classic localities in the Rocky Mountains. *Prerequisites:* senior standing and GEOL 2010 and GEOL 4610 or 4050.

4113. Geological Remote Sensing. 4. Acquaints students with aircraft and spacecraft remote sensing of the environment, emphasizing geologic application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. Laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, stratigraphy, environmental geology and geologic hazards. Dual listed with GEOL 5113; cross listed with GEOG 4113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 or MATH 1450.

4125. Igneous Petrology. 2. Studies igneous rocks in thin section. Lectures cover mineralogy, geochemistry, phase equilibria and occurrence of igneous rocks. Labs study suites of igneous rocks in thin section. *Prerequisite:* GEOL 2010. (Offered fall semester of odd-numbered years)

4130. Metamorphic Petrology. 2. Studies metamorphic rocks in thin section. Lectures cover mineralogy, phase equilibria and occurrence of metamorphic rocks. Labs study suites of metamorphic rocks in thin section. *Prerequisite:* GEOL 2010. (Offered spring semester of odd-numbered years)

4150. Paleontology of Lower Vertebrates. 4. Explores evolutionary histories of lower vertebrates including fishes, amphibians, reptiles and birds. Optional field trip. *Prerequisites:* acceptable previous training in geology or zoology, 12 hours of biology and/or geology or ZOO 4000. (Normally offered every third year)

4170. Paleontology of Cenozoic Placental Mammals. 4. Explores evolutionary histories of placental mammals characteristic of Cenozoic era as documented through fossil record study. Optional field trip. *Prerequisite:* 12 hours of biology and/or geology or ZOO 4000. (Normally offered every third year)

4190. Petroleum Geology. 3. Principles governing the exploration for hydrocarbons; characteristics of reservoirs and traps; origin, migration and accumulation of hydrocarbons; subsurface evaluation techniques. Dual listed with GEOL 5190. *Prerequisite:* GEOL 2005 or PETE 3000.

4191. Methods in Petroleum Geology. 3. Lectures and laboratory exercises are designed to give the student experience in working with various kinds of geoscientific data in relation to the exploration for and production of hydrocarbons. Most exercises utilize real data and real situations. Topics include recognition of hydrocarbons, interpretation of sample, mud and geophysical logs, geologic utilization of drill stem tests; subsurface correlation and

mapping techniques; prospect generation. Dual listed with GEOL 5191. *Prerequisite:* GEOL 4190.

4200 [4010]. Topics in Geology. 1-3 (Max. 9). Studies particular geology topics in-depth at undergraduate level. *Prerequisites:* senior standing and 20 hours in geology.

4210 [4020]. Topics in Geophysics. 1-3 (Max. 9). Studies particular geophysics topics in-depth at undergraduate level. *Prerequisites:* senior standing and 20 hours in geology.

4270. Hydrogeophysics. 3. Estimating groundwater parameters, contaminant transport, porosity and other hydrologic properties using geophysics. Integrates literature review, discussion, exercises and writing to introduce students to hydrogeophysics research. Students will acquire skills at reading technical publications, writing, and grain knowledge about current trends in the field. Emphasis on critical thinking and analysis of writing. *Prerequisites:* 20 hours of geology or engineering courses.

4280. Paleobotany. 4. An examination of the ecology and evloution of land plants throughout Earth history that emphasizes the profound impact plants have had on Earth's surface and atmosphere. Through a combination of lecture, discussion, and laboratory, the course will explore fossilized plant communities, their ecological properties, and effects of major environmental upheavals. Dual listed with GEOL 5280. Cross listed with BOT 4280. *Prerequisite:* LIFE 1010 or GEOL 1100.

4310. Advanced Stratigraphy. 3. Deals with characterizing and predicting the vertical and lateral distribution of sedimentary rocks. Includes correlation methods; use of facies models; facies delineation; impact of tectonics and changes in relative sea level on sedimentary record; transgressions and regressions; concept and construction of stratigraphic framework; and sequence stratigraphy. *Prerequisite:* GEOL 2100. (Normally offered spring semester)

4320. Cenozoic Stratigraphy. 4. Studies areal distribution, lithogenesis, depositional environment, correlation and faunas of North America's Cenozoic deposits. Optional field trip. *Prerequisite:* GEOL 2100. (Offered based on sufficient demand and resources)

4420. Sedimentary Rocks. 4. Encompasses origin, classification and interpretation of sedimentary rocks including sandstones, mudrocks and carbonates. Topics also include diagenesis and basin analysis. Field trip required. *Prerequisites:* GEOL 2010 and GEOL 2100. (Offered every other even-numbered year)

4440. High-Performance Computing for Scientists and Engineers. 3. Gives students an integrated introduction to the design, analysis and implementation of parallel codes on modern HPC systems. This course is interdisciplinary in nature, involving case studies in biology, physics, mathematics and geoscinces. HPC systems at ARCC will be used for hands-on exercises. Offered satisfactory/unsatisfactory only.

4444. Geohydrology. 4. Discusses principles governing occurrence, movement and extraction of water in subsurface geologic environment. One required weekend field trip in September. Dual listed with GEOL 5444. *Prerequisite:* MATH 2205. (Normally offered spring semester)

4460. Planetary Geology. 3. Examines basic principles of planetary geology and their application to specific planetary examples. Core topics include solar system formation, impact cratering, and comparative planetology. Provides an opportunity to test terrestrial theories under extreme conditions, and provides insight into both early earth history and ongoing geological processes. *Prerequisites:* GEOL 2010 and GEOL 2100 and (Math 1400/1405 or 1450).

4470. Introduction to Geomodeling. 3. Introductory course in numerical modeling in the geosciences, offering coding experience as well as insight into the generalities of modeling. We develop, in class, simple geo-models, which allow experience constructing and testing computer models. As a minimum we will develop one extensive Finite Difference model and one minimalistic Finite Element model; other techniques will depend on student interests. *Prerequisites:* at least one semester of college level calculus and one semester of college level physics.

4490. Geochemistry. 4. Discusses chemical evolution of the Earth and details of chemical thermodynamics, phase rule chemistry, equilibrium reactions and reaction kinetics as applied to geology. *Prerequisites:* GEOL 2010, CHEM 1020, MATH 2200, 2205. (Normally offered spring semester)

4525. Environmental Data Analysis. 4. Explores fundamentals of environmental data analysis including the display and description of data, uncertainty propagation, statistical significance and power, t-tests, ANOVA, time series, serial correlation, multiple regression, and sample collection strategies. Students must enroll in a computer-based lab session and complete a term project involving real-world problems in data analysis. Dual listed with GEOL 5525. Cross listed with ENR 4525/5525. *Prerequisites*: A grade of C or better in STAT 2050 or STAT 2070 or MATH 2200, junior standing or higher, and completion of at least one upper-division course in the natural sciences or a related field.

4610. Structural Geology and Tectonics. 4. Encompasses lectures, readings and problems dealing with character and causes of structures that deform Earth's crust. Field trips required. *Prerequisite:* GEOL 2010. (Normally offered fall semester)

4666. Plate Tectonics. 3. Studies theory of plate tectonics including quantitative assessment of observations which lead to its acceptance. Includes geometry of plate tectonics, plate boundaries and plate motions at present and in the past, evolution of plates including sea floor spreading and subduction processes, as well as driving mechanisms. Two lectures, one laboratory/discussion per week. Dual listed with GEOL 5666. *Prerequisites:* GEOL 4610, geology/geophysics math requirements. (Offered based on sufficient demand and resources)

4717 [5100]. Field Course in Geology. 2-6 (Max. 6). Reviews field observation of geologic phenomena, methods of geologic mapping and interpretation of data collected. Course includes a six-week field trip. *Prerequisites:* GEOL 2100, 4610. (Offered early summer)

4720 [4700]. Ore Deposits. 4. Teaches principles of economic geology of ore minerals. Lectures cover geochemistry of ore minerals and environments in which various ore minerals are found. Labs include identification of ore minerals in hand sample and under microscope and methodology of economic geology. Dual listed with 5720. *Prerequisite:* GEOL 2020. (Normally offered fall semester)

4760. Rates and Timescales of Surface Processes. 3. Explores methods for quantifying rates and timescales of weathering, erosion, soil formation, nutrient cycling and other surface processes. Focus includes cosmogenic nuclides, tracer thermochronometry, U-series disequilibrium, fallout radionuclides, and optically stimulated luminescence. Course features a mix of instructor-driven lectures on fundamentals and student-driven discussion of cutting-edge research from recent literature. Dual listed with GEOL 5760. *Prerequisites*: GEOL2150 or GEOG 3010 or GEOL 4880 and MATH 2205 and CHEM 1020 and PHYS 1100.

4777. Geochemistry of Natural Waters. 3. Studies physical chemistry applied to natural waters, and chemistry of rock weathering, sources and controls on major, minor and trace elements, plus problems related to introduced pollutants. Dual listed with GEOL 5777. *Prerequisites:* GEOL 2010, MATH 2205, and CHEM 1030.

4800. Independent Study. 1-3 (Max. 6). Encompasses field, laboratory or library research for senior students in department. *Prerequisites:* senior standing and not fewer than 20 hours in geology. (Offered fall, spring and summer)

4820. Capstone. 3. [WC◀▶COM3] Critical examination of landmark papers and their influence on the Earth sciences. Through readings, lectures, discussions and in oral and written presentations, the student will gain a broad perspective over the impact of key issues in the field. *Prerequisites:* junior standing and 26 hours in the department. (Normally offered spring semester)

4835 [4970]. Applied/Exploration Geophysics. 3. Discusses the fundamentals of Applied or Exploration Geophysics, encompassing lecture, laboratory classes and discussion of case histories. It covers the Seismic Refraction, Seismic Reflection, Gravity, and Magnetics methods. Provides a solid grounding about the exploration of the Earth's subsurface for mineral and hydrocarbon resources, and environmental issues. Dual listed with GEOL 5835. *Prerequisites:* GEOL 1100, one year of physics and MATH 2210. (Normally offered spring semester)

4850. Principles of Digital Filtering and Time Series Analysis. 3. Studies principles and applications of data processing techniques as used in seismic exploration, oceanography, gravity and magnetic prospecting, remote sensing and other areas of earth science. Includes discrete versus continuous time series; fourier and Z-transforms; layer matrix analysis; reflectivity function; deconvolution and predictive deconvolution; digital filter design; array analysis; velocity filters; and migration. *Prerequisite:* mathematics through calculus. (Normally offered fall semester)

4880. Earth Surface Processes. 3. Quantitative interpretation of Earth's surface processes. Uses a quantitative approach to demonstrate how the development of landforms can be modeled. *Prerequisites:* MATH 2205 (2210 preferred), PHYS 1210.

4888. Glaciology. 3. Dynamics of frozen water. Covers behavior of ice masses, in the form of glaciers or ice-sheets, and geomorphic aspects of glacial erosion and deposition. Includes forcing and feedbacks between cryosphere and global climate. *Prerequisite:* MATH 2205, PHYS 1210 (1310). (Offered every second year spring semester)

5020. Fundamentals of Research. 2. Lectures, discussion and projects centered on three fundamental aspects of research: development of research tools, understanding the scientific method, learning how to write a grant, read the literature and present a talk. Class is designed for all incoming graduate students in the department. *Prerequisite:* graduate standing.

5030. Groundwater Flow and Solute Transport Modeling. 3. Movement of groundwater and the dissolved solute is responsible for a variety of environmental, engineering, and geological processes of interest. Presents an overview of the analyses of groundwater flow and solute transport using numerical modeling. The principles of the Finite Difference Method are introduced. Dual listed with GEOL 4030. *Prerequisites:* MATH 2205, GEOL 5444.

5050. Introduction to Isotope Geology. 3. Understanding of atomic structure, radioactive decay, mass spectrometry, dating techniques and petrologic uses of isotropic systems. Emphasis will be placed on evaluating dating methods in relation to particular geologic problems and possible sources of error. The use of isotopes in defining magmatic sources and crustal contamination are discussed. *Prerequisites:* CHEM 1020, CHEM 1110, MATH 2200, MATH 2205.

5113. Geological Remote Sensing. 4. Acquaint students with aircraft and spacecraft remote sensing of the environment, emphasizing geological application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. The laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, statigraphy, environmental geology and geologic hazards. Dual listed with GEOL 4113 and cross listed with GEOG 4113/5113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 OR MATH 1450.

5120. Tectonic Evolution of the North American Cordillera. 4. Phanerozoic tectonic evolution of western North America viewed through the paradigm of plate tectonics. Course involves intensive literature review, guest speakers, a possible field trip, and an in-depth regional tectonic analysis to be done by each student. *Prerequisite:* GEOL 2020, GEOL 2100, and GEOL 4610.

5140. Advanced Igneous Petrology. 4. Review of the classification of igneous rocks, physical characteristics of magmas and processes of magmatic differentiation. Using this knowledge, the course examines the major type of global magmatism. Topics considered include mid-ocean ridges, subduction zones, layered complexes and continental volcanism. *Prerequisite:* GEOL 2020.

5150. Metamorphic Petrology. 4. Lectures on field occurrence, macroscopic and microscopic characteristics of igneous rocks, followed by lectures on application of physical chemistry to genetic study of igneous rocks. Laboratory devoted to the study of suites of igneous rocks from classical areas. *Prerequisite:* GEOL 2020 and 4490; graduate standing.

5160. Regional Tectonics. 4. The study of orogenic belts worldwide including both external and internal zones. Cross-section preparation is emphasized as well as geometric analysis. Includes lectures, readings, and a cross-section project. *Prerequisite:* GEOL 4610.

5180. Reflection Seismology. 3. Lectures treating seismic methods applied to the study of earth structures ranging from exploration to crustal structure. Topics covered include wave propagation recording techniques, processing, modeling, resolution and interpretation. Laboratory exercises give practical experience on lecture topics and emphasize use of instruments and data analysis. Computer processing introduced. *Prerequisite:* GEOL 1200, one year of calculus and one year of physics.

5190. Petroleum Geology. 3. Principles governing the exploration for hydrocarbons; characteristics of reservoirs and traps; origin, migration and accumulation of hydrocarbons; subsurface evaluation techniques. Dual listed with GEOL 4190. *Prerequisites:* GEOL 2100, 4610.

5191. Methods in Petroleum Geology. 3. Lectures and laboratory exercises are designed to give the student experience in working with various kinds of geoscientific data in relation to the exploration for and production of hydrocarbons. Most exercises utilize real data and real situations. Topics include recognition of hydrocarbons, interpretation of sample, mud and geophysical logs, geologic utilization of drill stem tests; subsurface correlation and mapping techniques; prospect generation. *Prerequisite:* GEOL 5190.

5200. Topics in Geology. 1-3 (Max. 9). Provides a detailed study at a graduate level of a particular topic in geology. *Prerequisite:* graduate standing in geology and geophysics and permission of the instructor.

5210. Topics in Geophysics. 1-3 (Max. 9). Provides a detailed study at a graduate level of a particular topic in geophysics. *Prerequisite:* graduate standing in geology and geophysics and permission of instructor.

5211. Seminar in Structural Geology and Tectonics. 1 (Max. 6). Selected topics in structural geology and tectonics. On-going research among undergraduate and graduate students is emphasized. Prerequisite: GEOL 4610 or equivalent course.

5212. Sedimentary Seminar. 1 (Max. 3). Seminar in selected topics in sedimentary geology. Designed to bring, and keep, graduate students up to date with the current literature

and new, unpublished ideas. Visiting lecturers and presentations of student and faculty research. *Prerequisite:* graduate standing.

5215. Inverse Theory. 3. Inverse theory is about learning the techniques to invert data for an acceptable model. The simplest example is least-squares fitting of a line. Covers inversion of both over and under-determined inverse problems, regularization techniques, bayesian theroy, along with probabilistic viewpoints. Prerequisites: graduate standing in geology and geophysics; linear algebra, MATLAB programming.

5216. Global Seismology. 3. Introductory class in theoretical seismology with emphasis on wave propagation. Topics include elastic wave theory for body and surface waves, normal modes, anisotropic wave propagation, source processes, derivation of the wave equation, the ray theoretical approximation, representation theorems, stress/strain constitutive relations, normal modes, surface waves, and attenuation operators. *Prerequisites:* graduate standing in geology or geophysics and permission of the instructor.

5217. Geodynamics. 3. Examines the fundamental physical processes necessary for the understanding of plate tectonics and a variety of other geological phenomena. Provides a solid grounding for future study and research covering plate tectonics, stress & strain, elasticity, isostasy & the flexural strength of the lithosphere, gravity, and thermal processes. *Prerequisites:* GEOL 1100, one year of college-level Physics and MATH 2210.

5220. Vertebrate Morphology and Evolution. 2. Course for paleontology majors and vertebrate anatomists involving advanced concepts, recent literature, and research training in the areas of morphology and evolution of fossil vertebrates. Cross listed with ZOO 5220. Prerequisite: GEOL/ZOO 4150 or GEOL/ZOO 4160, or GEOL/ZOO 4170 or ZOO 4000.

5230. Vertebrate Paleobiogeography. 2. Lectures and discussions devoted to use of data from the fossil record of vertebrates in interpreting ancient distributions of landmasses and seaways, recognizing paleoclimatic changes, and documenting the evolution of zoogeographic provinces. *Prerequisite:* GEOL/ZOO 4150, or GEOL/ZOO 4160 or GEOL/ZOO 4170.

5240. Vertebrate Biostratigraphy. 2. Lectures, discussion, and exercises devoted to use of the fossil record of vertebrates (with emphasis on mammalian assemblages) in recognizing contemporaneous physical and/or biological events within and between geographic areas. Field trip. *Prerequisite:* GEOL/ZOO 4150 or GEOL/ZOO 4160 or GEOL/ZOO 4170.

5270. Hydrogeophysics. 3. Estimating groundwater parameters, contaminant transport, porosity and other hydrologic properties using geophysics. Integrates literature review, discussion, exercises and writing to introduce students to hydrogeophysics research. Students will acquire skills at reading technical publications, writing, and grain knowledge about current trends in the field. Emphasis on critical thinking and analysis of writing. *Prerequisites:* 20 hours of geology or engineering courses.

5280. Paleobotany. 4. An examination of the ecology and evloution of land plants throughout Earth history that emphasizes the profound impact plants have had on Earth's surface and atmosphere. Through a combination of lecture, discussion, and laboratory, the course will explore fossilized plant communities, their ecological properties, and effects of major environmental upheavals. Dual listed with GEOL 4280. Cross listed with BOT 5280. *Prerequisite:* LIFE 1010 or GEOL 1100.

5300. Sedimentary Basins. 4. Sedimentary basin evolution are examined from the view point of plate tectonics, thermal histories, and lithospheric processes. Quantitative basin modeling techniques are applied to understanding subsidence histories, sea level changes, and the primary controls on the formation of stratigraphic sequences. *Prerequisite:* 1 year of calculus.

5330. Mechanics of Sediment Transport, Erosion and Deposition. 4. Erosion, transport, and deposition of sediments are examined from a first-principles basis. Physical processes are derived from fluid dynamics, statistical mechanics, and mass conservation. These topics are then used to explore landscape and seascape evolution, morphodynamics, and stratigraphic construction. *Prerequisites:* GEOL 2100 or equivalent.

5340. Advanced Tectonics and Sedimentation. 3. Lectures, seminars, and field observations on the relations between tectonism and the sedimentary record. Topics include a review of plate tectonic theory, characteristics of major types of sedimentary basins, techniques for evaluating tectonic activity from evidence in the sedimentary record and large-scale tectonosedimentary elements. *Prerequisites:* graduate standing, GEOL 2100, and GEOL 4610.

5410. Geochemical Analytical Methods. 4. Lectures and laboratories in analytical methods used in geochemical studies. Particular emphasis given to sampling and sample preparation, inductively coupled argon plasma emission, atomic absorption analysis. Other analytical methods are also treated. *Prerequisite:* GEOL 4490.

5420. Surfaces and Interfaces. 3. Examines the role of surfaces and solid-solution interfaces in regulating the chemistry of the Earth's surface. Subjects to be covered includes surface tension, capillarity, and the thermodynamics of surfaces; the equilibrium and kinetic chemistry of absorption-desorption; dissolution-precipitation kinetics and controlling factors; surface catalysis; and surface oxidation-reduction reactions. Presented in the context of geochemically and environmentally important processes such as chemical weathering, partitioning of solutes between water and surfaces, and the transport and degradation of pollutants. *Prerequisite:* One of the following: GEOL 4490, 4777, 5777, CHEM 3020, CHEM 4507.

5430. Applied Geostatistics. 3. Designed to provide general geostatistical analyses and their applications for spatial random variables and functions. Topics covered include variogram, cross validation, kirging, cokirging, sampling strategies, and both non-conditional and conditional simulations. Several geostatistics packages are used to analyze real field data and students are encouraged to use their own data for practicing geostatistical applications. Examples are taken from geohydrology, soil science, crop science, mining, and various environmental studies. *Prerequisite:* STAT 4010.

5444. Geohydrology. 3. Discusses principles governing occurrence, movement and extraction of water in subsurface geologic environment. Once required weekend field trip in September. Dual listed with GEOL 4444. *Prerequisite:* MATH 2205.

5446. Introduction to Geostatistics. 3. The development of the basic principles of geostatistics and its practical applications in the geosciences will be presented. Main topics include: sptaial analysis, kriging, cokriging, geostatistical simulations (unconditional, conditional). If time permits additional topics include: simple kriging, indicator kriging and block kriging. *Prerequisites:* MATH 2200, 2205, 2250 and STAT 2000.

5450. Geochemical Modeling. 3. Modeling of geochemical processes in fluid-rock systems of the Earth's crust. Emphasizes development and application of conceptual models as well as quantitative numerical models. Reinforces and expands fundamental skills in aqueous and fluid-rock geochemistry to better understand geochemical processes and solve problems in fluid-rock systems. *Prerequisite:* GEOL 4777/5777 or GEOL 5610 or GEOL 4490.

5470. [5460]. Introduction to Geomodeling. 3. Introductory course in numerical modeling in the geosciences, offering coding experience as well as insight into the generalities of modeling. We develop, in class, simple geo-models,

which allow experience constructing and testing computer models. As a minimum we will develop one extensive Finite Difference model and one minimalistic Finite Element model; other techniques will depend on student interests. *Prerequisites:* at least one semester of college level calculus and one semester of college level physics.

5525. Environmental Data Analysis. 4. Explores fundamentals of environmental data analysis including the display and description of data, uncertainty propagation, statistical significance and power, t-tests, ANOVA, time series, serial correlation, multiple regression, and sample collection strategies. Students must enroll in a computer-based lab session and complete a term project involving real-world problems in data analysis. Dual listed with GEOL 4525. Cross listed with ENR 4525/5525.

5550. Numerical Methods in Ground Water Geology I. 3. Numerical solution of ground water flow equations with emphasis on steady state and elementary time dependent finite difference techniques. *Prerequisites:* GEOL 4444 or 5444, competence in FORTRAN programming.

5560. Numerical Methods in Ground Water Geology II. 3. Time dependent digital simulation models designed to forecast impacts of ground water developments. *Prerequisite:* GEOL 5550.

5570. Advanced Geohydrology. 3. Aquifer performance and testing, ground water basin development and management, conjunctive use of ground and surface water, and regional water resource investigations. *Prerequisite:* GEOL 4444 or 5444.

5600. Theoretical Petrology. 3. Graphic and analytical techniques used to evaluate the genesis of igneous and metamorphic rocks. Principles of thermodynamics, activity-composition relations, and G-X diagrams will be reviewed. Igneous topics include: use of phase diagrams, heat and mass transfer, magma generation. Fluid rock equilibra and Schreinemakers' analysis will be used to evaluate the origin of metamorphic rocks. *Prerequisites:* GEOL 4490.

5610. Geological Thermodynamics I. 4. Laws of thermodynamics, conditions which constitute chemical equilibrium, and multiple component systems as applied in geologic problems. *Prerequisites:* MATH 2200, MATH 2205, CHEM 1030, consent of instructor.

5630. Electronic Microprobe. 3. Lectures cover the theory of X-ray emission analysis, microprobe instrumentation, and data reduction procedures. Labs cover various uses of mocroprobe in solving geological problems. *Prerequisites:* consent of instructor.

5640. Advanced Igneous Petrology Seminar. 1-3 (Max. 9). Advanced training in igneous petrology emphasizing applications of chemical principles to the study of ingneous rocks. Each year a different aspect of igneous petrology are covered in detail. *Prerequisites:* GEOL 4490, 5050.

5650. Advanced Metamorphic Petrology. 3. Review of the literature and study of the advanced concepts in metamorphic petrology. *Prerequisite:* GEOL 5150.

5660. Microstructural Analysis of Deformed Rocks. 4. The use of microscope in the interpretation of natural strain in rocks is emphasized. Lectures and extensive laboratory exercises are the principle components of the course. Microfabric analysis using the universal stage is introduced. *Prerequisites:* GEOL 4610 required, GEOL 5150 recommended.

5666. Plate Tectonics. 3. The theory of plate tectonics including a quantitative assessment of the observations which lead to its acceptance and limitations. Topics include: geometry of plate tectonics, plate boundaries and plate motions at present and in the past, evolution of plates including sea floor spreading and subduction processes, and driving mechanisms. Two lectures, one laboratory/discussion per week. Dual listed with GEOL 4666. *Prerequisites:* GEOL 4610, geology/geophysics math requirements.

5700. Seminar in Structure and Development of the Earth's Crust. 3. Seminar in structure and development of the Earth's crust. Topics include structure and geochemistry of the Precambrian plate tectonics in the Precambrian early history of the Earth, seismic refraction crustal models, seismic reflection crustal models, and crustal genesis. *Prerequisites:* admission is by consent of instructor, GEOL 4610 and one semester of geophysics.

5720. Ore Deposits. 4. Teaches principles of economic geology of ore minerals. Lectures cover geochemistry of ore minerals and environments in which various ore minerals are found. Labs include identification of ore minerals in hand sample and under microscope and methodology of economic geology. Dual listed with GEOL 4720. *Prerequisite:* GEOL 2010.

5730. Seismic Data Processing. 3. Fundamentals of seismic reflection data processing: processing of field tapes, cross-correlation, velocity analysis, stacking, deconvolution. Statistics correct, migration, coherency filtering. *Prerequisites:* GEOL 5180, MATH 4430, MATH 4440.

5760. Rates and Timescales of Surface Processes. 3. Explores methods for quantifying rates and timescales of weathering, erosion, soil formation, nutrient cycling and other surface processes. Focus includes cosmogenic nuclides, tracer thermochronometry, U-series disequilibrium, fallout radionuclides, and optically stimulated luminescence. Course features a mix of instructor-driven lectures on fundamentals and student-driven discussion of cutting-edge research from recent literature. Dual listed with GEOL 4760. *Prerequisites*: GEOL2150 or GEOG 3010 or GEOL 4880 and MATH 2205 and CHEM 1020 and PHYS 1100.

5777. Geochemistry of Natural Waters. 3. Physical chemistry of solutions applied to natural waters. Chemistry of rock weathering, controls on major, minor, and trace element contents of natural waters. Problems of introduced pollutants. Dual listed with GEOL 4777. *Prerequisites:* GEOL 2010, MATH 2205, and CHEM 1030.

5800. Advanced Remote Sensing and Technical Mapping. 2-5 (Max. 5). Application of computer methods to spectral analysis, image processing, geometric correction, data transformation, global positioning, digital photogrammetry, and automated interpretation. Integration of spectral data, image interpretation, field mapping, photogrammetric analysis, and map/image analysis will be emphasized. *Prerequisite:* consent of instructor.

5820. Advanced Geomorphology. 1-3 (Max. 6). Graduate reading and discussion seminar on current topics in surficial processes. An in-depth analysis of the literature and work, with the subject matter determined by student interest. May include lectures. *Prerequisite:* senior or graduate standing in geology.

5835. Applied/Exploration Geophysics. 3. Discusses the fundamentals of Applied or Exploration Geophysics, encompassing lecture, laboratory classes and discussion of case histories. Covers the Seismic Refraction, Seismic Reflection, Gravity, and Magnetics methods. Provides a solid grounding about the exploration of the Earth's subsurface for mineral and hydrocarbon resources and environmental issues. Dual listed with GEOL 4835. *Prerequisite:* graduate standing in geology.

5850. Economic Geology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.

5851. Environmental Geology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.

5852. Geochemistry. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.

5853. Geomorphology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.

5854. Geophysics. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.

5855. Ground Water Hydrology. 1-6 (Max. 7). *Prerequisite:* graduate standing in geology.

5856. Mathematical and Statistical Geology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5857. Mineralogy and Crystallography. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5858. Paleontology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5859. Petrology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5860. Sedimentology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5861. Stratigraphy. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5862. Structural Geology. 1-6 (Max. 6). *Prerequisite:* graduate standing in geology.
5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.
5920. Continuing Registration: On Campus. 1-2 (Max. 16). Prerequisite: advanced degree candidacy.
5940. Continuing Registration: Off Campus. 1 - 2. (Max 16). Prerequisite: advanced degree candidacy.
5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.
5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.
5980. Dissertation Research. 1-12. (Max. 48). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.
5990. Internship. 1-12 (Max. 14). *Prerequisite:* graduate standing.

Global and Area Studies

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Director: David Messenger

Professor:
JEAN A. GARRISON, B.A. University of Wyoming 1990; M.A. University of South Carolina 1992; Ph.D. 1996; Professor of Political Science, Global and Area Studies 2010, 2001.

Associate Professor:
DAVID MESSENGER, B.A. McGill University 1993; M.A. University of Toronto 1994; Ph.D. 2000; Associate Professor of History and Global and Area Studies 2011, 2006.
ALI H. RADDAOUI, B.A. Ecole Normale Superieure, Tunis, Tunisia 1981; M.A. Indiana University-Bloomington 1985; Ph.D. 1988; Associate Professor of Arabic 2010.

Assistant Professors:
NEVIN AIKEN, B.A. University of Western Ontario 2003; M.A. 2004; Ph.D. University of British Columbia 2010; Assistant Professor of Political Science and Global and Area Studies 2010.
YI-LING CHEN, B.S. National Taiwan University 1989; M.S. 1992; Ph.D. Rutgers University 2000; Assistant Professor of Global and Area Studies and Geography 2010.
ADAM HENNE, B.A. Drew University 1997; Ph.D. University of Georgia 2008; Assistant Professor of Global and Area Studies and Anthropology 2008.
TOM SEITZ, B.S. University of the State of New York 1988; M.A. University of Kent at Canterbury 1989; Ph.D. University of Cambridge 1997; Assistant Professor of Global and Area Studies 2009, 2012.
MARCUS WATSON, B.S. SUNY Brockport 1995; M.A. Cornell University 2005; Ph.D. 2009; Assistant Professor of Global and Area Studies and African American and Diaspora Studies 2010, 2012.

Senior Lecturer:
YARONG JIANG ASHLEY, B.A. University of Shanghai 1986; M.A. University of Wyoming 1995; Ph.D. 1993; Senior Lecturer 2009, 2000.

Assistant Lecturers:
ANNE ALEXANDER, B.B.A. New Mexico State University, 1991; M.S. 1993; Ph.D. University of Wyoming, 2001; Assistant Lecturer, Director of International Programs, Associate Dean of the Outreach School 2013.
RUTH BJÖRKENWALL, B.A. University of Berkeley, 1989. Assistant Lecturer 2013.

Professor Emeritus:
Garth Massey

Advisory Committee:
Stephanie Anderson, political science
Nevin Aiken, political science and global and area studies
Yarong Ashley, global and area studies
Ruth Björkenwall, global and area studies
Edward Bradley, agricultural and applied economics
Yi-Ling Chen, global and area studies, geography
Lydia Dambekalns, secondary education
Susan Dewey, gender and women's studies
Jean Garrison, political science, global and area studies
Adam Henne, global and area studies, anthropology
Manuela Hofer-McIntyre, global and area studies
David Messenger, history, global and area studies
Linette Poyer, anthropology
Ali Raddaoui, religious studies, global and area studies
Terri Rittenburg, management and marketing
Tom Seitz, global and area studies
Marcus Watson, global and area studies, African American and diaspora studies

Adjunct Faculty
(see department section following name for academic credentials)
Stephanie Anderson, political science
Tanja Börzel, political science, Freie Universitaet Berlin
Ed Ward Bradley, agricultural economics
Michael Brose, history
Roger Coupal, agriculture and applied economics
Lydia Dambekalns, secondary education
Antoinette DeNapoli, religious studies
Susan Dewey, gender and women's studies
Andrew Garner, political science
Michael Harkin, anthropology
Marianne Kamp, history
Timothy Kearley, law
Joseph Krafczik, Russian
Carolyne Larson, history
Shiri Noy, sociology

Mark Peterson, management and marketing
Joanna Poblete, history
Lin Poyer, anthropology
Thomas Risse, political science, Freie Universitaet Berlin
Terri Rittenburg, management and marketing
Amy Roberts, elementary and early childhood education
Chris Rothfuss, global and area studies
Mona Schatz, social work
Richard J. Schmidt, civil and architectural engineering
Audrey Shalinsky, anthropology
Ed Sherline, philosophy
J.J. Shinker, geography
Lilia Soto, American studies and latina/o studies
Sarah Strauss, anthropology
Jim Thurman, international studies, political science - Central Wyoming College
Ruth Toulson, anthropology
Gerald Webster, geography
Bonnie Zare, gender and women's studies

Undergraduate Learning Outcomes

Goal 1. Students graduating with a BA in international studies will be able to recognize and appreciate the historical, political, social, cultural, and economic dimensions of international processes and issues, integrating these into an interdisciplinary perspective.

Goal 2. Students graduating with a BA in international studies will have the capability to critically read, write about, discuss, and engage in scholarly inquiry related to international processes and issues.

Goal 3. Students graduating with a BA in international studies will have a minimal level of fluency in a second language and are expected to experience a foreign locale in which to use the second language skills.

Goal 4. Students will be made aware of career and post-graduate opportunities suitable for an international studies major.

Graduate Learning Outcomes

All students who graduate with a Master's degree in international studies will be able to:

- Engage in independent empirical inquiry that makes an original contribution to the field of study;
- Think critically and reason logically about a problem and the ways it can be answered;
- Employ the best recognized methods appropriate to their research;
- Effectively develop alternative explanations, use theories and concepts to guide the research project, and conduct the work in such a way that disproof is possible; and
- Present their work intelligently, with both written and oral capability at a level of professional expectations.

They will have a broad understanding of:

- International affairs;
- The diversity of national cultures and social structures;
- Political and economic systems;
- Major global trends and problems.

Undergraduate International Studies Curriculum

Students graduating with a degree in international studies will be able to recognize and appreciate the historical, political, social, cultural, and economic dimensions of international processes and issues, integrating these into an interdisciplinary perspective. In addition to courses housed in the Global and Area Studies Program, the curriculum consists of numerous interdisciplinary courses across UW's seven colleges, primarily from the departments of political science, history, anthropology, geography, sociology, religious studies, women's studies, African American and diaspora studies, environment and natural resources, and economics.

Core Courses - Students take 10 hours of core coursework. INST 1010 (Proseminar) provides an introduction to the international studies major; INST 2350 (Introduction to Global Studies) and INST 2310 (Introduction to International Relations) provide the theoretical framework for the global and regional tracks. INST 4950 (Capstone) provides the culminating experience for students completing the B.A. degree in international studies and fulfills the WC writing requirement for the University Studies Program.

Area of Focus - Students will complete a minimum of 18 hours of coursework in two specific areas of focus, choosing a global and regional track. Students must complete a minimum of 9 hours in each track. Global and regional tracks have suggested Gateway courses. Most Gateway courses fulfill University Studies requirements.

Global Tracks - Governance and Conflict Resolution; Economic Systems; Culture and Social Issues; Sustainable Development and the Environment

Regional Tracks - Africa and the Middle East; Asia and the Pacific Rim, Europe and the Former Soviet Union; Latin America.

Foreign Language - Students must complete 18 hours in a single foreign language with one course at the 3000/4000-level, or show an equivalent level of proficiency. Language courses must be conversational language courses. American Sign Language is not considered a foreign language.

Electives - Students must take 9 hours of elective courses from the international studies curriculum, six of which must be upper division. One of the following Gateway courses can count for the elective requirement: ANTH 1200, ECON 1000, GEOG 1000, POLS 1200, INST 1330.

All required courses for the major must be passed with a grade of C or better. There are numerous special topics courses offered during the academic year and these courses can fulfill the international studies requirements with approval from your adviser. Students are encouraged to satisfy the USP QB (quantitative reasoning) requirement by taking STAT 2070, Introductory Statistics for Social Sciences.

International Studies majors are encouraged to study abroad or do an internationally-focused internship. Opportunities are listed on the Global and Area Studies website.

Minors

Students can minor in 3 areas by fulfilling one of the following sets of requirements:

1. International Studies Minor. Twenty-seven hours of coursework including at least 12 hours in a foreign language, 15 hours of international studies curriculum, with a minimum of 9 hours at the 3000-level or above.
2. Asian Studies Minor—a minimum of 27 credit hours, which includes 12 hours in an Asian language and 9 hours of upper-division coursework. For detailed requirements, see www.uwyo.edu/intstudy/undergrad/asianminor.asp.
3. European Studies Minor—a minimum of 30 credit hours, which includes 12 hours in a single modern European language other than English, and 9 hours of upper division coursework. For detailed requirements, see www.uwyo.edu/intstudy/undergrad/eruopeanstudies-minor.asp.

Graduate Study

Graduate Studies Director:
Marcus Watson, Assistant Professor

Students take either the Plan A (thesis), or master's international Peace Corps option. Students taking the Plan A option must have a minimum of 26 hours of graded non-thesis coursework and 4 hours of thesis; students taking the master's international option must have 24 hours of non-thesis coursework and complete their 6 hours Peace Corps internship credit.

Program Specific Admission Requirements

Admission is open to all students with a bachelor's degree who meet the university minimum requirements.

For information about application requirements, please see the Global and Area Studies Program website: http://www.uwyo.edu/instudy/ma%20degrees/admissionrequirements.html

Note: As a prospective student, you should apply to graduate school first. When accepted, submit your application to the Peace Corps. After completing initial coursework and being assigned to your country of service, you will travel to your site and begin training.

The deadline for receipt of all application materials is February 1st. The Global and Area Studies Program only admits students for the Fall semester.

Program Specific Graduate Assistantships

Students interested in a graduate assistantship should complete the "Application for a Graduate Assistantship" and upload it with their application materials by February 1 for the fall semester. On this date, only complete application packets will be considered.

Program Specific Degree Requirements

Master's Program

Students must meet three requirements: 1) Each student must take INST 5400. 2) Each student must take INST 5200. 3) Each student must demonstrate proficiency in a foreign language, accomplished in the course of the program or from previous experience or coursework. Foreign language hours do not count toward the M.A. degree. Note: Master's International - Peace Corps option has separate requirements. Please see below for more information.

The program also offers a joint International Studies/Environment and Natural Resources degree. See www.uwyo.edu/intstudy/ for specific degree requirements.

Plan A (thesis)

Students are encouraged to construct, with the adviser's approval, a program that focuses their own intellectual interests and career plans. To promote that end, students should be prepared to file a plan of study with the graduate adviser during the second semester of coursework.

No later than the second semester in residence, each student shall select a graduate committee to oversee his or her academic work. The committee will be chaired by the student's major professor and must have at least one member from a discipline other than that of the major professor. Students also will prepare a thesis proposal and give a presentation of their preliminary project before the Global and Area Studies faculty and complete a thesis prospectus defense with their graduate committee by the end of their second semester.

Students must pass an oral examination at the completion of their program. Normally, examination will center on the thesis, but may also encompass coursework of the candidate.

Required Coursework

Advanced Theory Course
- INST 5200 Graduate Proseminar in International Studies

Research Methods Course
- INST 5400 International Social Science Research Methods

Master's International - Peace Corps Option

Minimum requirements: 30 hours of graduate work, including 24 hours of graduate coursework and completion of Peace Corps service.

Students admitted to the Peace Corps - but not yet having served - take 24 hours of graduate coursework, working closely with a faculty mentor to prepare themselves for two academic tasks associated with their Peace Corps assignment. The first involves preparatory readings, completion of a proposal and presentation of the preliminary project before the Global and Area Studies faculty, and writing of a critical analytic paper associated with the locale of their anticipated Peace Corps service. It is submitted to three faculty members (their graduate committee) prior to beginning service. The second involves writing an applied analytic paper based on their Peace Corps service. The paper will be guided by the student's graduate committee and is due no later than six months following the completion of Peace Corps service.

Students must pass an oral examination at the completion of their program. Normally, this examination will center on the second paper, but may also encompass coursework of the candidate.

Students are encouraged to specialize in one of three areas: agriculture, environment and natural resources, and non-governmental organizations (NGO) administration.

The curriculum for the concentration in agriculture is intended to give the student a general understanding of the issues facing agrarian-based communities. The focus of the curriculum is on economic development and natural resource management issues.

The environment and natural resources concentration allows students to learn about and practice innovative approaches to environmental and natural resource management issues from a global perspective.

The NGO concentration is intended for students who would like a volunteer placement that involves working with NGOs. The curriculum provides a basic foundation in public administration with an emphasis on the relationships, challenges and opportunities that shape the work of civil society organizations.

For more specific information on course requirements for the Master's International - Peace Corps concentrations, please visit the website at: www.uwyo.edu/instudy/.

Students also have the option of developing another concentration based on personal experience and interests, although this may be limited by the availability of course offerings.

Required Coursework for Master's International - Peace Corps Program

Advanced Theory Course
- INST 5200 Graduate Proseminar in International Studies

Research Methods Course
- INST 5400 International Social Science Research Methods

Graduate Minor in International Studies

A graduate minor in international studies provides students in graduate programs other than international studies with the opportunity to acquire a basic graduate-level familiarity with international relations, global

processes and cultural diversity around the world. Students acquire a foundation in intergovernmental relations and research methodology. Beyond this, students work closely with a graduate director to fashion a program of study appropriate for their interests and post-graduate plans. The minor complements several other graduate degree programs.

Prerequisites for Admission

Declaration of an international studies minor is contingent on admission to a master's or doctoral degree program. Application is in the form of a letter of interest to the Director of Graduate Studies, Dr. Marcus Watson, including the background, anticipated course of study, and reason for seeking the minor. An interview with the director is also required. All prerequisites for entering the graduate program in international studies as a major apply to the minor with the exception of proficiency in a second language. Students must be prepared for coursework in international studies at the graduate level and be willing to take prerequisite courses if necessary.

Course and Committee Requirements

Graduate students minoring in international studies must satisfy the requirements of their graduate major and take twelve credits of guided graduate coursework in international studies. With the approval of the department of the graduate major, these twelve hours may also count toward the major. Students are required to take at least one advanced theory course (INST 5200) and one advanced research methods course. All courses will be determined in consultation with the Graduate Studies Director.

International Studies (INST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. Proseminar in International Studies I. 1. [I,L◀▶(none)] An introduction to the University as a social institution, international studies, and the International Studies Program. Students are introduced to international studies faculty and students. Emphasis is on topics, approaches, issues and problems falling within the purview of international studies. Offered S/U only.

1040 [INST 2000]. Introduction to International Business. A broad study of the field of international business activity and theory and review major foreign environmental forces - financial, economic and socioeconomic, physical, sociocultural, political, legal, labor, competitive, and distributive - within the context of strategic management issues. Cross listed with INBU 1040. Prerequisites: ECON 1010.

1060. World Regional Geography. 3. [CS,G◀▶H] Covers the distributions, traits, and processes of the Earth's peoples and landscapes through the perspective of regional geography, which is the study of the spatial relationships of natural environments and human societies. Equivalent to GEOG 1000. Credit cannot be earned in both GEOG 1000 and INST 1060.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1200. Non-Western Political Cultures. 3. [CS,G◀▶(none)] Gives students appreciation of non-western political cultures and how these cultures have created different political institutions and practices. Non-Western nations of Asia, Africa, and the Middle East are used as case studies. Cross listed with POLS 1200. (Offered each semester)

1250. Introductions to Comparative Government. 3. How do foreign states deal with the numerous challenges to their stability? Do institutions affect a state's approach to solving different problems? How do these different approaches affect policy? This course introduces students to different styles of governance and compare countries from around the world with reference to their political ideology. Cross listed with POLS 1250.

1330. World History since 1750. 3. [CS,G◀▶(none)] A history of the world's peoples and societies from 1750 to the present, with an emphasis on the diversity and interconnectedness of human life in the past. Cross listed with HIST 1330.

2200. Study Abroad Preparation. 1. Prepares students for long-term study in a foreign country. Helps students adapt to and understand the host country: culture, history, geography, political and economic context. Students become familiar with practical information needed for a foreign experience, principles of culture shock, ethnocentrism, cultural relativism, and fundamentals of cross-cultural communication. Offered S/U only. Identical to INST 5000.

2230. Introduction to Asian Studies. 3. [G◀▶(none)] South, East, and Southeast Asia are home to virtually half of humankind with the fastest growing economies, poorest nations and hundreds of ethnic groups, rich religions and languages. Introduces cultural, political, economic and environmental landscapes of this diverse region as nations and as regional interrelationships.

2240. Introduction to African Studies. 3. [WB◀▶COM2] Confront African stereotypes by exploring the continent's complex history and current affairs. These realities will be reached with the help of different disciplinary perspectives, such as economics, political science, and anthropology. Equipped with the basics, students will be primed to tackle more advanced courses on Africa. Cross listed with AAST 2240. *Prerequisites*: WA or equivalent.

2250. Introduction to Latin American Studies. 3. [(none)◀▶COM2] Introduction to the culture, history and politics of Latin America, from the US/Mexico border to the Antarctic ice fields of Patagonia. We will consider historical events and encounters from pre-Conquest times to contemporary crises; out toolkit includes geography, anthropology, history, political economy, literature and cultural studies. *Prerequistes*: none.

2260. Foreign Locale. 3-6 (Max. 9). A UW course taught primarily or entirely in a foreign locale.

2280. Introduction to European Studies. 3. [(none)◀▶COM2] This class aims to introduce student to Europe and to better understand how notions of community and difference, territories and borders, security and identity and institutions are expressed in Europe. Class will emphasize the history of Europe across the twentieth and twenty-first centuries, but will also draw upon politics, geography, sociology, cultural studies and anthropology.

2300. World Politics in the Post-Cold War Era. 3. Examines changes that have taken place since the end of the Cold War in perspectives of major world powers, global and regional power balances, patterns of conflict and cooperation and the structure of the world system. Focuses on what these changes portend for the future. Cross listed with POLS 2300. (Offered fall semester)

2310. Introduction to International Relations. 3. [G◀▶(none)] Analyzes nature of international relations, emphasizing various methods of explaining and interpreting international behavior of nation-states. Illustrates contemporary problems of world politics. Cross listed with POLS 2310. (Normally offered once a year)

2350. Introduction to Global Studies. 3. [CS,G◀▶(none)] Turns an interdisciplinary eye on the contemporary world of consuming and global connections. Takes a broad overview of various approaches to the study of globalization, while exploring the links between consumption, civil society, social justice, and ecological integrity.

2990. Topics in International Studies. 1-6 (Max. 15). Accommodates seminar series and/or course offerings including those by interdisciplinary teams and visiting faculty in international studies not covered by department courses. *Prerequisite:* WA

3000 [2100]. Social Change. 3. [G◀▶(none)] Studies causes, processes and consequences of structural transformations in historical and comparative perspective. Reviews and assesses forces that account for sociological changes. Explores social change globally as well as in the U.S. Cross listed with SOC 3000. *Prerequisite:* SOC 1000 and junior standing.

3050 [G&R 3050]. Economic Geography. 3. Economic geography is the study of the location, distribution and spatial organization of economic activities across the globe; specifically how the economic realm is intertwined with other spheres of international social life. It explores the inherent logics and mechanisms of the capitalist system, and the social and spatial inequalities that result. Cross listed with INST 3050. *Prerequisites*: 6 hours of Social Sciences or International Studies. (Normally offered fall semester every other year)

3100. Chinese Society. 3. [G◀▶(none)] Reviews origins and consequences of Chinese revolution in comparative and cultural perspectives. Discusses influence of historical traditions and social structure on individual lives and behavioral patterns. Cross listed with SOC 3100. *Prerequisite:* SOC 1000.

3200. Comparative Political Cultures. 3. Histories and experiences of various societies have shaped their values, norms, beliefs, expectations and attitudes. Explore how the beliefs, values and lifestyles of various societies shape peoples' views of their place in the politics of the state and of the state's place in their daily lives. Cross listed with POLS 3200. *Prerequisites*: 9 hours of INST or POLS.

3400. Politics and Society of Turkey. 3. [G◀▶(none)] Examines the history of Turkey with an emphasis on its relationship with the Western world. Major topics include the Ottoman Empire; Ataurk and the founding of the Republic of Turkey; Turkey's role in the Cold War; Kurdish and other minority populations; the changing Turkish political landscape; the evolution of Islamist politics; and recent relations with the United States and European Union. *Prerequisite:* WA.

3420. The Anthropology of Global Issues. 3. Using anthropology's long-term, holistic and comparative approaches, the course examines key global issues, e.g., poverty, war, disease, environmental degradation, and terrorism from an anthropological perspective. Cross listed with ANTH 3420. *Prerequisite:* ANTH 1200.

3860. Economics of World Food and Agriculture. 3. [G◀▶(none)] Explores global food and agricultural issues with a focus on hunger, chronic malnutrition, and diets of people in developing countries. Introduces basic economic concepts pertinent to understanding and analyzing global food markets and prices and to evaluating government policies designed to reduce food insecurity, enhance diets, and promote agricultural development. Cross listed with AGEC 3860. *Prerequisite:* An economics principles course. (Normally offered spring semester)

4050. Development, Africa, and Culture. 3. Focuses on the complex and checkered relationships between Western-inspired development and African cultures. Striking a balance among ethnographic case studies, theoretical lenses, and practical implications, understand what Euro-American efforts at foreign development, including contemporary globalization, look like from an African perspective. Provides an understanding of African expectations of development and developers. Dual listed with INST 5050; cross listed with AAST 4050. *Prerequisites:* junior standing and instructor consultation.

4060. NGOs, Development, and Culture. 3. Non-governmental organizations (NGOs) have grown exponentially in number and are often viewed as the new and best vehicle for international development. Focuses on international non-governmental organizations (INGOs), in contexts of Western aid to postcolonial societies and the role they play in the international aid system. Understand INGOs from historical, global, and cultural perspectives. Dual listed with INST 5060; cross listed with AAST 4060. *Prerequisites:* junior standing and instructor consultation.

4100. Global Public Health. 3. [G◀▶(none)] Introduces students to the global context of public health, to principles underlying global health, and to dimensions of public health particular to international settings. It examines major themes and policies in global health and analyzes health problems and varying responses to them in different parts of the world. Dual listed with INST 5100; cross listed with HLSC 4100. *Prerequisite:* upper division student status.

4110. Sociology of International Development. 3 [WC,G◀▶COM3] Surveys development studies and rural change, including case studies of deliberate change efforts toward industrialization. Includes peasant modes of food production, daily life in subsistence, agriculture, shifts to commercial agriculture and global economy, ethical and critical issues of induced change and different approaches to development process and outcomes. Cross listed with SOC 4110. *Prerequisite:* SOC 1000 or ANTH 1200; SOC 3000 recommended. (Offered once a year).

4155 [4920]. Women, War and Health. 3. [CS,G◀▶(none)] Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. Cross listed with WMST/NURS 4155. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4175 [4940]. Gender, Women, and Health. 3. [CS,G◀▶(none)] Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally will be examined. Cross listed with WMST/NURS 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4200. China and Globalization. 3. The economic reforms in China have been political, cultural, and above all, global processes. Understanding these processes of economic reform tells us much about the role of government, culture, and globalization in the transition from socialism to capitalism. It also tells us a great deal about China's future role in the international community of nations. *Prerequisite:* POLS 1200 or HIST 2041 or SOC 3100.

4240. Global Sex Work and Trafficking. 3. [G◀▶(none)] Drawing upon case studies from Africa, Asia, the Americas and Europe, this course explores the gendered intersections of power and privilege through the lens of sex work, broadly defined as the exchange of intimacy for something of value, and trafficking, defined as coerced forms of sex work. Dual listed with INST 5240; cross listed with WMST 4240. *Prerequisite:* 3-6 hours of WMST or INST.

4250. Economic Development in Asia. 3. [G◀▶(none)]. Designed to explore key issues to the historical development of Asian countries from both comparative and international political economy perspectives. Distinctive political, social, and economic characteristics of

these nations will be analyzed. Dual listed with INST 5250. *Prerequisite:* 9 hours of international studies of Asian-focused courses.

4255. Politics of Developing Nations. 3. An analysis of the processes of political, economic and social change in the non-Western world. Dual listed with INST 5255; cross listed with POLS 4255. *Prerequisites:* 9 hours of political science or international studies.

4260. Democratization and Regime Change. 3. Examines the theoretical/empirical research on causes of democratic transition and consolidation, including new waves of democratization and prospects for democratization in other contexts. Focus is given to a variety of theoretical/methodological perspectives such as the structural, strategic, social/cultural, institutional, and economic approaches. Dual listed with INST 5260; cross listed with POLS 4260. *Prerequisites:* 9 hours of political science or international studies.

4290. Inter-American Relations. 3. Surveys inter-American system and idea of hemispheric unity. Analyzes major issues confronting inter-American community. Cross listed with POLS 4290. *Prerequisite:* 9 hours of political science including POLS 2310. (Normally offered every other year)

4300. The World System. 3. Analyzes the structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Cross listed with POLS/SOC 4300. *Prerequisite:* SOC 1000 or ANTH 1100 or equivalent political science, international studies, or social science course. (Offered based on sufficient demand and resources)

4330. American Foreign Relations. 3. Analyzes American foreign policy decision-making process and selected contemporary foreign policy problems. Stresses political and institutional factors, along with analysis of policy options. Cross listed with POLS 4330. *Prerequisite:* 9 hours of political science or international studies including POLS 2310. (Normally offered once a year)

4340. International Organizations. 3. Encompasses development of world organizations, such as League of Nations, United Nations and its affiliate bodies. Also studies regional organizations and private international bodies. Cross listed with POLS 4340. *Prerequisite:* 9 hours of political science or international studies including POLS 2310.

4350. Culture Change. 3. Examines representative theories of change, factors involved, dynamics of modernization and applied anthropology. Identical to ANTH 4340. *Prerequisite:* ANTH 1200.

4360. International Peace and Conflict. 3. Why do nations go to war, engage in atrocities such as genocide, or move toward peace following conflict? Examines underlying processes behind both conflict and peace in the international system, including sources of conflict and ways conflicts might be moved toward sustainable peace. Dual listed with INST 5360; cross listed with POLS 4360. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

4370. Global Political Economy. 3. [G◀▶(none)] Examines the interaction of politics and the economy at the global level. Evaluates how political and economic decisions of one country or groups of countries affect institutions and life circumstances in others. Assesses the causes of consequences of globalization as rooted in political economy. Cross listed with SOC 4370. *Prerequisites:* SOC 1000 and junior standing or SOC 2100.

4375. Transitional Justice. 3. Mechanisms provide accountability for gross human rights violations and acts of mass atrocity within nations. Case studies are used to examine types of transitional justice interventions; tensions between demands of justice at local, national, and international levels; and transitional justice's role in post-conflict peace-building and reconciliation. Dual listed with INST 5375; cross listed with POLS 4375. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

4380. International History of Human Rights. 3. Examine the modern history of human rights in the global system, with particular empahsis on developments since the Second World War. Topics include the philosophy of human rights ideas; the histories of rights and rights violations in various regions; and the resulting international responses. Dual listed with INST 5380; cross listed with HIST 4380. *Prerequisites*: 9 hours of HIST or INST.

4455. Energy Security. 3. Evaluates the geopolitical and socioeconomic issues surrounding the roots of energy insecurity and the global challenge to provide adequate, affordable, and accessible energy. Topics of study include the questions of energy nationalism, climate security, import dependence and transportation insecurities, the future of fossil fuels and alternative energies. Dual listed with INST 5455. Cross listed with POLS 4455. *Prerequisites:* 9 hours of INST or POLS, including INST/POLS 2310.

4485. U.S. Latino Diaspora. 3. Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with HIST/CHST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.

4490. Ethical Trade in Latin America. 3. Examine the production of everyday products, their socio-ecological contexts, and the complicated global networks of delivery to consumers, particularly with regard to Latin America. The effectiveness and implications of the movement to make international trade more ecologically sustainable and socially just will be examined. Dual listed with INST 5490. *Prerequisites:* 9 hours of international studies or junior status.

4495. Indigenous Social Movements of Latin America. 3. Employs an interdisciplinary approach to understanding one of the most interesting political events of the past decades: the emergence of a transnational indigenous people's movement in Latin America. Issues explored in the course include neoliberalism and globalization; social movement theory; multiculturalism and citizenship; legal and cultural pluralism; sustainability, conservation and development. Dual listed with INST 5495. *Prerequisites:* 9 hours of international studies or junior status.

4540. International Marketing. 3. Approaches the topic of international marketing from a managerial perspective. Exposure to world environmental characteristics and interdependencies, as well as objectives, strategies and tactics of marketing goods and services to various countries and cultures. Cross listed with MKT 4540. *Prerequisite:* MKT 3210 and junior standing.

4560. Global Cities. 3. Globalization accelerates urbanization processes and creates a new type of city, the global city. This course introduces debates over global cities, urban culture, new urban landscapes, urban planning practices, and social disparity. It uses case studies on the cities around the world to explore the diversity of global city formation processes. Dual Listed with INST 5560; cross listed with GEOG 4560. *Prerequisites*: 9 hours of international studies or geography.

4580. Gender, Global Change, and Development. 3. Examines the global intersections of gender and public policy through its analysis of five central themes: [1] international development discourse in practice; [2] feminized labor and migration; [3] women's unequal access to resources (including land ownership and education); [4] agricultural production and sustainability; [5] health, reproduction and

mothering. Dual listed with INST 5580; cross listed with WMST 4580. *Prerequisite:* 3-6 hours of WMST or INST courses.

4582. 20th Century U.S. Foreign Relations. 3. Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic, racial, and gender issues. Cross listed with HIST 4582; dual listed with INST 5582. *Prerequisite:* HIST 1221.

4590. Sustainable Business Practices. 3. A close look at what is happening in business practice today through the 'lens' of sustainability. Business models and systems will be discussed and a framework proposed for assessing the ways in which principles of sustainability may be embedded within corporate strategy. Cross listed with MKT 4590; dual listed with INST 5590. *Prerequisites:* advanced business standing.

4650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with AMST/CHST/WMST 4650. Dual listed with INST 5650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

4680. Shanghai: Past & Present. 3. [CS,G◀▶(none)] Lectures, fieldtrips, and other cultural activities are all incorporated into the curriculum to help students learn about the political, economic and cultural development in 21st century China. Cross listed with SOC 4680.

4710. Comparative Systems. 3. The study of the origins and characteristics of modern economic systems; similarities and differences in the systems of the U.S., Great Britain, Soviet Union, Germany, India and China. Cross listed with ECON 4710. *Prerequisites:* ECON 3010; QA. (Offered based on sufficient demand and resources)

4881. International Social Welfare and Social Development. 3. Examines the basic framework of social welfare analysis and social development programming in the international arena, employing a multinational comparative analysis approach to explore the wide array of responses to social need across the globe. Students employ multinational comparative analyses to an area of social concern. Dual listed with INST 5881; cross listed with SOWK 4881. *Prerequisite:* POLS 1000; ECON 1010 recommended.

4950. Capstone in International Studies. 3. [WC◀▶COM3] Integrative course taught by an international studies faculty member. Students analyze in depth a topic from one of a variety of international studies approaches, organizing their research in concert with others in the class. Emphasis is on the quality of research and presentation. *Prerequisite:* senior standing in international studies.

4970. Internship in International Studies. 1-6 (Max. 15). Integrates practical international experience with academic knowledge. Students are expected to participate in specifically assigned tasks and observe broader activities of sponsoring organization, and reflect on experience in written assignments. Satisfactory/unsatisfactory only. Dual listed with INST 5970. Available for S/U grading only. *Prerequisites:* 9 hours of international studies courses and consent of instructor.

4975. Readings in International Studies. 1-3 (Max. 9). Outlines special programs of readings in international studies to meet the needs of individual students. *Prerequisite:* 9 hours of international studies courses.

4990. Topics: _____. 1-6 (Max. 15). Accommodates seminar series and/or course offerings including those by interdisciplinary teams and visiting faculty in international studies not covered by departmental courses. Dual listed with INST 5990. *Prerequisites:* junior standing and consent of instructor.

5000. Study Abroad Preparation. 1. Prepares students for long-term study in a foreign country. Helps students adapt to and understand the host country: culture, history, geography, political and economic context. Students become familiar with practical information needed for a foreign experience, principles of culture shock, ethnocentrism, cultural relativism, and fundamentals of cross-cultural communication.

5050. Development, Africa, and Culture. 3. Focuses on the complex and checkered relationships between Western-inspired development and African cultures. Striking a balance among ethnographic case studies, theoretical lenses, and practical implications, understand what Euro-American efforts at foreign development, including contemporary globalization, look like from an African perspective. Provides an understanding of African expectations of development and developers. Dual listed with INST 4050; cross listed with AAST 5050. *Prerequisites:* junior standing and instructor consultation.

5060. NGOs, Development, and Culture. 3. Non-governmental organizations (NGOs) have grown exponentially in number and are often viewed as the new and best vehicle for international development. Focuses on international non-governmental organizations (INGOs), in contexts of Western aid to post-colonial societies and the role they play in the international aid system. Understand INGOs from historical, global, and cultural perspectives. Dual listed with INST 4060; cross listed with AAST 5060. *Prerequisites:* junior standing and instructor consultation.

5100. Global Public Health. 4. Introduces students to the global context of public health, to principles underlying global health, and to dimensions of public health particular to international settings. It examines major themes and policies in global health and analyzes health problems and varying responses to them in different parts of the world. Cross listed with HLSC 5100, dual listed with INST 4100. *Prerequisite:* upper division or graduate standing.

5175. Gender, Women and Health. 3. Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally are examined. Dual listed with WMST/NURS 5175; cross listed with WMST/INST/NURS 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course.

5200. Graduate Proseminar in International Studies. 3-6 (Max. 6). Introduces students to different interdisciplinary approaches -perspectives, theories, and paradigms - within International Studies in order to explain the economic, historical, social, cultural, and political dimensions of international processes and issues. Students explore emerging trends in the global system and the most pressing challenges facing states, societies, and peoples. *Prerequisites:* graduate student status.

5210. Seminar in Human Security. 3-6 (Max. 6). A broad interdisciplinary approach to the study of human security within the field of international studies and global politics in order to explore the theories and processes that explain past and emerging patterns of behavior in the international system, as well as key aspects of local to global policymaking. Dual listed with POLS 5210.

5220. Graduate Seminar in Development. 3. This seminar will explore political challenges facing developing nations in the twenty-first century. The objective is to equip students from a broad range of backgrounds with a

firm grounding in current development approaches and debates. *Prerequisite:* INST graduate standing.

5240. Global Sex Work and Trafficking. 3. Drawing upon case studies from Africa, Asia, the Americas and Europe, this course explores the gendered intersections of power and privilege through the lens of sex work, broadly defined as the exchange of intimacy for something of value, and trafficking, defined as coerced forms of sex work. Dual listed with INST 4240; cross listed with WMST 5240. *Prerequisite:* 3-6 hours of WMST or INST.

5250. Economic Development in Asia. 3. Designed to explore key issues to the historical development of Asian countries from both comparative and international political economy perspectives. Distinctive political, social, and economic characteristics of these nations will be analyzed. Dual listed with INST 4250. *Prerequisite:* 9 hours of international studies of Asian-focused courses.

5255. Politics of Developing Nations. 3. An analysis of the processes of political, economic and social change in the non-Western world. Dual listed with INST 4255; cross listed with POLS 5255. *Prerequisites:* 9 hours of political science or international studies.

5260. Democratization and Regime Change. 3. Examines the theoretical/empirical research on causes of democratic transition and consolidation, including new waves of democratization and prospects for democratization in other contexts. Focus is given to a variety of theoretical/methodological perspectives such as the structural, strategic, social/cultural, institutional, and economic approaches. Dual listed with INST 4260; cross listed with POLS 5260. *Prerequisites:* 9 hours of political science or international studies.

5300. The World System. 3. Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with INST 4300. Cross listed with POLS/SOC 5300. *Prerequisite:* SOC 1000 or ANTH 1100 or equivalent political science, international studies, or social science course.

5360. International Peace and Conflict. 3. Why do nations go to war, engage in atrocities such as genocide, or move toward peace following conflict? Examines underlying processes behind both conflict and peace in the international system, including sources of conflict and ways conflicts might be moved toward sustainable peace. Dual listed with INST 4360; cross listed with POLS 5360. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

5375. Transitional Justice. 3. Mechanisms provide accountability for gross human rights violations and acts of mass atrocity within nations. Case studies are used to examine types of transitional justice interventions; tensions between demands of justice at local, national, and international levels; and transitional justice's role in post-conflict peace-building and reconciliation. Dual listed with INST 4375; cross listed with POLS 5375. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

5380. International History of Human Rights. 3. Examine the modern history of human rights in the global system, with particular empahsis on developments since the Second World War. Topics include the philosophy of human rights ideas; the histories of rights and rights violations in various regions; and the resulting international responses. Dual listed with INST 4380; cross listed with HIST 5380. *Prerequisites*: 9 hours of HIST or INST.

5400. International Social Science Research Methods. 3. Introduces students to a wide variety of interdisciplinary social science methodologies that have proven especially conducive to international research. *Prerequisite:* graduate standing.

5455. Energy Security. 3. Evaluates the geopolitical and socioeconomic issues surrounding the roots of energy insecurity and the global challenge to provide adequate, affordable, and accessible energy. Topics of study include the questions of energy nationalism, climate security, import dependence and transportation insecurities, the future of fossil fuels and alternative energies. Dual listed with INST 4455. Cross listed with POLS 5455. *Prerequisites:* 9 hours of INST or POLS, including INST/POLS 2310.

5490. Ethical Trade in Latin America. 3. Examine the production of everyday products, their socio-ecological contexts, and the complicated global networks of delivery to consumers, particularly with regard to Latin America. The effectiveness and implications of the movement to make international trade more ecologically sustainable and socially just will be examined. Dual listed with INST 4490. *Prerequisites:* 9 hours of international studies or junior status.

5495. Indigenous Social Movements of Latin America. 3. Employs an interdisciplinary approach to understanding one of the most interesting political events of the past decades: the emergence of a transnational indigenous people's movement in Latin America. Issues explored in the course include neoliberalism and globalization; social movement theory; multiculturalism and citizenship; legal and cultural pluralism; sustainability, conservation and development. Dual listed with INST 4495. *Prerequisites:* 9 hours of international studies or junior status.

5560. Global Cities. 3. Globalization accelerates urbanization processes and creates a new type of city, the global city. This course introduces debates over global cities, urban culture, new urban landscapes, urban planning practices, and social disparity. It uses case studies on the cities around the world to explore the diversity of global city formation processes. Dual Listed with INST 4560; cross listed with GEOG 5560. *Prerequisites*: 9 hours of international studies or geography.

5580. Gender, Global Change, and Development. 3. Examines the global intersections of gender and public policy through its analysis of five central themes: [1] international development discourse in practice; [2] feminized labor and migration; [3] women's unequal access to resources (including land ownership and education); [4] agricultural production and sustainability; [5] health, reproduction and mothering. Dual listed with INST 4580; cross listed with WMST 5580. *Prerequisite:* 3-6 hours of WMST or INST courses.

5650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with AMST/CHST/WMST 5650. Dual listed with INST 4650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

5582. 20th Century U.S. Foreign Relations. 3. Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic racial and gender issues. Dual listed with 4582; cross listed with HIST 4582/5582. *Prerequisite:* HIST 1221.

5590. Sustainable Business Practices. 3. A close look at what is happening in business practice today through the 'lens' of sustainability. Business models and systems will be discussed and a framework proposed for assessing the ways in which principles of sustainability may be embedded within corporate strategy. Cross listed with MKT 5590; dual listed with INST 4590. *Prerequisite:* advanced business standing.

5881. International Social Welfare and Social Development. 3. Examines the basic framework of social welfare analysis and social development programming in the international arena, employing a multinational comparative analysis approach to explore the wide array of responses to social need across the globe. Students employ multinational comparative analyses to an area of social concern. Dual listed with INST 4881; cross listed with SOWK 5881. *Prerequisite:* POLS 1000; ECON 1010 recommended.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrolled in a graduate degree program.

5970. Internship. 1-12 (Max. 24). Integrates practical international experience with academic knowledge. Students are expected to participate in specifically assigned tasks and observe broader activities of sponsoring organization, and reflect on experience in written assignments. Dual listed with INST 4970. *Prerequisites:* 9 hours of INST core courses and consent of instructor.

5975. Graduate Readings in International Studies. 1-3 (Max. 12). Outlines special programs of readings in international studies to meet the needs of individual students. *Prerequisite:* graduate standing.

5990. Topics:. 1-6 (Max. 15). Accommodates seminar series and/or course offerings including those by interdisciplinary teams and visiting faculty in International Studies not covered by departmental courses. Dual listed with INST 4990. *Prerequisites:* junior standing and consent of instructor.

Arabic (ARBC)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Arabic I. 4. Introduces beginning language learners to the Arabic writing system and provides opportunities for developing the four basic language skills (listening, speaking, reading, and writing) at word, phrase and sentence levels.

1020. First Year Arabic II. 4. Introduces beginning language learners to the fundamentals of Modern Standard Arabic and provides opportunities for developing the four basic language skills (listening, speaking, reading, and writing) and practicing them in a variety of academic contexts. *Prerequisite:* ARBC 1010 or LANG 1010.

2030. Second Year Arabic I. 4. Aims to help students attain an elementary level of communication in Modern Standard Arabic through emphasis on listening, speaking, reading and writing. Students expand their vocabulary pool, gain a deeper understanding of Arabic language system, and develop their knowledge of Arab culture. *Prerequisite:* ARBC 1020 or LANG 1020.

2040. Second Year Arabic II. 3. Aims to help students attain a lower intermediate level of communication in Modern Standard Arabic through emphasis on listening, speaking, reading and writing. Students develop a wider vocabulary pool, gain a deeper understanding of Arabic morphological and grammatical rules, and get acquainted with different aspects of Arab culture. *Prerequisite:* ARBC 2030 or LANG 2030.

3050. Modern Arabic and its Dialects. 3. Expose students to a range of Arabic dialects and to explore what relationship these dialects have with the Standard and among each other. Additionally, this course provides students with opportunities to systematically practice and simulate a variety of dialectal excerpts. Prerequisite: ARBC 2030 or LANG 2030.

3060. Arabic Writing. 3. [WB◀▶COM2] Intensive lower intermediate Arabic writing course will help students develop the skills acquired during the second year through analyzing and producing different text genres ranging from 200 to 500 words. It will move the student from writing letters, dialogs, reports, and summaries to longer narratives, descriptions, and opinion pieces. Prerequisites: ARBC 2040 or equivalent.

4990. Topics in Arabic. 3 (Max. 9). Accommodates seminar series and/or course offerings including those not provided by permanent course offerings. Prerequisites: ARBC 2040 and consent of instructor.

History

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Web site: www.uwyo.edu/history
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Department Chair: Michael Brose

Professors:

RENEE LAEGREID, B.A. Washington State University 1982; M.A.L.S. Wesleyan University 1994; Ph.D. University of Nebraska 2002; Professor of History 2015, 2012.

DAVID MESSENGER, B.A. McGill University 1993; M.A. University of Toronto 1994; Ph.D. 2000; Professor of History and Global and Area Studies 2015, 2006.

PHILIP J. ROBERTS, B.A. University of Wyoming 1973; J.D. 1977; Ph.D. University of Washington 1990; Professor of History 2015, 1990.

RONALD D. SCHULTZ, B.A. California State University—Long Beach 1971; M.A. University of California-Los Angeles 1976; Ph.D. 1985; Professor of History 1996, 1985.

Associate Professors:

MICHAEL C. BROSE, B.S. Seattle Pacific University 1978; M.Sc. University of British Columbia 1985; M.A. University of Washington 1991; Ph.D. University of Pennsylvania 2000; Associate Professor of History 2006, 2000.

ISADORA A. HELFGOTT, B.A. Swarthmore College 1994; A.M. Harvard University 1997; Ph.D. 2006; Associate Professor of History 2015, 2009.

MARIANNE R. KAMP, B.A. Dartmouth College 1985; Ph.D. University of Chicago 1998; Associate Professor of History 2005, 2000.

JEFFREY D. MEANS, B.A. Grand Canyon University 1995; M.A. University of Montana 2001; Ph.D. University of Oklahoma 2007; Associate Professor of History 2013, 2007.

JOANNA POBLETE, B.A. University of California - Davis 1997; M.A. University of California - Los Angeles 2002; Ph.D. 2006; Associate Professor of History 2015, 2009.

CHERYL A. WELLS, B.A.H. Queen's University, Kingston, Ontario, Canada 1995; M.A. University of South Carolina 1998; Ph.D. 2002; Associate Professor of History 2007, 2002.

Assistant Professor:

CAROLYNE RYAN LARSON, B.A. Lawrence University 2004; M.A. University of Wisconsin-Madison 2006; Ph.D. 2011; Assistant Professor of History 2011.

Academic Professional:
BARBARA E. LOGAN, B.A. Queens College, CUNY 1986; Ph.D. University of California-Santa Cruz 2002; Extended Term Associate Lecturer 2015, 2011.

Professors Emeriti:
Cook, Dieterich, Hardy, Kohler, Moore, Williams

The Department of History offers programs leading to the degrees of Bachelor of Arts and Master of Arts.

The study of History at the University of Wyoming provides students with the tools to comprehend the present in order to prepare for the future. Challenging courses are designed to facilitate critical thinking and the development of analytical skills. Each of our courses features the discussion of complex issues, the development of writing and reading skills, and is generally oriented toward promoting individual enrichment. Our liberal arts undergraduate program of study encourages students to work toward a variety of career choices such as public history, archives and museum work, law, education, management, writing, government service, and graduate studies. The ability to develop perspective, render informed judgments, and function as productive citizens of the global community stand as hallmarks of our program.

Advising

The Department of History takes advising seriously. Prompt, accurate, and professional advising is a top priority at the University of Wyoming and the Department. To contact an adviser, please contact the department at uwhistory@uwyo.edu or go to the web site, www.uwyo.edu/history, or phone (307) 766-5101. Faculty advisers are assigned to all students.

Pre-Law advising is available. The American Bar Association encourages a broad base curriculum with an emphasis on critical thinking, communication, and writing skills. The department has advisers available to assist with designing a curriculum to meet pre-law students' needs.

Undergraduate Major (Effective Fall 2015)

To complete the Bachelor of Arts degree in history, the student must present at least 36 semester credit hours in history courses or approved substitutions. The courses must be taken for letter grades and a grade of C or better must be earned. Three semesters of credit in the same foreign language is required in the history major. College and university requirements must be satisfied as well, including Wyoming/U.S. Constitutional requirement that can be satisfied by completing either HIST 1211 or HIST 1221 or HIST 1251. The total hours required is 120.

The history major has considerable leeway in course selection. Most courses taken as a freshman and sophomore are devoted to satisfying general university and the Arts & Sciences college requirements. During the first four semesters students are encouraged to take the 1000-2000 level 2015 University Studies Requirements (USP) as well as the required 12 hours of 1000-2000 level History courses. In junior and senior years, students take HIST 3020, 4030, and 15 hours of 3000-4000 History courses as well as the College of Arts & Sciences Core requirements. Three additional credit hours of history electives are required to total the 36 hours needed for the major.

Because of the flexibility of the History program, history majors are encouraged to choose a minor in consultation with their academic adviser. The minor often can be embedded in the USP requirements and the A&S requirements, and usually does not require additional hours to complete. Additional History courses may not exceed 50 total hours to complete degree requirements. Students are encouraged to work closely with their assigned department adviser in preparing their schedules.

Learning Outcomes

It is the goal of the History department that our graduates have the following skills and knowledge:

- Students shall be able to demonstrate thinking skills by analyzing, synthesizing, and evaluating historical information from multiple sources.
- Students will develop the ability to distinguish between fact and fiction while understanding that there is no one historical truth.
- Students will produce well-researched written work that engages with both primary sources and the secondary literature.
- Students will develop an informed familiarity with multiple cultures.
- Students will employ a full range of techniques and methods used to gain historical knowledge.
- Students will develop an ability to convey verbally their historical knowledge.
- Students will demonstrate their understanding of cause and effect along with their knowledge of the general chronology of human experience.

Undergraduate Minor

The history minor must take at least 18 semester hours of history courses, 9 hours of which must be at the 3000-4000 level. These courses must be taken for letter grades with a minimum earned grade of C. For assistance in tailoring the minor content, contact the department office.

Public History Concentration

Public history designates the areas and careers that involve historical materials used for the general audience. Archives and museum management, historical preservation, historical publishing, planning and consulting on historical topics in public policy or film-making are among the fields covered by public history.

Along with its degree program, the Department of History offers a concentration in public history to students who complete the concentration requirements (18 semester hours). For further information, contact the history department. Completion of a concentration allows listing of the course of study on the student's transcript. Students should declare their intention to pursue the concentration prior to registering for the courses.

Public History Courses: Effective Spring 2003

PBH REQ1:

1. Complete HIST 2050, 4050

PBH INTERN:

2. Complete 3 hours of HIST 4400

PBH HIST PRES:

3. Complete 9 hours in the following areas:
   Historic Preservation
   Archives
   Historical Publishing and Programming
   Museums and Sites Management

Please see the department web site for a complete list of classes in PBH.

History/Social Science Education Majors

Through a cooperative agreement with the College of Education, students can now earn concurrent majors in history and secondary education in social sciences. Interested students should inquire with the Office of Teacher Education, McWhinnie Hall, room 100.

Graduate Study

The History Department offers a Master of Arts (MA) degree.

Program Specific Admission Requirements

General Regulations

The Department of History requires 18 hours of undergraduate history courses as minimum preparation for admission. The rules under which the student enters remain those governing the program for the duration of the student's continued enrollment. In accordance with university graduate regulations, students are responsible for meeting all deadlines and for fulfilling all requirements for the degree.

Application and Admissions

To be eligible for financial support in the form of a Graduate Assistantship, the Department of History must receive all materials by February 1. All other application materials must be received by the Department of History no later than May 1. The application process is now completely online. In addition to the application, applicants must upload the following documents via the UW Admissions website (www.uwyo.edu/admissions):

1. GRE Scores for the verbal and quantitative portions with a minimum combined score of 291 (900 old system) and a minimum verbal score of 153 (500 old system). The Department of History reserves the right to consider the analytical [writing] score as well.
2. Three letters of recommendation that assess the student's academic and research abilities.
3. Transcripts from all undergraduate institutions and graduate programs.
4. A writing sample of 10-20 pages, typically either a portion of a senior thesis or an upper-level seminar paper.
5. A statement of purpose of 250-500 words, explaining the applicant's preparation, interests, and plans. Please indicate on the first line of your statement if you would like to be considered for a graduate assistantship.

Program Specific Graduate Assistantships

When applicants submit their materials to the Department of History, they should indicate their wish to be considered for a Graduate Assistantship. Anyone receiving financial support must be registered as a full-time (9 hours per semester) student and must be making acceptable progress towards degree completion. Renewal of Graduate Assistantships is contingent on such progress. Support is not given for more than two academic years.

Program Specific Degree Requirements

Master's Program

Candidates for the MA in history are required to complete a minimum of 30 hours of course work with at least 24 hours in history. This will include:

1. History 5880, normally in the Fall semester of the first year.
2. 12 hours of history course work in the primary field of history.
3. 6 hours of course work in the secondary field of history.
4. 4 hours of thesis credit.
5. Students must demonstrate a reading knowledge of a foreign language appropriate to their research. Generally, the language requirement may be met by either of the following options:
   a. Passing a language exam administered by the Department of History.
   b. Completing the equivalent of the fourth semester of a language as offered at the University of Wyoming. All courses must be passed with a grade of C or better (may be taken pass/fail).

In special cases other relevant historical tools may substitute for the language requirement upon approval of the thesis adviser and the Graduate Coordinator.

6. In the spring semester of the first year, typically in early February, as scheduled by the Department Chair, the student will publicly defend his/her thesis proposal, which must include a written research prospectus and bibliography.
7. The student will successfully defend the final thesis draft before the Graduate Committee.

History (HIST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. Introduction to History: Encounters with Difference. 3. [I◀▶(none)]Introduces students to history as a discipline with a focus on the ways Americans have understood and dealt with the diverse nature of a society. (Offered based on sufficient demand and resources)

1110. Western Civilization I. 3. [CH◀▶(none)] Surveys basics of Western European civilization from decline of Roman Empire to 1700. (Normally offered fall semester)

1120. Western Civilization II. 3. A broad survey of European history in the Western tradition from 1700 to present. (Normally offered spring semester)

1210. United States History I. 3. Surveys U.S. history 1607-1865. Together with HIST 1220, it is the foundation on which all U.S. history courses offered by the department are based. Students cannot receive credit for both HIST 1210 and 1211. (Offered each semester)

1211. U.S. to 1865. 3. [V◀▶V] Surveys U.S. history through the Civil War which by itself meets the requirements of the Wyoming statutes providing for instruction in the provisions and principles of the constitutions of the United States and Wyoming. Students cannot receive credit for both HIST 1210 and 1211. (Offered each semester)

1220. United States History II. 3. Surveys U.S. history from reconstruction to recent past. Together with HIST 1210, it is the foundation for all U.S. history courses offered by the department. Students cannot receive credit for both HIST 1220 and 1221. (Offered based on sufficient demand and resources)

1221. U.S. From 1865. 3. [V◀▶V] Surveys U.S. history from the Civil War to the present and meets the requirements of the Wyoming statutes providing for instruction in the provisions and principles of the constitutions of

the U.S. and of Wyoming. Students cannot receive credit for both 1220 and 1221. (Offered spring semester and on sufficient demand and resources)

1250. History of Wyoming. 3. A study of Wyoming from its beginning to the present. Students cannot receive credit for both HIST 1250 and 1251. (Offered based on sufficient demand and resources)

1251. Wyoming History. 3. [V◀▶V] A survey which encourages an understanding of Wyoming history, how it relates to the history of the West and the rest of America and how it has influenced the present. An important component is to learn about the U.S. and the Wyoming constitutions and how these two documents have influenced Wyoming history. Students cannot receive credit for both HIST 1250 and 1251.

1290. History of the U.S. West. 3. An introductory survey of the American West, with consideration of developments in both the 19th and 20th centuries. (Normally offered fall semester)

1320. World History to 1750. 3. [CS,G◀▶H] A history of the world's peoples and societies from human prehistory to 1750, with an emphasis on the diversity and interconnectedness of human life in the past.

1330. World History since 1750. 3. [CS,G◀▶(none)] A history of the world's peoples and societies from 1750 to the present, with an emphasis on the diversity and interconnectedness of human life in the past. Cross listed with INST 1330.

2020. American Military History. 3. Surveys military experiences of U.S. from colonial period to the present. In addition to specific wars, examines military doctrines and political, social and economic forces that shaped conduct of war in American history. (Normally offered spring semester)

2040. Imperial China. 3. [CS,G◀▶(none)] Surveys China's social, intellectual, political, cultural, technological and ethnohistory from earliest historical period through the last imperial dynasty, and China's role in greater E. Asian and world history. Provides background for other Asia-related courses, and is part of year-long series; see HIST 2041. *Prerequisite:* 3 hours of history. (Offered based on sufficient demand and resources)

2041. Modern China. 3. Surveys China's social, intellectual, political, cultural, and ethnohistory from mid-1800s to the present. Themes include colonialism, emergence of nation-state, Communist party, Mao's socio-political agenda, post-Mao reforms, and China's role in Asia. Background for other Asia-related courses, and part of year-long series; see HIST 2040. (Offered once every other year). *Prerequisite:* 3 hours in history.

2050. Introduction to Public History. 3. Introduces the student to the non-teaching, professional uses of history. Topics for consideration include archival work, museum management, public information and publications, historic site development, oral history interviewing, preparation of government reports, historic preservation general concepts and historical programming. *Prerequisite:* 6 hours of history.

2060. Topics in History. 2-3 (Max. 6). Discusses special topics that fall outside traditional chronological and geographical framework of history; content varies from semester to semester in accordance with faculty interest and student demand. (Offered based on sufficient demand and resources)

2080 [4315]. Holocaust. 3. [CH◀▶(none)] Surveys the destruction of European Jewry, 1933-1945. Cross listed with RELI 2080. *Prerequisite:* HIST 1120.

2105 Medieval Europe in Film. 3. Historical depictions in films help to shape people's view of the past. Uses commercial films to study major themes in the development of western European civilization between 500 and 1500. Students view, discuss and write about films, learning to evaluate films historically and to view films critically, developing media literacy.

2120. Ancient Greece and the Near East. 3. Examines development of civilization in Eastern Mediterranean from prehistory to Alexander the Great. (Normally offered fall semester)

2130. Ancient Rome. 3. Studies history of the growth of Roman power from city-state to world power. (Normally offered spring semester)

2225. History of Christianity. 3. Traces Christianity from its beginnings to late 20th century. Cross listed with RELI 2225.

2230. The History of Russia to 1855. 3. General survey of modern Russian history from earliest times to 1855. (Normally offered fall semester)

2240. The History of Russia Since 1855. 3. General survey of modern Russian history from 1855 to the present. (Normally offered spring semester)

2250. American Religious History I (To 1865). 3. [CH,D◀▶(none)] Traces the history of religion in America through the Civil War. We will pay particular attention to the intertwining of religion and colonialism; the tension between emerging Protestant hegemony and religious pluralism; and the roles religion has played in justifying oppression and pursuing liberty in American history. Cross listed with RELI 2250.

2252. American Religious History II (1865-1945). 3. [CH,D◀▶(none)] Traces American religious history from the Civil War through WWII. Focuses on how race/ethnicity, class, gender, and national origin affected religion, and explores how Americans used religion in oppressing and liberating people; marking and erasing difference; and exporting values abroad as well as reforming society at home. Cross listed with RELI 2252.

2290. History of North American Indians. 3. [CH,D◀▶(none)] Studies American Indian history through 500 years and across the continent. Considers Indian political, social and economic continuity and change. Focuses on how Indian peoples experienced and responded to times of dramatic change. Cross listed with AIST 2290. (Normally offered spring semester)

2315. History of Non-Western Religions. 3. [CH,G◀▶(none)] Introduces students to religions outside the Judeo-Christian realm familiar in the west. Each religion analyzed in its world views, its ways of life, and in its social organization. History of each religion and its changes. Cross listed with RELI 2315.

2320. History of Islam. 3. [CH,G◀▶(none)] Focuses on the origins of Islam and its early formation, its growth and spread across the world, and its intellectual, spiritual and historical character. Time will also be spent on the formation of Islam in the modern world and how that impacts the views and actions of its members.

2360. African-American History. 3. [CH,D◀▶COM2] Surveys African-American history in America, particularly emphasizing issues of identity, class, and progress as well as exploring African-Americans' quest for full participation in American life. Cross listed with AAST 2360. (Offered based on sufficient demand and resources)

2370. Chicano History: Origins to 1900. 3. [CS,D◀▶(none)] General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with CHST/GEOG 2370.

2380. Latin American Civilizations. 3. [G◀▶(none)] Provides introduction to Latin American history, from colonial contacts to the present. Explores important themes and connections across the colonial and modern periods, such as race, national identity, foreign involvement, indigenous peoples' role in nation-states, religion, social movements, economic systems, and globalization.

2385. Chicano History : 1900 to Present. 3. General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with CHST 2385.

2389. History of Women in the American West. 3. [D◀▶(none)] Surveys the roots of society's marginal historical depiction of women in the American West from the colonial period through the twentieth century. From the perspective of race, class, ethnicity, and gender, the course focuses on the development of a multi-dimensional understanding of women's roles using an interdisciplinary approach. Cross listed with WMST 2389.

2460. Traditional Japan. 3. Surveys Japan's social, intellectual, political, cultural, technological and ethnohistory from earliest historical period to the 1800s. Topics include roles of China and Korea, the samurai warrior tradition, family structure, Buddhism and Shinto. Provides background for other Asia-related courses, and is part of a year-long series; see HIST 2461. *Prerequisite:* 3 hours of history. (Offered once every other year)

2461. Modern Japan. 3. Surveys Japan's social, intellectual, political, cultural, economic, technological and ethnohistory from the 1800s through the present. Topics include Japan's industrialization, Asian colonialism, post-WWII, and Japan as economic superpower. Provides background for other Asia-related courses, and is part of a year-long series; see HIST 2460. (Offered once every other year). *Prerequisite:* 3 hours in history.

2470. Civilization of India. 3-4 (Max. 4). Surveys Indian civilization from earliest times, including cultural aspects. (Offered based on sufficient demand and resources)

2500. The Impact of the Union Pacific on Wyoming History. 3. Students experience and interpret the impact of the building of the Union Pacific Railroad on the history and culture of Wyoming through the lens of three disciplinary perspectives. Students explore how the railroad impacted Wyoming geography, economic development and the people of the state through personal research projects. Cross listed with ECON 2500.

2700. Introduction to Museology. 3. [CH◀▶(none)] Explores the historical, cultural, and contemporary roles of museums and preservation institutions in society. Introduces students to the museum professions, collection and exhibition installation strategies, and ethical problems of governance and collection. Field trips to regional collections are included. Cross listed with ART/AMST/ANTH 2700. *Prerequisite:* WA.

3000. Plains Culture and History. 3. [D◀▶(none)] An ethnohistorical study of those Native peoples inhabiting the plains region of the U.S. from prehistory to the present. Cross listed with AIST 3000. *Prerequisite:* 3 hours of AIST courses.

3020 [4020]. Historical Methods. 3. [WB,L◀▶(none)] An introduction to the concepts, methods, and techniques used by historians. The main emphasis will be on methods of historical research and analysis, demonstrated through writing. Students will write a number of short papers building skills in various areas of research, analysis, and argumentation, and one longer paper reflecting individual research. Total pages for the semester: 30-45. *Prerequisites:* junior standing, 12 hours in history, and WA. (Offered based on sufficient demand and resources)

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with CLAS 3050. *Prerequisite:* WB.

3110. Modern Germany. 3. A cultural, social, and political history of German-Speaking Europe from 1789 to the present. *Prerequisite:* HIST 1120. (Offered every other year)

3210. The Islamic World in the Premodern Era. 3. Surveys the rise of Islam as a religion and as a political and cultural system from the time of Muhammad (7th century) to the apogee of the Ottoman Empire (17th century). Emphasizes the spread of Islam, dynasties and empires, dissenting groups, law and philosophy. *Prerequisite:* 6 hours of history or international studies.

3220. History of the Modern Middle East. 3. [G◀▶(none)] Surveys the Middle East from 1700 to the present. Emphasizes the demise of the Ottoman Empire, the rise of domination by European colonial powers, transformations in political, social, religious and cultural life, the rise of nationalist movements, the influence of oil, the growth of Islamist political groups and the Israeli-Palestinian conflict. Cross listed with RELI 3220. *Prerequisite:* 6 hours in history, religious studies or international studies.

3230. Early Christianity. 3. Considers the development of the Christian religion from a small Jewish sect to its place as the official religion of the Roman Empire and beyond. It examines the development of creeds, doctrines and institutions, placing them within their historical context. *Prerequisite:* RELI 1000, RELI/HIST 2225, or HIST 2113.

3235. Medieval Christianity. 3. Traces the development of 'Christendom' in Europe between about 500 - 1500 CE, concentrating on the Latin West. It examines the growth of Christian institutions and practices, the Church's role as sole governing entity, along with conflicts with secular governments as they developed in later centuries. Cross listed with RELI 3235. *Prerequisites:* RELI/HIST 2225, HIST 1110, or RELI 1000.

3240. Reformation and Englightenment Christianity. 3. The years between about 1500 and 1800 saw the permanent dismantling of Christianity in the West as a unified force, as Protestantism brought new ways of viewing the relationship between God and humanity. Once the fragmentation began, it accelerated repidly as Enlightenment thinking challenged Christianity in new and complex ways. Cross listed with: RELI 3240. *Prerequisites:* RELI 1000, RELI/HIST 2225.

3275. World Christianities. 3. [CH,G◀▶(none)] Examines the development of Christianity primarily in Africa, Asia and South America. Cross listed with RELI 3275. *Prerequisites:* WB and CH.

3400. Mongol Empire. 3. Examines the history of the Mongol Empire from a world history perspective. Major themes: structure of a nomadic empire, how that empire interacted with the various settled states it conquered and ramifications of the Mongol conquest on trade, technology, and social and intellectual developments across Eurasia, between the years 1200 to 1450 ce. *Prerequisite*: 6 hours of History.

3670. African Diaspora. 3. Examines process through which aspects of African culture have endured in Diaspora. Analyzes social relations between Diaspora Africans and non-African populations in N. and S. America, the Caribbean, Britain, Asia and the Mediterranean. Discusses cultural hybridization as a product of culture contact. Cross listed with AAST 3670. *Prerequisite:* AAST 1000, any AAST 2000-level course, or AAST/HIST 2360.

3880. Comparative History. 3. Explores comparative history from a variety of topics, such as colonialism, memory, nationalisms, frontiers, or cultural history. This course will introduce students to at least one of these themes from at least two regions, time periods, or groups of people to understand patterns and change in human societies through time. *Prerequisite:* completion of WA requirement.

4000. Indians of Wyoming. 3. [D◆▸(none)] Examines Native American culture in Wyoming from pre-history to the 21st century. Analyzes social, political, and economic developments of Native peoples of Wyoming before, during, and after contact with Europeans. Discusses interaction between these diverse societies and explores the changing relationships between Indians and Euro-Americans through the periods after contact. Cross listed with AIST 4000. *Prerequisite:* 6 hours of HIST or 6 hours of AIST.

4020. The Black West. 3. [CH,D◆▸(none)] This course explores the historical experiences and contributions of people of African descent to the American West from their earliest recorded presence in the 16th Century through the present. Cross listed with AAST 4020. *Prerequisites:* AAST 1000, any AAST 2000-level course, junior/senior standing, or three hours of any level of HIST course.

4030. Senior Capstone Seminar. 3 (Max. 6). [WC◆▸COM3] For undergraduate departmental majors; presented in a small group, non-lecture setting. Under close instructor supervision, students write reviews and essays, present critiques and oral reports and lead discussion on materials read by class. *Prerequisite:* advanced standing as a History major and HIST 3020; or advanced standing as History/SSSE concurrent major and either HIST 3020 or HIST 4055. (Offered based on sufficient demand and resources)

4050. Advanced Public History. 2-3 (Max. 6). Reading and practice in non-teaching professional uses of the discipline of history. Topics for consideration may include museum curatorial exercises, museum and historic site management, historical editing and publishing, programming for museums and other agencies dealing with history, site interpretation and preservation and private practice of public history. *Prerequisites:* HIST 2050, 6 hours of history courses, consent of instructor. (Offered based on sufficient demand and resources)

4055. Archival Research Methods. 3. Students will master advanced research strategies with interdisciplinary applications. Focuses on primary research and the development of advanced skills in information literacy, critical analysis of sources, verification of evidence, techniques for researching underdocumented populations, and interpretation of historical evidence. Advanced writing and oral presentation skills are emphasized. Dual listed with HIST 5055. *Prerequisite:* HIST 2050.

4060. Independent Study. 1-3 (Max. 6). Credit not to exceed 6 hours maximum, to be arranged in either European or American history. Primarily for juniors and seniors who can profit from independent work with minimal supervision. *Prerequisites:* 12 semester hours in history; written permission of instructor required. (Offered fall, spring and summer)

4075. Book History: Manuscripts. 3. Books in handwritten form are studied within their historical contexts: Mesopotamian and Indus Valley tablets; Egyptian, Greek, Roman, Jewish, Chinese, and Japanese scrolls; Early Christian, Medieval, Renaissance, Jewish, Islamic, Mayan, and Aztec codex manuscripts. Taught at the Rare Books Library, American Heritage Center, with manuscript facsimiles used as visual aides. *Prerequisites:* junior standing and 6 hours of history.

4076. Book History: Printed. 3. Printed books from their original start in China, through Gutenberg's "printing revolution" in Europe, and on up to the present are studied within their historical contexts. All class sessions will utilize original books from the fifteenth through twenty-first centuries held at the University's Rare Books Library, American Heritage Center. *Prerequisites:* junior standing and 6 hours of history.

4077. Book History: Topics. 3 (Max. 6). An in-depth, hands-on study of books within their historical contexts. The topic will vary each time and focus on a particular theme, time period, place, or culture. Taught at the Rare Books Library, American Heritage Center, using original books or facsimiles. May be repeated once for credit. Dual listed with HIST 5077. *Prerequisites:* junior standing, 6 hours of history (preferably with at least one of the other Book History courses).

4100. Early Medieval Europe. 3. Studies development of European civilization from decline of Rome to 12th century. Dual listed with HIST 5100. *Prerequisite:* HIST 1110. (Normally offered fall semester)

4110. The High Middle Ages. 3. Studies history of European civilization between the 12th and 15th centuries. Dual listed with HIST 5110. *Prerequisite:* HIST 1110 or 4100.

4112. History of the Medieval City. 3. After the fall of the Western Roman Empire, cities virtually disappeared from Western Europe. Around 1000 Europe began its rise to world prominence and cities contributed to that rise. Examines development of cities in medieval Europe and explores life within those cities. Dual listed with HIST 5112. *Prerequisite:* HIST 1110, 2100, 4100 or 4110.

4113. Medieval Religious Dissent. 3. Religious dissent in the Middle Ages included what some would call heresy, but also encompasses such marginal groups as Jews and witches. Examines development of orthodoxy and persecution of religious diversity between eleventh and 16th centuries within the historical context of the times. Dual listed with HIST 5113. Cross listed with RELI 4113. *Prerequisite:* HIST 1110, 4100, 4110 or 2225.

4120. Europe During the Renaissance. 3. Intensely studies European history in 14th and 15th centuries. *Prerequisite:* HIST 1110 or 2100. (Offered fall semester of even-numbered years)

4130. Europe During the Reformation. 3. Intensely studies European history in the 16th century. *Prerequisite:* HIST 1110 or 2100. (Offered spring semester of odd-numbered years)

4140. Europe During the Age of the Baroque. 3. Intensely studies European history in 17th century. *Prerequisite:* HIST 1110. (Offered fall semester of odd-numbered years)

4150. Europe During the Age of the Enlightenment. 3. Intensely studies European history in 18th century. *Prerequisite:* HIST 1120. (Offered spring semester of even-numbered years)

4170. Europe in the Nineteenth Century. 3. An intensive study of European history from the beginning of the nineteenth century through to the origins of the First World War in 1914. Dual listed with HIST 5170. *Prerequisite:* HIST 1120. (Offered based on sufficient demand and resources)

4174. Judaism from Ezra to Jesus. 3. This course focuses on the religious and historical development of Judaism during the centuries between the end of the Old Testament and the New Testament, studying the arrival of Greek and then Roman culture and the changes Judaism underwent during that time that endure today. Cross listed with RELI 4174. *Prerequisites:* WB or COM2, and RELI 1000 or RELI 2110.

4175. Judaism at the Dawn of Christianity. 3. Judaism is the only Mediterranean religion that was practiced in the ancient world as well as in Late Antiquity and beyond. This course helps students analyze how Judaism was able to change and adapt at key moments to provide its adherents with an active, living religion that addressed their needs. Cross listed with RELI 4175. *Prerequisites:* RELI 1000 or RELI 2110, and junior standing.

4180. Europe in the 20th Century. 3. An intensive study of European history from 1914 through 2000. Dual listed with HIST 5180. *Prerequisite:* HIST 1120 or 1330 or consent of the instructor.

4195. European Economic History. 3. History of European economies from the Renaissance through the Industrial Revolution of the 19th century. Focuses on the diverging paths of different economies in Europe, the role of agriculture in economic development, and the causes and nature of the Industrial Revolution. Dual listed with HIST 5195. *Prerequisite:* HIST 1120.

4270. France: Old Regime and Revolution. 3. The social, political and cultural history of early modern France (1598-1789), from the rise of the Absolutist state under Louis XIV to the outbreak of the Revolution. Explores the cultural and intellectual shifts from court culture at Versailles, to the Enlightenment, to the rise of revolutionary ideologies. Dual listed with HIST 5270. *Prerequisite:* HIST 1110.

4280. France Since 1814. 3. Encompasses the history of the political, social, economic, intellectual, ecclesiastical and military conflicts which shaped modern France. Dual listed with HIST 5280. *Prerequisite:* HIST 1120. (Offered based on sufficient demand and resources)

4290. History of the Soviet Union. 3. Depicts Russia under Communism, including particularly the development of totalitarian dictatorship in its political, economic, social and cultural manifestations. Dual listed with HIST 5290. *Prerequisite:* HIST 1110, 1120. (Offered based on sufficient demand and resources)

4305. Global History. 3. [G◀▶(none)] Thematically focused examinations of interactions or parallel phenomena in multiple world regions. Courses may be comparative (comparing two empires, or multiple revolutions), or may examine the growth of a particular trend globally (e.g. abolition of slavery), or the interaction of many states (e.g. the Cold War). Dual listed with HIST 5305. *Prerequisites:* Six credits of coursework in HIstory, Global and Area Studies, or Political Science.

4310. World War II in Europe. 3. Covers the origins, course and consequences of one of this century's defining global developments. World War II in Europe was a transnational development which shaped the world as it is known today. Dual listed with HIST 5310. *Prerequisites:* HIST 1110 and 1120.

4315. Central Europe and the Holocaust. 3. Offers students the opportunity to learn about the history of the Holocaust through travel to various sites in Central Europe where the events themselves occurred, such as Berlin, Warsaw, Krakow and Auschwitz-Birkenau. Dual listed with HIST 5315. *Prerequisite:* HIST 1120.

4320. Memory and National Identity in Twentieth Century Europe. 3. Europe in the twentieth century saw a century of unprecedented violence. Examines the public representation of such historical trauma through the concept of "collective memory" and focuses in particular on how memory has become a contested part of defining identity in modern-day Europe. Dual listed with HIST 5320. *Prerequisite:* HIST 1110.

4325. Sites of Memory: Berlin and Budapest. 1. Europe in the twentieth century saw a century of unprecedented violence. This class travels to Berlin, Germany and Budapest, Hungary over Spring Break to examine how these events have been remembered in museums and memorials. Recommended for students enrolled in HIST 4320, Memory and National Identity in Twentieth Century Europe. Dual listed with HIST 5325. *Prerequisite:* consent of instructor. Additional costs for travel and accommodation.

4330. European Gender and Women's History. 3. The experiences of women and the history of gender from the Renaissance through the 19th century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. Dual listed with HIST 5330. *Prerequisite:* HIST 1110.

4335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with RELI 4335 and WMST 4335, dual listed with HIST 5335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

4340 [4840]. The Social History of American Women. 3. [(none)◀▶H] Explores everyday life experiences of American women from the 17th century to the present. Focuses on the complex influence of gender, race and class in shaping those experiences; also, analyzes the ways in which women's dissatisfaction with their position in society formed the basis for the development of American feminism and led to the formation of an organized women's movement. Dual listed with HIST 5340. *Prerequisite:* ENGL/WMST/SOC 1080, HIST 1210/1211, 1220/1221.

4380. International History of Human Rights. 3. Examine the modern history of human rights in the global system, with particular empahsis on developments since the Second World War. Topics include the philosophy of human rights ideas; the histories of rights and rights violations in various regions; and the resulting international responses. Dual listed with HIST 5380; cross listed with INST 4380. *Prerequisites*: 9 hours of HIST or INST.

4400. Internship. 1-12 (Max. 12). The internship allows students to gain hands-on experience that will help to bridge the gap between history as an academic discipline and history as practiced in museums, public history agencies and historic sites. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Such planning will be done in consultation with the department's internship director. *Prerequisites:* 12 hours of history; completion of HIST 1210/1211 and 1220/1221, 1250/1251 and 4050 or advanced standing as a history major; consent of instructor.

4405. American Encounters to 1850. 3. [D◀▶H] The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African and Asian people from pre-contact through the mid-19th century. Dual listed with HIST 5405. *Prerequisite:* HIST 1210/1211 or consent of instructor.

4406. American Encounters from 1850. 3. [D◀▶H] The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African, and Asian people from the mid-19th century to the present. *Prerequisite:* HIST 1210/1211.

4410. America in an Early Modern World. 3. [CS,G◀▶H] Explores the American colonial experience as part of a worldwide process of colonial encounters with indigenous peoples between 1400 and 1800. Compares the experiences of early modern colonization in North and South America, Asia, and the Pacific and examines the nature of the colonial societies created by these cross-cultural relationships. Dual listed with HIST 5410. *Prerequisite:* An American or World History course.

4415. Entangled Worlds, Entangled Lives: Indigenous People and Colonizers Before 1850. 3. [CS, G◀▶H] The experiences of indigenous people and colonizers in Africa, Eurasia, the Americas, and the Pacific as they forged new colonial societies in the first global age (1400-1850). Emphasis throught the course will be on the often-overlooked role of indig-

enous people in creating colonial societies. Dual listed with HIST 5415. *Prerequisitie*: WA with a grade of C or above.

4440. The Sectional Conflict. 3. Topically examines differences, north and south, which had crystallized by 1850 into competing institutions and ideologies. Includes Jacksonian party ethos, world of slavery, divisive aspects of territorial expansion and social and economic tensions which attended America's burgeoning free-market system. Dual listed with HIST 5440. *Prerequisite:* HIST 1210/1211. (Offered based on sufficient demand and resources)

4450. The Civil War and Reconstruction. 3. Studies crisis of the Union, 1861- 1877. Examines experiences of both the North and South during the Civil War and restoration of the Union after the war. Dual listed with HIST 5450. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered based on sufficient demand and resources)

4460. Post-Civil War America: The Gilded Age. 3. Intensively covers economic, cultural and political developments which marked the U.S. in post-Civil War era, such as rise of industry, emergence of distinctive national culture and party struggles shaping America's Gilded Age. Dual listed with HIST 5460. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered based on sufficient demand and resources)

4462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the various contacts between American Indians and Europeans and considers what the American Revolution meant to the continent's Native peoples. Dual listed with HIST 5462; cross listed with AIST 4462. Prerequisite: HIST/AIST 2290.

4463. American Indian History 1783-1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement and also the manifold changes that accompanied moving west. Dual listed with HIST 5463; cross listed with AIST 4463. Prerequisite: HIST/AIST 2290.

4464. American Indians in the Twentieth Century. 3. Surveys the history of American Indians during the twentieth century. Examines the development of new cultural, social and political forms that help create an American Indian identity. Dual listed with HIST 5464; cross listed with AIST 4464. Prerequisite: HIST/AIST 2290.

4465 [4650]. Topics in American Indian History. 3. Provides topical approach to American Indian history. Through extensive readings and thorough class discussion, students build on previous course work in the field. Features best recent studies on American Indians in 19th and 20th centuries. Limited enrollment. Dual listed with HIST 5465. *Prerequisites:* HIST 2290 and consent of instructor. (Offered based on sufficient demand and resources)

4466. American Indian Ethnohistory. 3. Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Cross listed with AIST 4466. Dual listed with HIST 5466. *Prerequisite:* ANTH 2210/AIST 2210 or HIST 2290/AIST 2290.

4468. American Indians in the North American West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, the history of American Indians in the West is examined, with particular emphasis on the Great Plains and California. Cross listed with AIST 4468; dual listed with HIST 5468. *Prerequisite:* HIST/AIST 2290.

4470. The Birth of Modern America, 1890-1929. 3. Studies political and diplomatic developments in the U.S. in the wake of industrialization and massive immigration. Some attention to cultural and social themes. Emphasizes shifting nature of reform between depression of the 1890s and that of the 1930s. Dual listed with HIST 5470. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third fall semester)

4475 [4670]. American Environmental History. 3. Explores history of American attitudes and actions toward the land and natural resources. Dual listed with HIST 5475. *Prerequisite:* 6 hours of history. (Offered every fourth semester)

4480. Growth of Modern America, 1929-1960. 3. Studies political and diplomatic developments in the U.S. in Depression, World War II and early Cold War periods. Some attention to cultural and social themes. Emphasizes economic crisis, growth of government, reform traditions, anti-communism and civil rights. Dual listed with HIST 5480. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third semester)

4485. U.S. Latino Diaspora. 3. Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with CHST/INST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.

4490. Modern America, 1960-Present. 3. Studies political and diplomatic aspects of the U.S. since 1960. Emphasizes impact of Cold War, social and political tensions at home, civil rights and government policies. Dual listed with HIST 5490. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third semester)

4492. Revolutions in Latin America. 3. [CS,G◀▶(none)] Explores the meaning and impact of revolution in Latin America's modern history, focusing on political ideology, cultural expression, foreign relations, human rights, and globalization. Offers in-depth analysis of revolutions from the early nineteenth century to the present. Cross listed with CHST 4492; dual listed with HIST 5492. *Prerequisite:* 3 hours of relevant course work in HIST (e.g., 2290, 2380, 4495, 4496).

4495 [4720]. Borderlands in Latin America. 3. Examines borderlands and frontiers in Latin American history, focusing on the U.S.-Mexico border region, the Southern Cone, and the Caribbean. Key issues include cultural contact zones, colonialism, military expansion and conflict, and nation-building. Dual listed with HIST 5495.

4496 [4800]. History of Mexico. 3. Intensive course in Mexican development. Emphasizes the 20th century especially the Mexican Revolution of 1910, showing how this nation transformed itself into a modern nation-state. Includes diplomatic relations with the U.S., incorporation of Indians, church-state relations, uses of land and other natural resources, role of the military and growth of Mexican nationalism. Cross listed with CHST 4496. Dual listed with HIST 5496. *Prerequisite:* HIST 2380. (Normally offered fall semester)

4505 [4500]. The Old South, 1820-1861. 3. Studies history of the South from emergence of southern identity to the Civil War. Emphasizes southern society and culture. Dual listed with HIST 5505. *Prerequisite:* HIST 1210/1211. (Offered based on sufficient demand and resources)

4510 [4950]. Modern East Asia. 3. Focuses on the emergence of the modern East Asian states China, Japan, Korea and Vietnam as individual states and members of this important region historically and in contemporary era, understanding the emergence of those states as responses to internal forces and external pressures such as imperialism, nationalism, Com-

munism and Capitalism. Dual listed with HIST 5510. *Prerequisite:* 6 hours of history. (Offered based on sufficient demand and resources)

4515 [4710]. American Legal History. 3. An intensive course in the history of American law, the judicial system, the legal profession and legal administration from colonial times to the present. Dual listed with HIST 5515. *Prerequisite:* HIST 1210/1211, 1220/1221 and/or consent of instructor. (Offered in spring semester of even-numbered years)

4525 [4700]. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans and Anglo Americans from the fifteenth century to the present. Dual listed with HIST 5525; cross listed with CHST/AIST 4525. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered spring semester)

4530 [4630]. 19th Century American West. 3. A study of the westward movement with emphasis on the trans-Mississippi West. Dual listed with HIST 5530. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered fall semester)

4535. History of Oil. 3. Intensive study of the history of oil development throughout the world. Emphasizes comparative studies of the industry as it developed in various parts of the world and during various time periods, from pre-historic times to the present. The Wyoming oil/energy mineral history is an important component. Dual listed with HIST 5535. *Prerequisite:* 6 hours in history.

4540 [4640]. 20th Century American West. 3. A study of the modern American West, with consideration of social, economic and political continuity and change. Dual listed with HIST 5540. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered spring semester)

4545. The Multicultural West. 3. Explores the American West as a meeting ground of diverse peoples and their diverse cultures. Focuses on the sustained cross-cultural interchange between Native Americans, Euro-Americans, African Americans, Latin Americans, and Asian Americans from trans-Appalachia to the Pacific Coast from the eighteenth century to the present. Dual listed with HIST 5545. *Prerequisite:* Any history or social science course.

4546. Agriculture: Rooted in Diversity. 3. [C,D◀▶(none)] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/CHST/ENGL/FCSC/AMST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4560. American Social History in the 20th Century. 3. Explores history of social mobility and conflict in 20th century. Emphasizes impact of industrialization, rapid urbanization, massive immigration, ethnic minorities, race, religion, women and the family, painting and architecture. Dual listed with HIST 5560. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered every fourth semester)

4582. 20th Century U.S. Foreign Relations. 3. Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic, racial, and gender issues. Cross listed with INST 4582; dual listed with HIST 5582. *Prerequisite:* HIST 1221.

4585 [4680]. Conference on U. S. History. 1-3 (Max. 6). Reading and writing course. Allows advanced students to investigate shifting ideas about important topics in 20th century American history. Primary focus varies from semester to semester, but will be designated in the class schedule. Dual listed with HIST 5585. *Prerequisite:* 6 hours of American history. (Offered based on sufficient demand and resources)

4610. Seminar Topics in the History of Wyoming I. 3. An intensive research and writing course dealing with topics in the period before statehood in 1890. *Prerequisite:* HIST 1250/1251. (Offered based on sufficient demand and resources)

4620. Seminar Topics in the History of Wyoming II. 3. Allows students to do intensive research and writing dealing with topics in Wyoming history from 1890 to present. *Prerequisite:* HIST 1250/1251. (Offered based on sufficient demand and resources)

4665. History and Philosophy of American Education. 3. Provides cultural, philosophical, and historical perspectives drawn from the American experience and centered in the American ideology of equality of educational opportunity. Major trends and philosophies that have developed, and are developing, in American education will be shared through discussion, presentations, and written projects. Dual Listed with HIST 5665. Cross listed with EDCI 4665. *Prerequisite*: Completion of WA with C or better.

4690. Research Topics in History. 1-4 (Max. 6). Provides opportunity for undergraduate research in selected topics in History. *Prerequisites:* 18 credit hours of History courseowrk and consent of instructor. (Offered based on sufficient demand and resources)

4965. Senior Thesis. 3. Working closely with a faculty advisor, a history major will develop a research proposal that, after approval by the History department faculty, will lead to in-depth reasearch and writing, producing a minimum 50-page thesis that demonstrates an excellent grasp of historical methods and a high degree of writing skill. *Prerequisites:* History major, junior or senior standing, 24 credits of History courses, faculty nomination, and a minimum 3.7 History GPA.

4990 [4080]. Topics in _____. 1-6 (Max. 12). Affords students opportunity to study in- depth various topics in history not offered in regular courses or independent study. *Prerequisite:* 6 hours of history. (Offered based on sufficient demand and resources)

5000. Indians of Wyoming. 3. Examines Native American culture in Wyoming from pre-history to the 21st century. Analyzes social, political, and economic developments of Native peoples of Wyoming before, during, and after contact with Europeans. Discusses interaction between these diverse societies and explores the changing relationships between Indians and Euro-Americans through the periods after contact. Dual listed with HIST 4000; cross listed with AIST 4000. *Prerequisite:* 6 hours of HIST or AIST.

5055. Archival Research Methods. 3. Students master advanced research strategies with interdisciplinary applications. Focuses on primary document research and the development of advanced skills in information literacy, critical analysis of sources, verification of evidence, techniques for researching under-documented populations, and interpretation of historical evidence. Advanced writing and oral presentation skills are emphasized. *Prerequisite:* HIST 2050.

5070. History of Books. 3. A chronological survey traces written communication from the ancient world to the present. Within this historical framework, various topics that cross-cut tie periods and countries are explained. A substantial part of the class includes hands-on experience with rare books at the American Heritage Center. *Prerequisites:* 6 hours of history and junior standing.

5075. Book History: Manuscripts. 3. Books in handwritten form are studied within their historical contexts: Mesopotamian and Indus Valley tablets; Egyptian, Greek, Roman, Jewish, Chinese, and Japanese scrolls; Early Chris-

tian, Medieval, Renaissance, Jewish, Islamic, Mayan, and Aztec codex manuscripts. Taught at the Rare Books Library, American Heritage Center, with manuscript facsimiles used as visual aids. *Prerequisites:* junior standing and 6 hours of history.

5076. Book History: Printed. 3. Printed books from their original start in China, through Gutenberg's printing revolution in Europe, and on up to the present are studied within their historical contexts. All class sessions will utilize original books from the fifteenth through twenty-first centuries held at the University's Rare Books Library, American Heritage Center. *Prerequisites:* junior standing and 6 hours of history.

5077. Book History: Topics. 3. An in-depth, hands on study of books within their historical contexts. The topic varies each time, and focuses on a particular theme, time period, place, or culture. Taught at the Rare Books Library, American Heritage Center, using original books or facsimiles. May be repeated once for credit. *Prerequisites:* junior standing, or 6 hours of history (preferably with at least one of the other Book History courses).

5100. Early Medieval Europe. 3. The study of the development of European civilization from the decline of Rome to the twelfth century. Dual listed with HIST 4100. *Prerequisite:* HIST 1110.

5110. The High Middle Ages. 3. Studies history of European civilization between the 12th and 15th centuries. Dual listed with HIST 4100. *Prerequisite:* HIST 1110.

5112. History of the Medieval City. 3. After the fall of the Western Roman Empire, cities virtually disappeared from Western Europe. Around 1000, Europe began its rise to world prominence, and the birth of the cities contributed to that rise. This course examines the development of cities in medieval Europe and explores life within those cities. Dual listed with HIST 4112. *Prerequisite:* HIST 1110, 4100, or 4110.

5113. Medieval Religious Dissent. 3. Religious dissent in the Middle Ages included what we would call heresy, but also encompasses such marginal groups as Jews and witches. This course examines development of orthodoxy and the persecution of religious diversity between the 11th and 16th centuries. It also studies the historical context of the times. Dual listed with HIST 4113; cross listed with RELI 4113. *Prerequisite:* HIST 1110, 4100, or 4110.

5170. Europe in the 19th Century. 3. An intensive study of European history from the beginning of the nineteenth century through to the origins of the First World War in 1914. Dual listed with HIST 4170. *Prerequisite:* HIST 1120.

5180. Europe in the 20th Century. 3. An intensive study of European history from 1914 through 2000. Dual listed with HIST 4180. *Prerequisite:* HIST 1120 or 1330 or consent of instructor.

5195. European Economic History. 3. The history of European economies from the Renaissance through the Industrial Revolution of the nineteenth century. Focuses on the diverging paths of different economies in Europe, the role of agriculture in economic development, and the causes and nature of the Industrial Revolution. Dual listed with HIST 4195. *Prerequisite:* HIST 1110.

5270. France: Old Regime and Revolution. 3. The social, political and cultural history of early modern France (1598-1789), from the rise of the Absolutist state under Louis XIV to the outbreak of the Revolution. Explores the cultural and intellectual shifts from court culture at Versailles, to the Enlightenment, to the rise of revolutionary ideologies. *Prerequisite:* HIST 1110.

5280. France Since 1814. 3. History of the political, social, economic, intellectual, ecclesiastical, and military conflicts which shaped modern France. Dual listed with HIST 4280. *Prerequisite:* HIST 1120, or HIST 1210.

5290. History of the Soviet Union. 3. Russia under Communism, including particularly the development of totalitarian dictatorship in its political, economic, social, and cultural manifestations. Dual listed with HIST 4290. *Prerequisite:* HIST 1110 and 1120.

5305. Global History. 3. Thematically focused examinations of interactions or parallel phenomena in multiple world regions. Courses may be comparative (comparing two empires, or multiple revolutions), or may examine the growth of a particular trend globally (e.g. abolition of slavery), or the interaction of many states (e.g. the Cold War). Dual listed with HIST 4305. *Prerequisite:* graduate student standing.

5310. World War II in Europe. 3. Covers the origins, course, and consequences of one of this century's defining global developments. World War II in Europe was a transnational development which shaped the world as we know it today. Dual listed with HIST 4310. *Prerequisites:* HIST 1110 and 1120.

5315. Central Europe and the Holocaust. 3. Offers students the opportunity to learn about the history of the Holocaust as they visit various sites in Central Europe where the events themselves occurred, such as Berlin, Warsaw, Krakow and Auschwitz-Birkenau. Dual listed with HIST 4315. *Prerequisite:* HIST 1120.

5320. Memory and National Identity in 20th Century Europe. 3. Europe in the twentieth century saw a century of unprecedented violence. Examines the public representation of such historical trauma through the concept of "collective memory" and focuses in particular on how memory has become a contested part of defining national identity in modern-day Europe. *Prerequisite:* HIST 1120.

5325. Sites of Memory: Berlin and Budapest. 1. Europe in the twentieth century saw a century of unprecedented violence. This class travels to Berlin, German and Budapest, Hungary over Spring Break to examine how these events have been remembered in museums and memorials. Recommended for students enrolled in HIST 4320. "Memory and National Identity in Twentieth Century Europe". Additional costs for travel and accommodations. *Prerequisites:* consent of instructor.

5330. European Gender History. 3. The experiences of women and the history of gender from the Renaissance through the nineteenth century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. Dual listed with HIST 4530; cross listed with WMST 5330. *Prerequisite:* HIST 1110.

5335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with WMST 5335, dual listed with HIST 4335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

5340. The Social History of American Women. 3. Explores the everyday life experiences of American women from the seventeenth century to the present with a focus on the complex influence of gender, race, and class in shaping those experiences. The course then turns to an analysis of the ways in which woman's dissatisfaction with the position in society formed American feminism and lead to the formation or an organized women's movement. Dual listed with HIST 4340. *Prerequisites:* ENGL/WMST/SOC 1080, HIST 1210/1211, 1220/1221.

5380. International History of Human Rights. 3. Examine the modern history of human rights in the global system, with particular empahsis on developments since the Second World War. Topics include the philosophy of human rights ideas; the histories of rights and rights violations in various regions; and the resulting international responses. Dual listed with HIST 4380; cross listed with INST 5380. *Prerequisites*: 9 hours of HIST or INST.

5381. Seminar in Recent United States History. 3 (Max. 12).

5400. Graduate Topics in History. 1-6 (Max. 12). Opportunity to study in-depth various topics in history not offered in regular graduate seminars or graduate reading courses. *Prerequiste*: graduate standing.

5405. American Encounters to 1850. 3. The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African, and Asian people from pre-contact to the mid-19th century. *Prerequisite:* HIST 1210/1211.

5406. American Encounters from 1850. 3. The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African, and Asian people from the mid-19th century to the present. Dual listed with HIST 4406. *Prerequisite:* HIST 1210/1211.

5410. America in an Early Modern World. 3. Explores the American colonial experience as part of a worldwide process of colonial encounters with indigenous peoples between 1400 and 1800. Compares the experiences of early modern colonization in North and South America, Asia, and the Pacific and examines the nature of the colonial societies created by these cross-cultural relationships. Dual Listed with HIST 4410. *Prerequisite:* An American or World History course.

5415. Entangled Worlds, Entangled Lives: Indigenous People and Colonizers Before 1850. 3. The experiences of indigenous people and colonizers in Africa, Eurasia, the Americas, and the Pacific as they forged new colonial societies in the first global age (1400-1850). Emphasis throught the course will be on the often-overlooked role of indigenous people in creating colonial societies. Dual listed with HIST 4415.

5440. The Sectional Conflict. 3. Topically examines differences, north and south, which had crystallized by 1850 into competing institutions and ideologies. Includes Jacksonian party ethos, the world of slavery, the divisive aspects of territorial expansion and social and economic tensions which attended America's burgeoning free-market system. Dual listed with HIST 4440. *Prerequisite:* HIST 1210.

5450. The Civil War and Reconstruction. 3. A study of the crisis of the Union, 1861-1877. Examination of the experiences of both the North and the South during the Civil War and restoration of the Union after the war. Dual listed with HIST 4450. *Prerequisite:* HIST 1210 and 1220/1221.

5460. Post-Civil War America: The Gilded Age. 3. An intensive study in the economic, cultural, and political developments which marked the U.S. in post-Civil War era, the rise of industry, the emergence of a distinctive national culture and the party struggles that shaped America's Gilded Age. Dual listed with HIST 4460. *Prerequisite:* HIST 1210 and 1220.

5462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the various contacts between American Indians and Europeans and considers what the American revolution meant to the continent's Native peoples. Dual listed with HIST 4462; cross listed with AIST 5462. *Prerequisites:* HIST/AIST 2290.

5463. American Indian History to 1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement and also the manifold changes that accompanied Indians moving west. Dual listed with HIST 4463; cross listed with AIST 5463. *Prerequisite:* HIST/AIST 2290.

5464. American Indians in the 20th Century. 3. Surveys the history of American Indians during the twentieth century. Examines the development of new cultural, social and political forms that help create an American Indian identity. Dual listed with HIST 4464; cross listed with AIST 5464. *Prerequisite:* HIST/AIST 2290.

5465. Topics in American Indian History. 3. Provides topical approach to American Indian history. Through extensive readings and thorough class discussion, students build upon previous course work in the field. The best recent studies on American Indians in the 19th and 20th centuries are featured. Limited enrollment. Dual listed with HIST 4465. *Prerequisite:* HIST 2290.

5466. American Indian Ethnohistory. 3. Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Dual listed with HIST 4466; cross listed with AIST 5466. *Prerequisite:* ANTH/AIST 2210 or HIST/AIST 2210.

5468. American Indians in the North American West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, this course examines the history of American Indians in the West, with particular emphasis on the Great Plains and California. Dual listed with HIST 4468; cross listed with AIST 4468/5468. *Prerequisite:* HIST/AIST 2290.

5470. The Birth of Modern America, 1890-1929. 3. Studies political and diplomatic developments in the U.S. in the wake of industrialization and massive immigration. Some attention to cultural and social themes. Emphasizes shifting nature of reform between the depression of the 1890s and that of the 1930s. Dual listed with HIST 4470. *Prerequisites:* HIST 1210/1211 and 1220/1221.

5475. American Environmental History. 3. History of American attitudes and actions toward the land and natural resources. Dual listed with HIST 4475. *Prerequisite:* 6 hours of history.

5480. Growth of Modern America, 1929-1960. 3. A political and diplomatic overview of the United States in Depression, World War II and early Cold War periods. Some attention to cultural and social themes. Emphasis on economic crisis, growth of government, reform traditions, anti-communism, and civil rights. Dual listed with HIST 4480. *Prerequisites:* HIST 1210 and 1220.

5490. Modern America, 1960 to Present. 3. A political and diplomatic overview of the United States since 1960 with emphasis on impact of Cold War social and political tensions at home, civil rights, and government policies. Dual listed with HIST 4490. *Prerequisites:* HIST 1210 and 1220.

5492. Revolutions in Latin America. 3. Explores the meaning and impact of revolution in Latin America's modern history, focusing on political ideology, cultural expression, foreign relations, human rights, and globalization. Offers in-depth analysis of revolutions from the early nineteenth century to the present. Dual listed with HIST 4492. *Prerequisite:* 3 hours of relevant course work in HIST (e.g., 2290, 2380, 4495, 4496).

5495. Borderlands in Latin America. 3. Examines borderlands and frontiers in Latin American history, focusing on the U.S.-Mexico border region, the Southern Cone, and the Caribbean. Key issues include cultural contact

zones, colonialism, military expansion and conflict, and nation-building. Dual listed with HIST 4495.

5496. History of Mexico. 3. Intensive course in Mexican development. Emphasizes the 20th century especially the Mexican Revolution of 1910, showing how this nation transformed itself, into a modern nation state. Includes diplomatic relations with the U.S., incorporation of Indians, church-state relations, uses of land and other an natural resources, role of the military and growth of Mexican nationalism. Dual listed with HIST 4496; cross listed with CHST 4496. *Prerequisite:* HIST 2380.

5500. Readings in Women's Studies. 3. An interdisciplinary course at the graduate level focusing on feminist criticism and theory, which draws on current debates in feminist analysis from the general areas of history, literature, and social science, to inform students of reformulations of research and unresolved issues. Dual listed with WMST 5500. *Prerequisites:* graduate status, 12 hours of 4000-level work.

5505. The Old South, 1820-1861. 3. The history of the South from the emergence of southern identity to the Civil War, with emphasis on southern society and culture. Dual listed with HIST 4505. *Prerequisite:* HIST 1210.

5510. Modern East Asia. 3. Focuses on the emergence of the modern East Asian states China, Japan, Korea and Vietnam as individual states and members of this important region historically and in contemporary era, understanding the emergence of those states as responses to internal forces and external pressures such as imperialism, nationalism, Communism and Capitalism. Dual listed with HIST 4510. *Prerequisite:* 6 hours of history.

5515. American Legal History. 3. An intensive study in the history of American law, the judicial system, the legal profession, and legal administration from colonial times to the present. Dual listed with HIST 4515. *Prerequisite:* HIST 1210, 1220 and/or consent of instructor.

5525. American Southwest. 3. Explores the Southwest as a location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Indians and Anglo Americans from the fifteenth century to the present. Dual listed with HIST 4525. *Prerequisites:* HIST1210/1211, 1220/1221.

5530. 19th Century American West. 3. A study of the westward movement with emphasis on the trans-Mississippi West. Dual listed with HIST 4530. *Prerequisite:* HIST 1210 and 1220.

5535. History of Oil. 3. An intensive study in the history of oil development throughout the world. Emphasizes comparative studies of the industry as it developed in various parts of the world and during various time periods, from pre-historic times to the present. The Wyoming oil/energy mineral history will be an important component of the course. Dual listed with HIST 4535. *Prerequisite:* 6 hours in history.

5540. 20th Century American West. 3. A study of the modern American West, with consideration of social, economic and political continuity and change. Dual listed with HIST 4540. *Prerequisites:* HIST 1210 and 1220.

5545. The Multicultural West. 3. Explores the American West as a meeting ground of diverse peoples and their diverse cultures. Focuses on the sustained cross-cultural interchange between Native Americans, Euro-Americans, African Americans, Latin Americans, and Asian Americans from trans-Appalachia to the Pacific Coast from the eighteenth century to the present. Dual listed with HIST 4545.

5555. American Encounters. 3. Examines the centrality of cross-cultural interchange in American history by focusing on a series of critical encounters between American, European, African, and Asian people from the 16th century to the present. *Prerequisite:* graduate standing.

5560. American Social History in the 20th Century. 3. History of social mobility and conflict in the 20th century. Special emphasis on impact of industrialization, rapid urbanization, massive immigration, ethnic minorities, race, religion, women and the family, painting, and architecture. Dual listed with HIST 4560. *Prerequisites:* HIST 1210 and 1220.

5582. 20th Century U.S. Foreign Relations. 3. Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic racial and gender issues. Dual listed with HIST 4582; cross listed with INST 5582. *Prerequisite:* HIST 1221.

5585. Conference on U.S. History. 1-3 (Max. 6). A reading and writing course designed to allow advanced students to investigate shifting ideas about important topics in 20th century American history. Primary focus varies from semester to semester, but will be designated in the class schedule. Dual listed with HIST 4585. *Prerequisite:* 6 hours of American history.

5600. Graduate Readings. 1-6 (Max. 12). Fulfills two purposes in our graduate program in history. It allows students to do independent directed reading in preparation for their graduate examination in history and provides students with a flexible alternative to their programs to meet and complete requirements. *Prerequisite:* 15 semester hours of history.

5605. Conference on Wyoming and the West. 1-4 (Max. 9). *Prerequisite:* consent of instructor.

5612. Archives III. 3 (Max. 6). Designed as an internship to provide students hands-on experience in an archival setting. With guidance provided by the instructors, students are expected to arrange and describe a collection, understand the basics of cataloging, and work with researchers in the reference area. Students are asked to complete projects in each area, and are required to turn in work logs or journals regarding the internship experience. *Prerequisite:* HIST 4040/5040, HIST 4042/5042 and 18 hours of history.

5615. Conference on Early American History. 1-4 (Max. 9). *Prerequisite:* consent of instructor.

5620. Conference on Middle-Period and United States History. 1-4 (Max. 9). *Prerequisite:* consent of instructor.

5630. Seminar on Western American History. 3. *Prerequisite:* consent of instructor.

5640. Conference on American Indian History. 1-4 (Max. 9). An intensive readings course using some of the best Indian history written in the last twenty years. *Prerequisite:* consent of instructor.

5645. Seminar on American Indian History. 3. Research seminar on American Indian history. The focus of the seminar may vary, but emphasis will usually be given to American Indians of the western United States in the nineteenth and twentieth centuries. *Prerequisite:* consent of instructor.

5650. Conference on Medieval European History. 1-4 (Max. 9). *Prerequisite:* consent of instructor.

5655. Seminar on Medieval European History. 3 (Max. 9). *Prerequisite:* consent of instructor.

5660. Conference on Early Modern Europe. 1-4 (Max. 9). The student, in consultation with the instructor, chooses a topic on which he/she reads extensively. The instructor provides bibliographical guidance. Normally the student discusses the reading at length with the instructor once a week. Written analysis of the reading may also be required. The course may be offered to a group of students who need extensive reading to go with the research experience they are receiving in seminars. *Prerequisite:* 14 semester hours in history and consent of instructor.

5665. History and Philosophy of American Education. 3. Provides cultural, philosophical, and historical perspectives drawn from the American experience and centered in the American ideology of equality of educational opportunity. Major trends and philosophies

that have developed, and are developing, in American education will be shared through discussion, presentations, and written projects. Dual Listed with HIST 4665. Cross listed with EDCI 5665. *Prerequisites*: Graduate student status; priority enrollment given to students registered in the C&I/Curriculum Studies area.

5670. Seminar on Early American History. 3. *Prerequisite:* consent of instructor.

5675. Seminar on Middle-Period U.S. History. 3. *Prerequisite:* consent of instructor.

5680. Seminar on Recent U.S. History. 3. *Prerequisite:* consent of instructor.

5685. Conference on European 19th and 20th Century History. 1-4. Available for a maximum of 9 hours. *Prerequisite:* consent of instructor.

5690. Seminar on European History. 3. Available for a maximum of 9 hours. *Prerequisite:* consent of instructor.

5695. Conference on English History. 1-4 (Max. 9). The student, in consultation with the instructor, chooses a topic on which he/she reads extensively. The instructor provides bibliographical guidance. Normally the student discusses the reading at length with the instructor once a week. Written analysis of the reading may also be required. May be offered to a group of students who need extensive reading to go with the research experience they are receiving in seminars. *Prerequisite:* 14 semester hours in history and consent of instructor.

5700. Seminar on Cultural History. 3. Examines the multiple ways in which historians and anthropologists have approached the concept of culture. Readings include both case studies and theoretical writings from different schools of cultural studies, ranging from the French Annales School to Postmodernism. Topics to be covered include popular culture, microhistory, gender and discourse theory. *Prerequisite:* graduate standing.

5800. Conference on Latin American History. 1-4 (Max. 9). *Prerequisite:* consent of instructor.

5810. Seminar on Latin American History. 1-4 (Max. 12). *Prerequisite:* consent of instructor.

5880. History Theory. 3. *Prerequisite:* consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Designed for students involved in research for their dissertation. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Languages— Modern and Classical

231 Hoyt Hall, 766-4177
FAX: (307) 766-2727
Web site: www.uwyo.edu/modlang
Department Chair: Joy Landeira

Professors:

PHILIP HOLT, B.A. St. John's College 1969; Ph.D Stanford University 1976; Professor of Classics 2005, 1993, 1987.

JOY LANDEIRA, B.A. University of Wyoming 1973; M.A. 1975; Ph.D University of Colorado, Boulder 1981. Professor of Spanish 2015. Department Chair.

HANNELORE MUNDT, Staatsexamen, Rheinisch-Westfalische Technische Hochschule Aachen 1977; Ph.D. University of California-Irvine 1984; Professor of German 2004, 1998, 1996.

Associate Professor:

KHAMA-BASSILI TOLO, G3: Gradué en Pédagogie Appliquée, Option: Francais-Linguistique Africaine, Université Nationale du Zaire 1976; L2: Licencié en Pédagogie Appliquée, Option: Francais, 1978; M.A. Vanderbilt University 1986; Ph.D. 1989; Associate Professor of French 1996, 1990.

Assistant Professors:

EKATERINA ALEXANDROVA, B.A. Saint Jousephs University 2003; M.A. Dartmouth College 2004; Ph.D. University of Pennsylvania 2012; Assistant Professor of French 2012.

IRENE CHECA-GARCIA, B.A. University of Granada 1997; M.A. Linguistics University of Granada 2000; Ph.D. Universidad de Alemeriá 2004; Assistant Professor of Spanish 2012.

CONXITA DOMÈNECH, B.A. Universitat Autònoma de Barcelona 1990; M.A. 1992; M.A. University of Colorado Boulder 2006; Ph.D. 2010; Assistant Professor of Spanish 2011.

REBECCA E. STEELE, B.A. Leibnitz-Academie 2001; M.A. Rutgers, The State University of New Jersey 2008; Ph.D. 2009; Assistant Professor of German 2009, 2012.

Senior Professional Lecturer:

JOSEPH KRAFCZIK, B.A. University of Wyoming 1983; M.A. University of Michigan 1986; Senior Professional Lecturer in Russian 2005, 1988.

Senior Academic Professional Lecturer:

LAURA DE LOZIER, B.A. Beloit College 1990; M.A. University of Wisconsin 1992; Ph.D. 2002; Senior Academic Professional Lecturer in Latin 2006; Assistant Department Chair.

Academic Professional Lecturers:

PETRA HEINZ, M.A. Ludwig-Maximilian-Unviersitaet 1990; Assistant Academic Professonal Lecturer in ESL 2013.

JENNIFER LAVANCHY, B.A. University of Wyoming 2004; M.A. 2006, 2008; Assistant Academic Professional Lecturer in Spanish 2011.

MARK W. PERSON, B.A. University of Wyoming 1983; M.A. 1986; Associate Academic Professional Lecturer in German 2008.

BÉNÉDICTE SOHIER, B.A. Stephen F. Austin State University 2006; M.A. Indiana University Bloomington 2008; Associate Academic Professional Lecturer in French 2015, 2009.

YAN ZHANG, B.A. Harbin Institute of Technology 2000; M.A. Heilongjiang Provincial Academy of Social Sciences 2002; Associate Academic Professional Lecturer in Chinese 2011, 2006.

Temporary Lecturers:

Roland Akpovo, Christian Greaser, Sonia Rodriguez-Hicks, Xuan-Xabier Huynh, Comlan Igor, Noah Miles, Mary Katherine Scott

Professors Emeriti:

M. Ian Adams, Lewis Bagby, Lowell A. Bangerter, Klaus D. Hanson, Francis S. Heck, Walter G. Langlois, Carlos Mellizo-Cuadrado, Jean-Louis G. Picherit, Pavel Sigalov, Duane Rhoades

The Modern and Classical Languages department offers work leading to the B.A. degree with majors and minors in French, German, Russian and Spanish, or concentrations for the B.A. in humanities/fine arts. A minor is offered in classical civilizations, Chinese, Latin and Japanese. The M.A. is available in French, German and Spanish. Courses are also offered in literature in translation.

Foreign Language Requirements

All candidates for the B.A. and B.S. degree in the College of Arts and Sciences who matriculated before Fall 2015 are required to complete the equivalent of 8 semester hours of work in a single modern or classical language. Normally this requirement is satisfied by completing courses 1010 and 1020 with a letter grade of C or better in a single language, but completion of 1020 with a grade of C or better also satisfies the requirement. There are also other ways to satisfy the requirement: (1) a more advanced language course with a grade of C or better also constitutes the completion of the language requirement (for a list of applicable courses contact the department); (2) students with prior exposure to the language may be granted college credit after taking a written examination administered by the department; students must take this examination before completing registration for a language course (for regulations governing credit by examination, refer to Credit Available to Undergraduate Students in this *Catalog*); (3) an advanced placement, AP, examination in the language with a score of 4 or higher satisfies the language requirement, as do CLEP scores (see section on Credit by Examination on the department web site).

Students who do not wish college credit for previous high school language study should register in classes appropriate to their level of training. Those who have had two years of a foreign language in high school normally enter 1020 of that language, while those who have had three or more years of such study should take the placement examination to determine the course in which they should enroll and to avail themselves of the opportunity to receive credit by examination. Students in doubt about their ability are advised to take the placement examination. Students who have completed their language requirement can enroll for additional language courses of their choice, something strongly advised for those who wish to reach adequate levels of proficiency in the language or wish to study abroad. Check the *Catalog* or web site for special sections targeted for students with varied experiences in the language.

Undergraduate Major

A language major usually requires 30 semester hours of work in a single language beyond 2030. To include a language option in the humanities/fine arts interdisciplinary program, students must complete at least 12 hours above the 2030 level.

French

Required courses for the major in French are 2040, 2130 or 3110, 2140, 3005, 3050, 3060, 4100, 4110, plus 6 hours of electives at the 4000-level.

German

Required courses for the major in German are 2040, 2140, 3050, 4100 and 4110, plus 15 hours of electives in German at the upper-level.

German in-residency requirement: German majors need to take 3 of the following 6 courses to meet the in-residency requirement: GERM 4100, 4110, 4145, 4240, 4230, 4265.

Russian

Required courses for the major in Russian are RUSS 2040, 2140, 3050, 3060, 4070, 4080, 4200 and 9 hours of electives in Russian* at the 3000-level or above. Coursework at the 3000-level or hight from study-abroad courses at Saratov University is also accepted (www.uwyo.edu/saratovstudy/).

*Non-RUSS electives may include: HIST 2230, HIST 2240, HIST 4290.

Spanish

Spanish offers two major tracks:

(1) The culture, literature, and cinema track requires 2040, 2140, 3050, 3100, 3120, plus 15 hours of electives above SPAN 2030.

(2) The language-linguistics track requires 2040, 3050, 3060, 4090, 4310, plus 15 hours of electives above SPAN 2030.

Highly recommended electives for the language-linguistics track are SPAN 3080, SPAN 4080, and SPAN 4320. It is possible to take one class from the following: SPPA 4160; ENGL/LANG 4985; ANTH 4760; ANTH 4775; ANTH 4785; ANTH 4795.

Humanties/Fine Art Majors

The humanities/fine art majors should have 2040, 2140 and 3050 as part of their language option. Prospective B.A. language majors should seek help from their advisers to work out a coordinated program of study. An additional area of concentration (e.g., a second foreign language, English, fine arts, philosophy, history, science or social science) is strongly recommended.

Minor

In general, students desiring to complete a minor in a foreign language will be required to complete a program of 18 semester hours above 2030. The requirements for individual languages are as follows:

Chinese

CHIN 2040	4
CHIN 2041	3
CHIN 3050	3
CHIN 3065	3
CHIN 3055	3
CHIN 4070	3
Total	***18***

Classical Civilizations

CLAS 2020 or HIST 2120	3
CLAS 2040 or HIST 2130	3
Electives	12

12 hours chosen from Classics 3000-level or above. Up to 6 hours of Latin at the 3000-level or above may be counted as electives. Other courses about ancient Mediterranean cultures that are not taught under Classics may be submitted for approval as electives to the advisor for the minor.

Total	***18***

French

FREN 2140	3
FREN 2040	3
FREN 3050	3
Electives	9

9 hours chosen from French at the 3000-level or above (at least 6 of these hours must be at the 4000-level).

Total	***18***

German

GERM 2140	3
GERM 2040	3
GERM 3050	3
Electives	9

9 hours chosen from German at the 3000-level or above (at least 6 of these hours must be at the 4000-level).

Total	***18***

Japanese

JAPN 2040	4
JAPN 3050	3
Electives	12
Electives to be chosen from: LANG 2150; LANG 3105; LANG 3140; HP 2151/4151; JAPN 4990; HIST 2460; HIST 2461; JAPN 3060; JAPN 4070; JAPN 4080.	
Total	***19***

Latin

LATN 3110	3
LATN 3140	2
LATN 4120	3
LATN 4130	3
Electives	7
Electives chosen from Latin at the 3000-level or above.	
Total	***18***

Russian

RUSS 2040	3
RUSS 2140	3
RUSS 3050	3
Electives	9
9 hours from Russian at the 3000-level or above (coursework at the 3000-level or higher from study-abroad courses at Saratov University is also accepted [www.uwyo.edu/saratovstudy/]).	
Total	***18***

Spanish

Electives	18
18 hours of electives in Spanish at the 2000-level or above (excluding SPAN 2030).	
Total	***18***

Teaching Certification

For those wishing to pursue teaching certification, a concurrent major in Modern Language Education is also available. For details, contact the Department of Secondary Education.

Native Language Credit

Students are not allowed university credit for language courses in their native language below the 4000 level, but may receive credit for literature courses below that level.

Study Abroad

There are many opportunities for students to study abroad and students are encouraged to do so.

Suggested Curriculum for B.A. in a Foreign Language

(for students with no prior background in the language)

FRESHMAN YEAR: Fall	**Hrs.**
Language 1010	4
FRESHMAN YEAR: Spring	**Hrs.**
Language 1020	4
SOPHOMORE YEAR: Fall	**Hrs.**
Language 2030	4
SOPHOMORE YEAR: Spring	**Hrs.**
Language 2040	3
Language 2140	3
JUNIOR YEAR: Fall	**Hrs.**
Language 3050	3
Language 3000-4000-level	3
JUNIOR YEAR: Spring	**Hrs.**
Language 3060	3
Language 3000-4000-level	6
SENIOR YEAR: Fall	**Hrs.**
Language 4200	3
SENIOR YEAR: Spring	**Hrs.**
Language 4000-5000-level	6

Graduate Study

The Department of Modern and Classical Languages offers programs leading to the master of arts degree with majors in French, German, and Spanish. Contact the department for further details or check the department website.

Program Specific Admission Requirements

Admission to the graduate program in a specific language is open to students who have completed an undergraduate major, or the equivalent, in the same subject and who meet the minimum requirements set forth in this *Catalog*.

Students entering the graduate program from other institutions may be required to make up visible deficiencies in areas covered by required courses in this department's undergraduate programs.

Program Specific Degree Requirements

Degree requirements are based on the university minimum requirements.

Classics (CLAS)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

2020. Classical Greek Civilization. 3. [WB,C◀▶H] Examines some of the most important developments of ancient Greek culture. Includes development of government in the city-states, with particular attention to Athenian democracy; tragedies of Aeschylus, Sophocles and Euripides; comedies of Aristophanes; crisis of values of the Peloponnesian War; and philosophy of Plato. *Prerequisite:* WA.

2040. Classical Roman Civilization. 3. [WB,CH◀▶(none)] Examines some of the most interesting political, legal, artistic, literary, and engineering developments of the Republic and Principate (510 BC-AD 212). These include representational government, citizens' rights, sanctioned violence, Rome's infrastructure, and major literary works of oratory, comedy, history, epic, and philosophy. *Prerequisite:* WA or equivalent (as specified in USP requirements).

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with HIST/POLS 3050. *Prerequisite:* WB.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with ENGL/THEA 4230. *Prerequisite:* 3 hours of classics courses.

4270. Classical Epic Poetry. 3. Reading and discussion of major works of Greek and Latin epic poetry, centered on Homer and Vergil. Also includes consideration of the background of these works (both mythological and historical) and the development of the epic tradition in the ancient world. Cross listed with ENGL 4270. *Prerequisite:* completion of a USP WB course.

4975. Independent Study. 1-4 (max. 12) Specialized study in aspects of Greek or Roman civilization of interest to the student, with topic and plan of work to be worked out by the student and the instructor together. *Prerequisite:* 6 hours of Classics courses or consent of instructor. (Offered based on sufficient demand and resources)

4990. Topics in Classical Civilization. 1-4 (max. 12) Study in depth of special areas in ancient civilization that are not covered in regularly offered courses. *Prerequisite:* 6 hours of Classics courses or consent of the instructor. (Offered based on sufficient demand and resources)

Chinese (CHIN)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Chinese I. 4. [(none)◀▶H] Fundamentals of grammar, conversation, and reading. Introduction to Chinese culture through the language.

1020. First Year Chinese II. 4. [(none)◀▶H] Fundamentals of grammar, conversation, and reading. Introduction to Chinese culture through the language. *Prerequisite:* CHIN 1010 or equivalent.

2030. Second Year Chinese I. 4. Grammar, composition, conversation and more vocabulary in Chinese. *Prerequisite:* CHIN 1020 or equivalent.

2040. Second Year Chinese II. 3. Further studies in grammar composition, conversation and more vocabulary in Chinese. *Prerequisite:* CHIN 2030 or equivalent.

2041. Contemporary and Traditional Chinese Culture. 3. Designed to provide those with a serious interest in China and Chinese language with a cultural context for learning Chinese language. Incorporates economic and social material to give students a clear view of Chinese culture with an emphasis on Chinese language instruction. *Prerequisite:* CHIN 2030.

3050. Intermediate Composition and Conversation. 3. Develop abilities to read and write complex Chinese texts with an intermediate level of understanding, including texts in both conversational and narrative styles. Reading and writing skills will build considerably on the skills learned in two years of university study in Chinese language. *Prerequisite:* CHIN 2040 or equivalent.

3055. Business Chinese. 3. [G◀▶COM2] Comprehensive course on business language skills. For students with proficiency in Mandarin at the Intermediate Mid level or higher. Focus is on language functions for the workplace. Productive skills, both spoken and written, will include the composition of extended frequently-used business documents Prerequisite: CHIN 3050 or equivalent.

3065. Intermediate Composition and Conversation II. 3. Students will not only understand and construct complex speech and writing but will gain the ability to do so effectively to persuade, discuss and communicate accurately with native Chinese speakers. Students will be able to relate topics such as personal experience, daily routine, reports, opinions and judgment in well-written Chinese paragraphs. *Prerequisite:* CHIN 3050 or equivalent.

3160. See Movies, Touch China. 3. [(none)◀▶H] This course combines exploration of classical and contemporary Chinese cultures through prominent Chinese films. The audio-video materials selected will be discussed in their historical context. Students will explore the transformations China has undergone, and will seek to understand the Chinese mindset. *Prerequisite:* COM1.

4070. Business Chinese II. 3. Apply previously acquired skills in complex Chinese language and business topics to the thorough analysis of case studies in Chinese business scenarios. Students will be able to read, discuss, and reach conclusions based on case studies of international companies in China and Chinese companies in international markets. *Prerequisite:* CHIN 3055.

3055. Business Chinese. 3. [G◀▶COM2] Comprehensive course on business language skills. For students with proficiency in Mandarin at the Intermediate Mid level or higher. Focus is on language functions for the workplace. Productive skills, both spoken and written, will include the composition of extended frequently-used business documents. *Prerequisite:* CHIN 3050 or equivalent.

English as a Second Language (ESL)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1110 [AS 1110]. Introduction to Academic Writing Skills. 3. Designed to introduce non-native speakers of English, who do not demonstrate the required competency in writing to enter AS 1210, to academic writing skills. Includes instruction in grammar and sentence structure, paragraph and essay writing. *Prerequisites:* TOEFL of 18 or lower; IELTS of 5 or lower.

1210 [AS 1210; ENGL 1210]. English Composition for International Students. 3. [WA◀▶COM1]. Accommodates students of different cultures and different levels of English proficiency. The objective is to equip students with procedural knowledge - a set of routines that can be applied in various academic writing patterns, such as description, process analysis, argumentation and the research essay. *Prerequisite:* AS 1000.

2110 [AS 2110; ENGL 2110]. English Oral Skills. 3. Instruction for Novice to advanced Low speakers in refining English pronunciation, stress and intonation, listening comprehension, oral grammar practice and building vocabulary. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

3050. Advanced Academic Writing for International Students. 3. [WB◀▶COM2]. Through ESL learner targeted instruction, practices, and feedback, the course will emphasize and progressively develop transferrable skills for students' academic work and future professions. It will continue to build on writing skills and emphasize foundational oral and digital communication skills. *Prerequisite:* WA/COM1.

4010. Technical Writing for International Students. 3. [WC◀▶COM3]. Prepares students from a culturally diverse background for the communication demands of the 21st century. Students conduct rhetorical analysis of various audiences and purposes in order to design, develop, revise and edit disciplinary and interdisciplinary technical communications, such as reports, proposals, job applications, research related documents and oral presentations. *Prerequisites:* WA/COM1, WA/COM2, and junior standing.

French (FREN)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year French I. 4. [(none)◀▶H] Fundamentals of grammar, composition, conversation and reading.

1020. First Year French II. 4. [(none)◀▶H] Fundamentals of grammar, composition, conversation and reading. *Prerequisite:* FREN 1010 or two years of high school French.

2030. Second Year French I. 4. [(none)◀▶H] Emphasizes the development of communication skills (listening, speaking, reading and writing) so as to help students function effectively in real-life contexts. Provides a systematic review of grammatical structures necessary for successfully communicating in French. *Prerequisite:* FREN 1020 or three years of high school French.

2040. Second Year French II. 3. [(none)◀▶H] A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 2030, three years of high school French or FREN 1010, 1020 with grade of B or better.

2130. Contemporary French Culture. 3. [(none)◀▶H] Designed as an introduction to contemporary French culture. It gives students an in-depth insight into contemporary French life. It also deals with issues affecting the French-speaking world in general: Quebec, Africa, New Caledonia, Switzerland, Monaco, etc. *Prerequisite:* FREN 1020 or equivalent.

2140. Introduction to Reading. 3. [CH,G◀▶(none)]Introduction to the literature of France; analysis of major literary types and elements of criticism. *Prerequisite:* FREN 2030.

3005. French Phonetics and Pronunciation. 3. Focus on the phonetic structures of French through systematic pronunciation drills and phonetic transcriptions. Varied oral activities and exercises will help develop an awareness of spoken French and improve students' pronunciation. *Prerequisite:* FREN 2040 or equivalent.

3050. Third Year French I. 3. [WB◀▶COM2] A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 2040.

3060. Third Year French II. 3. A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 3050.

3070. Cinema for French Conversation. 3. Emphasizes speaking and listening comprehension through contemporary films, while providing socio-cultural competence, vocabulary acquisition and grammar review. *Prerequisites:* FREN 3050.

3105. Masterpieces of French Literature in Translations. 3. A study in English of representative works of French literature from the Middle Ages to the present. No credit for French majors. *Prerequisite:* ENGL 1020. (Offered based on sufficient demand and resources)

3110. Contemporary French Civilization. 3. Emphasizes the institution and values of contemporary France. Deals with the major political, social, cultural and economic aspects of today's France. Will be taught in French. *Prerequisite:* FREN 3050.

3990. Independent Study. 1-4 (Max. 4). Books or periodicals of special interest to the student, selected in consultation with a member of the staff; independent reading and reports. *Prerequisite:* FREN 2030.

4080. Studies in the French Language. 3 (Max. 9). The topics explored under this general heading include: translation, history of the French language, French of the media and conversation. Dual listed with FREN 5080. *Prerequisite:* FREN 3060.

4085. Studies in French Culture. 3. Multiple topic course: (a) Business French focusing on the socio-economic, linguistic and administrative aspects of doing business in French; (b) Explication de textes, providing a systematic introduction to textual analysis; taught alternately. Dual listed with FREN 5085. *Prerequisite:* FREN 3060.

4100. A Survey of French Literature I. 3. A study of French Literature and civilization from the Middle Ages through the 18th century. *Prerequisite:* FREN 2140 or equivalent.

4110. A Survey of French Literature II. 3. A study of French Literature and civilization from the 19th century to the present. *Prerequisite:* FREN 2140 or equivalent.

4120. Medieval French Literature. 3. A survey of medieval French literature: epic, courtly poetry, Arthurian romance, theatre and the poetry of Villon. Dual listed with FREN 5120. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

4130. Renaissance French Literature. 3. A study of the new spirit after the Middle Ages. Authors studied: Rabelais, the poets of the Pleiade, Montaigne and others. Dual listed with FREN 5130. *Prerequisite:* FREN 3050; FREN 4100 and 4110 strongly recommended.

4140. 17th Century French Literature. 3. [WC◀▶(none)] A survey of representative works from the major literary genres from the formative period to classicism and its aftermath. Dual listed with FREN 5140. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

4250 [4150]. 19th Century French Literature. 3. Development of romanticism from Rousseau on with excerpts from Chateaubriand and romantic poets like Hugo and Vigny. The period of realism-naturalism focuses on novels of Flaubert and Zola, while the symbolist school of poetry is represented by Baudelaire, Verlaine and Rimbaud. Dual listed with FREN 5250. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

4260 [4160]. 20th Century French Literature. 3. The era since 1900 is divided into four parts: pre-World War I, between the wars, post-World War II and the New Wave. These periods are represented by authors including Valery, Proust, Malraux, Saint-Exupery, Camus, Sartre and others. Dual listed with FREN 5260. *Prerequisite:* FREN 3050; FREN 4100 and 4110 strongly recommended.

4350. Studies in French and Francophone Literatures. 3. An intensive study of a topic, period or author (pertaining to French or Francophone literature), to be selected according to interest and currency). Dual listed with FREN 5350. *Prerequisites:* FREN 3060; FREN 4100 and 4110 strongly recommended.

4990. Advanced Independent Study. 1-3 (Max. 6). Special projects designed to meet the needs of individual students, designed in consultation with instructor. *Prerequisites:* FREN 3050 and consent of instructor.

5080. Studies in French Language. 3. (Max 9). Topics explored include: French translation, history of the French language, French of the media, and conversation. *Prerequisite:* FREN 3060.

5085. Studies in French Culture. 3. Multiple topic course: (a) Business French focusing on the socio-economic, linguistic and administrative aspects of doing business in French; (b) Explication de textes, providing a systematic introduction to textual analysis; taught alternately. Dual listed with FREN 4085. *Prerequisite:* FREN 3060.

5120. Medieval French Literature. 3. A survey of medieval French literature: Epic, courtly poetry, Arthurian romance, theatre, and the poetry of Villon. Dual listed with FREN 4120. Prerequisites: FREN 3050; FREN 4100 and 4110 strongly recommended.

5130. Renaissance French Literature. 3. A study of the new spirit after the Middle Ages. Authors studied: Rabelais, the poets of the Pleiade, Montaigne, and others. Dual listed with FREN 4130. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

5140. 17th Century French Literature. 3. A survey of representative works from the major literary genres from the formative period to classicism and its aftermath. Dual listed with FREN 4140. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

5160. Graduate Readings. 1-5 (Max. 6). *Prerequisite:* undergraduate major or minor in the subject.

5170. Special Problems. 1-2 (Max. 6). *Prerequisite:* undergraduate major or minor in the subject.

5250. 19th Century French Literature. 3. Development of romanticism from Rousseau on with excerpts from Chateaubriand and romantic poets like Hugo and Vigny. The period of realism-naturalism will focus on novels each of Flaubert and Zola while the Symbolist School of poetry will be represented by Baudelaire, Verlaine and Rimbaud. Dual listed with FREN 4250. *Prerequisites:* FREN 2050; FREN 4100 and 4110 strongly recommended.

5260. 20th Century French Literature. 3. The era since 1900 is divided into 4 parts: Pre-World War I, between the wars, post-World War II and the New Wave. These periods are represented by such authors as Valery, Proust,

Malraux, Saint-Exupery, Camus, Sartre and others. Dual listed with FREN 4260. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended.

5350. Studies in French and Francophone Literatures. 3. An intensive study of a topic, period or author (pertaining to French or Francophone literature, to be selected according to interest and currency). Dual listed with FREN 4350. *Prerequisites:* FREN 3060; FREN 4100 and 4110 strongly recommended.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1 - 3 (Max 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

German (GERM)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year German I. 4. [(none)◀▶H] Explores fundamentals of grammar, composition, conversation and reading.

1020. First Year German II. 4. [(none)◀▶H] Examines fundamentals of grammar, composition, conversation and reading. *Prerequisite:* GERM 1010 or two years of high school German.

2030. Second Year German I. 4. [(none)◀▶H] Includes reading simple novels, short stories, and dramas; grammar review; and conversation. Eight required laboratory exercises. *Prerequisite:* GERM 1020 or three years of high school German.

2040. Second Year German II. 3. [(none)◀▶H] Encompasses formal grammar review; weekly composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* GERM 2030 or three years of high school German.

2140. Introduction to Literature. 3. [CH,G◀▶(none)] Introduces literature of Germany. Analyzes major literary types and elements of criticism. *Prerequisite:* GERM 2030 or three years of high school German.

3006. 20th Century German Culture and Civilization. 3. [WC,CH◀▶(none)] Major political, ideological and cultural developments in Germany between 1871 and the present. An interdisciplinary approach (history, art history, film and literature) allows students to explore and assess a nation's culture and civilization as well as far-reaching events (WWI, WWII and the Holocaust) from various perspectives. *Prerequisite:* junior standing.

3050. Third Year German I. 3. [WB◀▶COM2] Encompasses formal grammar review; weekly composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* GERM 2040.

3060. Third Year German II. 3. Emphasizes weekly compositions and corrective practice, stylistic analysis of representative texts and group discussion on prepared topics. *Prerequisite:* GERM 3050.

3150. German History and Culture. 3. [CH,G◀▶(none)] Taught in English, this class engages students both theoretically and practically with German history and culture throughout the ages from the Middle Ages to today. Reading content is complemented with outings to culturally and historically significant sites in Germany as part of a summer study abroad program. *Prerequisite*: WA or equivalent.

3990. Independent Study. 1-4 (Max. 4). Focuses on books or periodicals of special interest to the student selected in consultation with a staff member; independent reading and reports. *Prerequisite:* GERM 2030.

4070. Fourth Year German. 3. Emphasizes weekly compositions and corrective practice, stylistic analysis of representative texts and group discussion on prepared topics. Dual listed with GERM 5070. *Prerequisite:* GERM 3060. (Offered every other year)

4080. German-English and English-German Translation. 3. [WB◀▶(none)] Encompasses written translation exercises based on contemporary and relevant texts in both English and German. Addresses specific translation problems arising in both English and German, when translating into the other language. *Prerequisites:* GERM 3050 and/or 3060. (Offered fall semester)

4095. Masterpieces of German Literature in English. 3. Introduces students to masterpieces of German literature in English translation from the Age of Enlightenment to the present. Discussions of literary movements and periods, authors and the cultural, social and historical background in which these masterpieces were written are included in the interpretations of the texts. Dual listed with GERM 5095. *Prerequisite:* WB.

4100. A Survey of German Literature I. 3. Studies German literature and civilization from the Middle Ages to the 17th century. Dual listed with GERM 5100. *Prerequisite:* GERM 2140 or equivalent.

4110. A Survey of German Literature II. 3. Studies German literature and civilization from the 18th century to the end of the 20th century. Dual listed with GERM 5110. *Prerequisite:* GERM 2140 or equivalent.

4145. Weimar Classicism. 3. Introduces student to Weimar Classicism, one of the crucial periods in German literature and culture. Explores the foundation of the movement, its cultural and historical contexts, aesthetic and philosophical principles, and significant works during this period. Primary language for instruction for this course is German. Dual listed with GERM 5145. *Prerequisite:* GERM 2140 or equivalent.

4180. German Poetry. 3. Surveys poetry from the Middle Ages to the present. Emphasizes poetry after 1600. Treats formal elements and genre categories. Dual listed with GERM 5180. *Prerequisite:* GERM 2140.

4190. Contemporary German Drama. 3. Surveys the most important dramas and trends since 1945. Includes readings in modern drama theory. Dual listed with GERM 5190. *Prerequisite:* GERM 2140 or equivalent.

4200. Introduction to Research. 1-3 (Max. 9). Senior seminar on a topic varying from year to year. Includes study of standard bibliographical guides. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 4000-5000-level courses.

4230. 19th Century German Drama. 3. Studies popular tastes and intellectual endeavors in 19th century drama after the age of Goethe. Surveys the literature during Romanticism, Young Germany, Realism, Naturalism and Expressionism. Dual listed with GERM 5230. *Prerequisite:* GERM 2140 or equivalent.

4240. German Literature of the Romantic Period. 3. Introduces the philosophical bases of German Romanticism and analyzes representative works of prose and poetry. Dual listed with GERM 5240. *Prerequisite:* GERM 2140 or equivalent.

4255. 19th Century German Novellas. 3. Studies a wide selection of significant German novellas from the period when this genre flourished in the German-speaking world, with a popularity unparalleled in the rest of Europe. Examines the form's origins, evolution, reception, and theory. Dual listed with GERM 5255. *Prerequisite:* GERM 2140 or equivalent.

4265. A Divided Nation: Politics and Culture in Germany 1945 to 1990. 3. Introduces students to major political, ideological and cultural developments in East and West Germany between 1949 and 1990. Investigates the construction of national identities based on major writings by East and West German philosophers, intellectuals and creative writers. Course is taught in German. Dual listed with GERM 5265. *Prerequisite:* GERM 2140 or equivalent.

4275. Contemporary Migration Literature. 3. Introduces students to a range of recent cultural production by artists identified with immigrant communities or communities of color. Topics examined include intersections of gender, race, nation, culture, and class; experiences of different minorities; question of national and transnational identity, self-representation, immigration, multiculturalism and integration debates. Course is taught in German. Dual listed with GERM 5275. *Prerequisite:* GERM 2140 or equivalent.

4285. 20th/21st Century German Film. 3. Introduces students to classical German films, and thereby enhances their skills to conduct research in the Humanities. Themes to be discussed: representation of authority, issues of race and gender, German culture and history, the Americanization of German culture, minorities in contemporary Germany. Dual listed with GERM 5285. *Prerequisite:* WB.

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects designed to meet needs of individual students, designed in consultation with instructor. *Prerequisites:* GERM 2140 and consent of instructor.

5070. 4th Year German. 3. Emphasizes weekly compositions and corrective practice, stylistic analysis of representative texts, and group discussions on prepared topics. Dual listed with GERM 4070. *Prerequisite:* GERM 3060.

5095. Masterpieces of German Literature in English. 3. Introduces students to masterpieces of German literature in English translation from the Age of Enlightenment to the present. Discussions of the literary movements and periods, authors and the cultural, social and historical background in which theses masterpieces were written are included in the interpretations of the texts. Dual listed with GERM 4095. *Prerequisite:* graduate standing.

5100. A Survey of German Literature I. 3. A study of German literature and civilization from the Middle Ages to the seventeenth century. Dual listed with GERM 4100. *Prerequisite:* GERM 2140 or equivalent.

5110. A Survey of German Literature II. 3. A study of German literature and civilization from the eighteenth century to the end of the twentieth century. Dual listed with GERM 4110. *Prerequisite:* GERM 2140 or equivalent.

5145. Weimar Classicism. 3. Introduces students to Weimar Classicism, one of the crucial period in German literature and culture. Explores the foundation of the movement, its cultural and historical contexts, aesthetic and philosophical principles, and significant works written by Goethe and Schiller during this period. Taught in German. Students are expected to read, write and discuss in German. Dual listed with GERM 4145. *Prerequisite:* graduate standing.

5150. Studies in German Literature. 2-3 (Max. 6). An intensive study of a topic or an author. Designed primarily for graduate students, the course is open to seniors with permission of the instructor. *Prerequisite:* 12 semester hours of German literature at 4000-level.

5160. Graduate Readings. 1-5 (Max. 6). *Prerequisite:* undergraduate major or minor in the subject.

5170. Special Problems. 1-2 (Max. 6). *Prerequisite:* undergraduate major or minor in the subject.

5180. German Poetry. 3. A survey of poetry from the Middle Ages to the present. Emphasis on poetry after 1600. Treatment of formal elements and genre categories. Dual listed with GERM 4180. *Prerequisite:* GERM 2140.

5190. Contemporary German Drama. 3. A survey of the most important dramas and trends since 1945. Readings in the theory of modern drama. Dual listed with GERM 4190. *Prerequisite:* GERM 2140 or equivalent.

5230. 19th Century German Drama. 3. Popular tastes and phonetic intellectual endeavors in nineteenth century drama after the age of Goethe. Survey of the literature during Romanticism, Young Germany, Realism, Naturalism, and Expressionism. Dual listed with GERM 4230. *Prerequisite:* GERM 2140 or equivalent.

5240. German Literature of the Romantic Period. 3. An introduction to the philosophical bases of German Romanticism and analysis of representative works of prose and poetry. Dual listed with GERM 4240. *Prerequisite:* GERM 2140 or equivalent.

5255. 19th Century German Novellas. 3. Studies a wide selection of German novellas from the period when this genre flourished in the German-speaking world, with a popularity unparalleled in the rest of Europe. Examines the form's origins, evolution, reception, and theory. Dual listed with GERM 4255. *Prerequisite:* GERM 2140 or equivalent.

5265. A Divided Nation: Politics and Culture in Germany 1945-1990. 3. Introduces students to major political, ideological and cultural developments in East and West Germany between 1949 and 1990. Investigates the construction of national identities based on major writings by East and West German philosophers, intellectuals and creative writers. Taught in German. Dual listed with GERM 4265. *Prerequisites:* GERM 2140 or equivalent, graduate standing.

5275. Contemporary Migration Literature. 3. Introduces students to a range of recent cultural productions by artists identified with immigrant communities or communities of color. Topics examined include: the intersections of gender, race, culture, and class; experiences of different minorities in unified Germany; question of national and transnational identity, self-representation, immigration, multiculturalism and integration debates. Taught in German. Students are expected to read, write and discuss in German. Dual listed with GERM 4275. *Prerequisite:* GERM 2140 or equivalent.

5285. 20th/21st Century German Film. 3. Introduces students to classical German films, and thereby enhances their skills to conduct research in the Humanities. Themes to be discussed: representation of authority, issues of race and gender, German culture and history, the Americanization of German culture, minorities in contemporary German. Taught in English. Dual listed with GERM 4285. *Prerequisites:* graduate standing.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Greek (GRK)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Greek I. 4. Studies fundamentals of grammar, composition and reading in Classical Greek. (Offered based on sufficient demand and resources)

1020. First Year Greek II. 4. Studies grammar, composition and reading in Classical Greek. *Prerequisite:* GRK 1010. (Offered based on sufficient demand and resources)

2030. Second Year Greek. 4. Explores reading simple texts, stories and dramas, as well as grammar review. *Prerequisite:* GRK 1020 or equivalent. (Offered based on sufficient demand and resources)

2040. Second Year Greek II. 4. Further studies in grammar and reading simple texts, stories, and dramas. (Offered based on sufficient demand and resources.) Prerequisites: GRK 2030 or the equivalent.

3990. Independent Study. 1-4 (Max. 12). Encompasses independent reading, selected in consultation with instructor. *Prerequisite:* GRK 1020 or equivalent. (Offered based on sufficient demand and resources)

Japanese (JAPN)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Japanese I. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading. Introduces Japanese culture through the language. (Offered fall semester)

1020. First Year Japanese II. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading. Introduces Japanese culture through the language. *Prerequisite:* JAPN 1010 or equivalent. (Offered spring semester)

2030. Second Year Japanese I. 4. Encompasses reading, speaking and writing in original Japanese syllabaries, including elementary kanji characters for daily practical application. *Prerequisite:* JAPN 1020 or equivalent. (Offered fall semester)

2040. Second Year Japanese II. 4. Encompasses reading, speaking and writing in original Japanese syllabaries, including elementary kanji characters for daily practical application. *Prerequisites:* JAPN 1020 and 2030 or equivalent. (Offered based on sufficient demand and resources)

3050. Third Year Japanese I. 3. Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* JAPN 2040 or equivalent. (Offered based on sufficient demand and resources)

3060. Third Year Japanese II. 3. Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisites:* JAPN 2040 and 3050 or equivalent. (Offered based on sufficient demand and resources)

3990. Independent Study. 1-4. Projects in language or literature designed to meet specific student needs or interests, selected in consultation with faculty; independent reading and reports. *Prerequisite:* JAPN 2030.

4070. Fourth Year Japanese I. 3. Incorporates intensive grammar review and combination skill development. Also emphasizes specialized lexicons, written and oral translations, conversational fluency and additional kanji characters. *Prerequisite:* JAPN 3060. (Offered based on sufficient demand and resources)

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects pertaining to Japanese language or literature to meet needs of individual students designed in consultation with instructor. *Prerequisites:* JAPN 3050 and consent of instructor. (Offered based on sufficient demand and resources)

Language (LANG)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1030. Intellectual Community in Cinema Etc. 3. [I◀▶(none)] Introduces students to a range of issues within the humanities through the analysis of film, television, and theater. Taught alternately by Modern and Classical Languages and English. Cross listed with ENGL 1030.

2150. Manga: History and Culture. 3. [(none)◀▶COM2] Manga is one of the most important art forms to emerge from Japan. Its importance as a medium of visual culture and storytelling cannot be denied. Through reading and examination of texts, students will understand the relevance of comics in Japanese society. *Prerequisite:* COM1.

3105. Major Themes in Chinese and Japanese Literature. 3-4 (Max. 4). Explores mindsets of two rich and ancient civilizations, China and Japan. Considers distinctive characters of each civilization, while illuminating basic elements that we share with these peoples. *Prerequisite:* ENGL 1010.

3140. Anime: History and Culture. 3. [G,WB◀▶(none)] An introduction to the history, development, and cultural significance of Japanese animation. Through the examination of a variety of anime genres, students will gain insight into contemporary Japan as well as important historical periods. We will read analyses of particular anime, emphasizing the unique characteristics of the art and the mystery of its popularity in the US. *Prerequisite*: completion of WA.

4485. Latin Diaspora: Comparative History of U.S. 3. History of U.S. Latino peoples including Mexican Americans, Puerto Ricans, Cubans, Dominicans, Central Americans, South Americans and Spaniards. Historical context, origins, development of Latin American national, cultural identities, regional characteristics, immigration; nativist responses; assimilation, cultural continuity and change. Similarities, general patterns and differences, Hispanic and Pan Latino identities and probable future trends. *Prerequisite:* HIST 2370 or 2380 or CHST 1100.

4750 [3750]. Fundamentals of Linguistics. 3. An introduction to fundamentals of linguistic study, including phonology, morphology, semantics, pragmatics, and syntax, with a focus on the application of linguistic theory. Cross listed with ANTH/ENGL 4750. *Prerequisite:* 8 hours of foreign language.

4770 [3770]. Sociolinguistics. 3. Following an introduction to the fundamentals of linguistic study, an examination of the relationship and interactions among language, society, and culture, including linguistic and social behaviors with regard to the creation and modification of cultural identity. Cross listed with ANTH/ENGL 3770. *Prerequisite:* 8 hours of foreign language.

4785. Linguistics, Language Teaching and Social Context. 3. Introduces prospective teachers of English as second language to the basic components of language and to the social aspects of human language use. Explores

a variety of concepts about language: how it is used and perceived, how languages change, how diverse cultures respond to such changes. Cross listed with ENGL 4785. *Prerequisite:* WB.

4800. Advanced Instruction In: ___. 1-3 (Max. 12). Advanced study and projects designed to meet special needs and interests of students, to be selected in consultation with a suitable member of the faculty. *Prerequisite:* consent of instructor.

4975. Independent Study In:__. 1-3 (Max. 12). Further work in a less commonly taught language, for students who have at least four semesters of study or comparable proficiency. *Prerequisite:* LANG 2040 or equivalent.

5300. Advanced Linguistics. 3. Data is offered to provide the opportunity to analyze phonological, morphological, and syntactic materials from languages throughout the world. Attention is given to the limits within which these aspects of human language appear to vary. *Prerequisite:* ANTH/ENGL/LANG 4750.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

Other Languages (LANG)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

Modern languages not listed above are offered under the following listings in the class schedule:

1010. First Semester in __. 1-4 (Max. 12).

1020. Second Semester in __. 1-4 (Max. 12). *Prerequisite:* LANG 1010.

2030. Third Semester in __. 1-4 (Max. 12). *Prerequisites:* LANG 1010, LANG 1020.

2040. Fourth Semester in:__. 3. [(none)◀▶H] Encompasses formal grammar introduction and review; periodic composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* Satisfactory completion of corresponding study in LANG 2030.

Latin (LATN)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Latin I. 4. [(none)◀▶H] Studies fundamentals of grammar, composition and reading. (Offered fall semester)

1020. First Year Latin II. 4. [(none)◀▶H] Studies fundamentals of grammar, composition and reading. *Prerequisite:* LATN 1010 or equivalent. (Offered spring semester)

2030. Second Year Latin. 4. Reading simple texts, short stories and dramas, as well as grammar review and conversation. *Prerequisite:* LATN 1020 or equivalent. (Offered fall semester)

3110 [2110]. Vergil, The Aeneid I. 3. Reading portions of the Aeneid and consideration of its literary interpretation. *Prerequisite:* LATN 2030 or equivalent.

3120 [2120]. Vergil, The Aeneid II. 3. Reading further portions of the Aeneid and consideration of its literary interpretation. *Prerequisite:* LATN 3110. (Offered based on sufficient demand and resources)

3140. Caesar. 2. Acquaints students with war-memoir genre of Latin literature. *Prerequisite:* LATN 2030 or equivalent. (Offered based on sufficient demand and resources)

3150. Livy. 3. Reading portions of Livy's historical works, and consideration of the history he covers and how the Romans viewed their past. *Prerequisite:* 15 hours of college Latin or equivalent.

3160. Ovid. 2. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

3990. Independent Study. 1-4 (Max. 12). Books or texts of special interest to the student, selected in conjunction with the instructor; independent reading and reports. *Prerequisite:* LATN 2030 or equivalent. (Offered based on sufficient demand and resources)

4110. Horace. 3. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

4115. Latin Philosophers. 3. An introduction to Latin philosophical traditions. Readings will be selected either from one author, such as Lucretius (ca. 99-55 BCE) or Seneca the Younger (ca. 4 BCE-65 CE), or from different authors about a given theme. *Prerequisite:* 15 hours of college Latin or equivalent.

4120. Catullus and the Elegiac Poets. 3. Discusses Latin lyric poetry of late Republic and early Empire, excluding works of Horace and Ovid, and elegiac tradition in Latin. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

4130. Cicero. 3. Introduction to the prose of the statesman Marcus Tullius Cicero (106-43 BCE). Readings will be selected from his political speeches, correspondences, or treatises on philosophical, rhetorical, and religious topics. *Prerequisite:* 15 hours of college Latin or equivalent.

Russian (RUSS)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Practical Russian. 1-3 (Max. 3). Studies fundamentals of Russian grammar for reading comprehension in professional fields. Credit granted cannot be substituted for credit in RUSS 1010, 1020 or 2030. (Offered based on sufficient demand and resources)

1005. Introduction to the Russian Sound System. 1 (Max. 2). Introduces phonetics, alphabet and intonation. Fifteen 50-minute lab sessions. Offered S/U only.

1010. First Year Russian I. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading. (Offered fall semester)

1020. First Year Russian II. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading. *Prerequisite:* RUSS 1010 or two years of high school Russian. (Offered spring semester)

2005. Russian Intonation, Phonetics and Pronunciation. 1 (Max. 2). Reviews phonetics and intonation. For second year Russian students. Fifteen 50-minute lab sessions. Offered S/U only. *Prerequisite:* RUSS 1000 or 1010/1020.

2030. Second Year Russian I. 4. [(none)◀▶H] Grammar completion and conversation. *Prerequisite:* RUSS 1020 or three years of high school Russian. (Offered fall semester)

2040. Second Year Russian II. 3. [(none)◀▶H] Reviews grammar and conversation. *Prerequisite:* RUSS 2030. (Offered spring semester)

2140. Introduction to Reading. 3. [CH,G◀▶(none)] Introduction to reading Russian. Analyzes major media. *Prerequisite:* RUSS 2030 or three years of high school Russian. (Offered spring semester)

3050. Third Year Russian I. 3. [(none)◀▶COM2] Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* RUSS 2040 or three or four years of high school Russian. (Offered fall semester)

3060. Third Year Russian II. 3. Stresses usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* RUSS 3050. (Offered spring semester)

3065. Topics in Russian Language. 3. Encompasses special topics on aspects of Russian language. *Prerequisite:* RUSS 2030. (Offered either semester)

3105. 20th Century Russian Literature in English. 3. Studies classics of Soviet and Pre-Soviet eras. In English. *Prerequisite:* ENGL 1010. (Offered based on sufficient demand and resources)

3150. Introduction to Literature. 3. Examines literature of Russia. Analyzes major literary types and elements of criticism. *Prerequisites:* RUSS 2040 and 2140.

3205. Russian Folklore and Folk life. 3. [CH,G◀▶(none)]. Devoted to the study of Russian Folklore and Folk Life, with an emphasis on verbal art. Students will read primary sources in English translations, as well as critical and theoretical works in order to identify differences and commonalties reflected in the multiform interactions recounted in the folktales globally. *Prerequisite:* WA.

3990. Independent Study. 1-4 (Max. 4). Encompasses books or periodicals of special interest to the student, selected in consultation with staff member. Includes independent reading and reports. *Prerequisite:* RUSS 2040.

4070. Fourth Year Russian I. 3. Advanced work in Russian syntax and phonetics. Introduces linguistic basis of the language with practical and literary composition and conversation. *Prerequisite:* RUSS 3060 or equivalent. (Offered fall semester)

4080. Fourth Year Russian II. 3. Advanced work in Russian syntax and phonetics. Introduces linguistic basis of the language with practical and literary composition and conversation. *Prerequisite:* RUSS 4070. (Offered spring semester)

4090. Topics in Russian Linguistics. 3. Covers topics in Russian grammar from historical perspectives. *Prerequisite:* RUSS 3050 or 3065.

4105. 19th Century Russian Culture and Literature in English. 3. Explores classics of Russian fiction of 19th century. In English. Dual listed with RUSS 5105. *Prerequisite:* WB course.

4200. Senior Seminar. 3 (Max. 6). [(none) ◀▶COM3] Discusses topic which varies from semester to semester. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 3000-and 4000-level courses in the subject or instructor's consent.

4990. Advanced Independent Study. 1-3 (Max. 9). Students develop program of independent study in conjunction with instructor. *Prerequisite:* RUSS 3060 or equivalent.

5105. Nineteenth Century Russian Culture and Literature in Translation. 3. Presents the classics of Russian fiction of the nineteenth century (read in English). Dual listed with RUSS 4105. *Prerequisite:* ENGL 1010, 1020.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status..

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

Spanish (SPAN)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1010. First Year Spanish I. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading.

1020. First Year Spanish II. 4. [(none)◀▶H] Studies fundamentals of grammar, composition, conversation and reading. *Prerequisite:* SPAN 1010 or two years of high school Spanish.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2030. Second Year Spanish I. 4. [(none)◀▶H] Encompasses reading, grammar review, compositions and conversation. *Prerequisite:* SPAN 1020 or three years of high school Spanish.

2040. Second Year Spanish II. 4. [(none)◀▶H] Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* SPAN 2030 or three years of high school Spanish.

2140. Introduction to Literature. 3. [CH,G◀▶(none)] Introduces Hispanic literature. Analyzes major literary types and elements of criticism. *Prerequisite:* SPAN 2030 or equivalent.

3040. Spanish Conversation. 3. Emphasizes speaking and listening comprehension through structured and monitored individual, pair, small group and class work, while providing socio-cultural competence, vocabulary acquisition and grammar review. Provides enhanced language skills in a manner that otherwise could only be attained through an extended stay in a Hispanic country. *Prerequisite:* SPAN2040; limited to Spanish majors/minors with no previous experience abroad.

3050. Third Year Spanish I. 3. [WB◀▶COM2] Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* SPAN 2040.

3060. Third Year Spanish II. 3. Intensively reviews grammar and composition-skill development. Also emphasizes specialized lexicons, written and oral translation, as well as conversational fluency. *Prerequisite:* SPAN 3050.

3070. Intensive Spanish Abroad. 3. Three-week intensive Spanish language study in private language schools throughout Latin America and Spain. Program includes four hours of class per day in classes of four to eight students per teacher, room and board with host family and UW faculty escort. *Prerequisite:* SPAN 2030.

3080. Southwest Spanish. 3. Examines the dialects of Southwest Spanish and explores their development from the Spanish conquest to the present, focusing on the linguistic systems themselves as well as on the historical, political and social factors that have influenced the development of the various dialects. Cross listed with CHST 3080. *Prerequisite:* SPAN 1020 or equivalent proficiency.

3100. Survey of Spanish Literature. 3. Studies Spanish literature from the Middle Ages to the end of the 17th century. *Prerequisite:* SPAN 2140 or equivalent.

3120. Survey of Spanish American Literature. 3. [G◀▶(none)] Surveys Spanish American literature from colonial period to the present. *Prerequisite:* SPAN 2140 or equivalent.

3200. Spanish Culture and Civilization. 3. Studies the evolution of Spanish culture through its main artistic, sociological and intellectual expressions. *Prerequisite:* SPAN 2040, 2140.

3220. Spanish-American Cultures in Context. 3. Introduction to the Spanish-speaking cultures of Latin America and the United States through a historical overview and a focus on contemporary politics and culture. *Prerequisite*: SPAN 2040 or SPAN 2140 or consent of instructor.

3990. Independent Study. 1-4 (Max. 4). Encompasses books or periodicals of special interest to the student, selected in consultation with a staff member. Includes independent reading and reports. *Prerequisite:* SPAN 2030.

4070. Fourth Year Spanish I. 3. Intensively reviews grammar and composition-skill development. Also emphasizes specialized lexicons, written and oral translation and conversational fluency. *Prerequisite:* SPAN 3060.

4080. Fourth Year Spanish II. 3 (Max. 9). Encompasses special topics in language such as syntax, morphology, discourse and Spanish for special purposes (e.g. business, medicine).

4090. Spanish Phonetics and History of the Language. 3. Provides a practical guide to description and performance of Spanish phonological system and general survey of the language's historical development, as well as major dialectical variations. Dual listed with SPAN 5090. *Prerequisites:* SPAN 2030; SPAN 3050 and 3060 highly recommended.

4095. Advanced Translation. 3 (Max. 6). A practical approach to translating techniques and elements of oral interpretation. *Prerequisite:* SPAN 3060.

4125. Spanish-Language Literatures of the Americas. 3 (Max. 9). Examines Spanish American literature from a wide variety of perspectives: geographical regions (e.g. Caribbean, Andean, greater Mexico), theme (e.g. revolution, borders), period (e.g. Colonial, 19th century), or genre (e.g. poetry, theatre, film, non-fiction). *Prerequisite:* SPAN 3050 or equivalent. SPAN 3120 highly recommended.

4130. Masterpieces of Spanish Renaissance Literature. 3. Studies Spanish Renaissance, taking into consideration social, political, economic, religious, philosophical and aesthetic aspects of the culture as a context for and as reflected in the literature. Dual listed with SPAN 5130. *Prerequisite:* SPAN 2140 or equivalent.

4140. Masterpieces of Spanish Baroque Literature. 3. Studies Spanish Baroque, taking into consideration social, political, economic, religious, philosophical and aesthetic aspects of the culture as a context for and as reflected in the literature. Also covers relationship between Spanish Renaissance and Baroque. Dual listed with SPAN 5140. *Prerequisite:* SPAN 2140 or equivalent.

4150. Spanish Romanticism. 3. Comprehensively studies romantic movement in Spain. Includes close reading and commentary of texts by authors such as Espronceda, Rivas, Zorrilla, Becquer and de Castro. Dual listed with SPAN 5150. *Prerequisite:* SPAN 2140 or equivalent.

4170. Contemporary Spanish Prose. 3. Examines contemporary prose fiction of Spain. Studies authors who gained recognition before and after the 1936 Spanish Civil War. *Prerequisites:* SPAN 2140 or equivalent and one 4000-level course.

4180. Advanced Cultural Studies in Hispanic Lit/Media. 3. Advanced analysis of Hispanic cultural phenomena. Focus on the Spanish-speaking cultures of Spain or the Spanish-speaking Americas or both. The Texts consulted vary according to instructor and may include the visual arts, such as film, paintings, and performance, academic theory, websites, and other fiction and non-fiction readings. Dual listed with SPAN 5180. *Prerequisites:* SPAN 2140 or equivalent and one 4000-level course.

4190. 20th and 21st Century Spanish-American Texts. 3. Provides students the opportunity to study representative literary texts that reflect the tendencies and trends in 20th and 21st Century Spanish-language works of the Americas. Dual listed with SPAN 5190. *Prerequisite:* 6 hours of Spanish literature at 4000-level.

4200. Introduction to Research. 3 (Max. 9). [WC◀▶COM3] Senior seminar on a topic varying from year to year. Includes study of standard bibliographical guides. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 4000- or 5000-level courses in Spanish.

4260. The Realist Novel in Spain. 3. Studies major novelists of 19th century Spain from 1850 until Generation of '98. Dual listed with SPAN 5260. *Prerequisite:* SPAN 2140 or equivalent.

4310. Introduction to Hispanic Linguistics. 3. Overview of basic concepts and approaches to linguistics with examples from and emphasis on Spanish description. Basic concepts in semiotics, formal and non-formal linguistics, core areas in linguistics (phonetics & phonology, morphosyntax, semantics & pragmatics), as well as an overview of subfields of linguistics (psycholinguistics, sociolinguistics, computational linguistics, etc.). *Prerequisites:* SPAN 3050 or equivalent proficiency.

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects to meet needs of individual students, designed in consultation with instructor. *Prerequisites:* SPAN 2040 and consent of instructor.

5090. Spanish Phonetics and History of the Language. 3. A practical guide to the description and performance of the Spanish phonological system and a general survey of the language's historical development as well as if its major dialectical variations. Dual listed with SPAN 4090. *Prerequisite:* SPAN 2030; SPAN 3050 and 3060 highly recommended.

5100. Hispanic Thought. 3. intensive study of a topic, author, or philosophical movement. Designed for upper level and graduate students. *Prerequisite:* 12 hours of Spanish literature at 4000-5000 level.

5110. Peninsular Spanish Literature. 1-3 (Max. 9). An intensive study of a topic or an author. Designed for upper level and graduate students. *Prerequisite:* 12 hours of Spanish literature at 4000-5000 level.

5120. Spanish American Literature. 1-3 (Max. 9). An intensive study of a topic or an author. Designed for upper level and graduate students. *Prerequisite:* 12 hours of Spanish literature.

5130. Masterpieces of Spanish Renaissance Literature. 3. A study of the Spanish Renaissance, taking into consideration social, political, economic, religious philosophical, and aesthetic aspects of the culture as a context for and as reflected in the literature. Dual listed with SPAN 4130. *Prerequisite:* SPAN 2140 or equivalent.

5140. Masterpieces of Spanish Baroque Literature. 3. Studies of the Spanish Baroque, taking into consideration social, political, economic, religious, philosophical, and aesthetic aspects of the culture as a context for and as reflected in the literature. Also covers the relationship between the Spanish Renaissance and the Baroque. Dual listed with SPAN 4140. *Prerequisite:* SPAN 2140 or equivalent.

5150. Spanish Romanticism. 3. A comprehensive study of the romantic movement in Spain. Close reading and commentary of texts by representative authors including Espronceda, Rivas, Zorilla, Becquer and de Catstro. Dual listed with SPAN 4150. *Prerequisite:* SPAN 2140 or equivalent.

5160. Graduate Readings. 1-5 (Max. 6). *Prerequisite:* graduate standing.

5170. Special Problems. 1-2 (Max. 6). *Prerequisite:* graduate standing.

5180. Advanced Cultural Studies in Hispanic Lit/Media. 3. Advanced analysis of Hispanic cultural phenomena. Focus on the Spanish-speaking cultures of Spain or the Spanish-speaking Americas or both. The Texts consulted vary according to instructor and may include the visual arts, such as film, paintings, and performance, academic theory, websites, and other fiction and non-fiction readings. Dual listed with SPAN 4180. *Prerequisite:* SPAN 2140 or equivalent and one 4000-level course.

5190. 20th and 21st Century Spanish-American Literature. 3. Provides students with the opportunity to study representative literary texts that reflect the tendencies and trends in 20th and 21st Century Spanish-language works of the Americas. Dual listed with SPAN 4190. *Prerequisite:* 6 hours of Spanish at the 4000-level.

5260. The Realist Novel in Spain. 3. Studies of the major novelists of nineteenth century Spain from 1850 until the Generation of '98. Dual listed with SPAN 4260. *Prerequisite:* SPAN 2140 or equivalent.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Latina/o Studies (formerly Chicano Studies)

106 Ross Hall, 766-4127
Web site: uwyo.edu/ChicanoStudies
Director: Dr. Cecilia Aragon

Associate Professors:
CECILIA J. ARAGON, B.S. McMurry University Texas; M.A. University of New Mexico; Ph.D. Arizona State University; Associate Professor of Theatre and Dance 2005.

Assistant Professors:
VANESSA FONSECA, B.A. University of New Mexico 2005; M.A. 2007; Ph.D. 2013; Assistant Professor of English and Latina/o Studies.
LILIA SOTO, B.A. University of California, San Diego 2000; M.A. University of California, Berkeley 2003; Ph.D. 2008; Assistant Professor of American Studies and Latina/o Studies 2010.

The Latina/o Studies program, through an interdisciplinary and comparative approach examines the history, cultures, language and contemporary experiences of Mexicans, Mexican Americans and other Latinos/as in Wyoming, the United States and the world.

The Latina/o Studies Program offers an academic minor. Information about the Latina/o Studies Program and minor can be obtained from the Latina/o Studies Program office located in the Arts and Sciences Building, room 326, (307) 766-4127.

Learning Outcomes

Latina/o Studies courses emphasize perspectives that are historical and contemporary, theoretical and practical, as well as critical and aesthetic. These perspectives help to develop an understanding of oppression and resistance, at the individual, institutional, and ideological levels.

Upon completion of the University of Wyoming Latina/o Studies minor curriculum, students will have an awareness and appreciation for the Latina/o experience. Particularly as the Latina/o experience is expressed in the following concepts and principles of organic insight, relational awareness, historical perspective, power for social change, intersectionality, and aesthetics.

1. *Organic Insight* - The development of a contextual framework for understanding one's own and others' experiences in relation to the Latina/o experience.

2. *Relational Awareness* - The development of a theoretical framework for understanding how institutional social structures impact individuals, families, and communities, and in turn, how individuals, families, and communities impact social structures through resistance, social agency, and change.

3. *Historical Perspective* - The development of a critical historical viewpoint for understanding how struggles around social, economic, and political forces have shaped the traditional and contemporary Latina/o Diaspora.

4. *Power for Social Change* - The development of a critical consciousness, which is necessary for a social praxis that combats oppressive racist ideologies and social structures that perpetuate individual and institutional inequalities.

5. *Intersectionality* - Gaining an awareness of the intersection of race, ethnicity, class, gender, and sexual orientation as it plays out organically, relationally, historically, and politically.

6. *Latina/o Aesthetics* - The development of an appreciation and awareness of the aesthetics evident in Latina/o art, music, theatre, literature, and other artistic expressive forms and styles.

Graduate Study

At present, no program for graduate degrees in Latina/o Studies is offered; however, courses may be counted at the graduate level.

Latina/o Studies (CHST)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1030. Social Justice in the 21st Century. 3. [I,D◀▶(none)] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with WMST/AIST/AAST/AMST 1030. Enrollment preference will be given to We The People FIG students.

1100. Introduction to Chicano Studies. 3. [CS,D◀▶(none)] Provides a basic understanding of the historical, social, and cultural context of the Mexican American Chicano people. Examines the major theoretical and conceptual frameworks which explain the Mexican American Chicano experience. Examines the comparative relations with other groups and major social and policy issues. Provides an introduction to the conduct of research in field.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1300. Introduction to Latina/o Studies. 3. [(none)◀▶H] The U.S. Latina/o immigrant experience is a particular focus of this course, including its role in the incorporation of Latinos into U.S. society. Through readings, presentations, class discussion, videos, and other activities, students examine historical and contemporary issues affecting Latinos including but not limited to immigration, language, identity, national origin, education, politics, employment, and economic mobility.

2001. Gender and Ethnicity in Science. 3. Covers factors affecting the performance and retention of women and ethnic minority students in science careers, and science as a social construct. Cross listed with WMST 2001.

2060. Special Topics in____. 3. Special topics course through which regular or visiting faculty can present progress regarding specialized or new topics.

2360. Mexican American Literature. 3. [CH,D◀▶(none)] Discusses literary reflections of Chicanismo. Studies literature of the Hispanic Southwest, Mexican American folklore and the Chicano and post-Chicano movement. Cross listed with ENGL 2360. *Prerequisite:* WA.

2370. Chicano History : Origins to 1900. 3. [CS,D◀▶(none)] General survey that traces the geographic distribution and historical processes that have shaped the life experiences, socio-economic development and cultural contributions of peoples of Mexican descent in the United States from their indigenous and Hispanic origins to the end of the 19th century. Cross list with GEOG 2370/HIST 2370.

2385. Chicano History: 1900 to Present. 3. General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with HIST 2385.

3080. Southwest Spanish. 3. Examines the dialects of Southwest Spanish and explores their development from the Spanish conquest to the present, focusing on the linguistic systems themselves as well as on the historical, political and social factors that have influenced the development of the various dialects. Cross listed with SPAN 3080. *Prerequisite:* SPAN 1020 or equivalent proficiency.

3200. Perspectives in Chicana Studies 3. [D◀▶(none)] An interdisciplinary introduction to the study of the history, culture, gender relations, and contemporary political, economic status of Chicanas/Mexican American women. Examines the origins, development of Chicana studies as a major emphasis in Chicano/Chicana studies. Cross listed with WMST 3200. *Prerequisite:* CHST 1100 or junior standing.

3560. Chicano Community Organizations. 3. Introduction to the origins, development and contemporary status of community organizations and service agencies in the Mexican American community in general and in the Wyoming and Rocky Mountain regions. *Prerequisite:* CHST 1100.

3800. Chicanas/os in Contemporary Society. 3. [CS,D◀▶(none)] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with AMST/WMST 3800. *Prerequisites:* CHST 1100 or WMST 1080 or AMST 2010.

4100. U.S. Latina/o Theater. 3. [CA,D◀▶(none)] Designed to provide an overview of United States Latina/o Theater. Through a variety of delivery methods, students are instructed on the various categories that directly impact U.S. Latina/o Theater such as political theatre, gay/lesbian theatre, border issues, race, class, gender, and sexuality. Cross listed with WMST 4100. Dual listed with CHST 5100. *Prerequisite*: 6 hours of CHST or WMST.

4470. Studies in Chicano Folklore. 3. [CH,D◀▶(none)] Provides a survey of the origins, development and contemporary folklore of the Mexican American Chicano people of the United States with comparative relation to Mexico and other groups in the United States. Cross listed with ENGL 4470. *Prerequisites:* CHST 1100 and WA.

4485. U.S. Latino Diaspora. 3. Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with HIST/INST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.

4496. History of Mexico. 3. Intensive course in Mexican development. Emphasizes the 20th century, especially the Mexican Revolution of 1910, showing how this nation transformed itself into a modern nation-state. Includes diplomatic relations with the U.S., incorporation of Indians, church-state relations, uses of land and other natural resources, role of the military and growth of Mexican nationalism. Cross listed with HIST 4496. *Prerequisite:* HIST 2380. (Normally offered fall semester)

4525. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans and Anglo Americans from the fifteenth century to the present. Cross listed with AIST/HIST 4525. *Prerequisite:* HIST 1210/1211, 1220/1221. (Normally offered spring semester)

4546. Agriculture: Rooted in Diversity. 3. [C,D◀▶(none)] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/ENGL/FCSC/HIST/AMST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimilation, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with AMST/INST/WMST 4650. Dual listed with CHST 5650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

4675. U.S. Women of Color. 3. [D◀▶(none)] Examines in comparative perspective the social conditions that shape the experiences of Chicanas/Latinas in the U.S. Students gain an understanding of how the intersection of race, class, gender, and sexuality shape the lived experiences of U.S. women of color through ideological, economic, and political forces. Cross listed with AAST/WMST 4675. *Prerequisite:* junior standing and/or a combination of 3-6 hours of any level of CHST, WMST, or AAST coursework.

4975. Independent Studies. 1-3 (Max 6). Independent study in Chicano studies research. *Prerequisite*: junior standing.

4990. Topics in Chicano Studies. 1-3 (Max 6). A special topics course through which regular and visiting faculty can explore regarding specialized or new research topics regarding Chicano studies. Prerequisite: junior standing.

5100. U.S. Latina/o Theater. 3. [CA,D)◀▶(none)] Designed to provide an overview of United States Latina/o Theater. Through a variety of delivery methods, students are instructed on the various categories that directly impact U.S. Latina/o Theater such as political theatre, gay/lesbian theatre, border issues, race, class, gender, and sexuality. Cross listed with WMST 5100. Dual listed with CHST 4100. *Prerequisite*: 6 hours of CHST or WMST.

5650. Women, Gender & Migration. 3. From an international context and perspective, this course examines the gendered transformations immigrant women experience. Gender, theories of international migration, assimila-

tion, race, ethnicity, and identity transformation serve as categories of analysis. From a cross-discipline comparative approach, we focus on women's lives to examine differences and similarities to complicate notions of immigration. Cross listed with AMST/INST/WMST 5650. Dual listed with CHST 4650. *Prerequisites*: Junior standing and 6 hours of AMST, CHST, INST, and/or WMST coursework or instructor approval.

Life Sciences Program

138 Aven Nelson Building, 766-4158
FAX: (307) 766-2851
Web site: www.uwyo.edu/lifescience
Program Director: Mark E. Lyford

The Life Sciences Program consists of all LIFE prefix courses. These courses support the life science majors and several non-life science majors across campus. The number of LIFE courses taken by life science and other majors is determined by the departments that offer the majors. The curriculum intends to provide life-science majors with both breadth and depth in the basic life sciences, and non-science majors with exposure to key concepts in biology and an understanding of the connections between science and society. The program courses also expose students to the fields of cell and molecular biology, genetics, ecology, and evolution, and they familiarize students with the diversity of life on the planet. Courses within the curriculum address four fundamental goals at a level appropriate for each course:

1) Acquisition, Application and Synthesis of Knowledge
2) Communication Skills
3) Critical Thinking and Problem Solving
4) Research Skills

Life Sciences (LIFE)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1001 [BIOL 1001]. Biology as Culture. 2. [I,L◀▶(none)] Introduces Life Science majors to the role of modern biology in society, the methods biologists use to generate knowledge, methods of accessing data, use of data, and the relationship between biology and other sciences. (Normally offered fall semester)

1002 [BIOL 1002]. Discovering Science. 4. [S◀▶PN] Integrates Biology, Chemistry, Physics, and Earth Science for non-science majors. Fundamental concepts from each discipline are concurrently addressed through lectures, while weekly laboratory activities and discussion groups enable students to learn how to do science and place it into larger societal issues. *Prerequisites:* none. (Normally offered fall semester)

1003 [BIOL 1003]. Current Issues in Biology. 4. [SB◀▶PN] Emphasizes central themes of biology – cell biology, genetics, evolution, ecology – and scientific methodology by focusing on current issues in biology. Taught in 3 two-hour blocks of lecture/discussion each week, with one usually devoted to laboratory explorations. Students cannot receive duplicate credit for LIFE 1000, 1010 or 1020. *Prerequisites:* none. (Normally offered spring semester)

1010 [BIOL 1010]. General Biology. 4. [SB◀▶PN] Fundamental concepts of biology, including basic chemistry of living systems, cell structures and functions, energy relations, genetics, molecular biology, ecology, population dynamics and evolutionary theory. Living invertebrate and vertebrate organisms studied during some lab meetings. Laboratory is required. Students who have credit in LIFE 1000, 1003, or 1020 may not receive duplicate credit for this course. *Prerequisite:* grade of C or better in MATH 0921 or level 2 on the Math Placement Exam or math ACT of 21 or math SAT of 600. (Normally offered fall and spring semester)

1020 [BIOL 1020]. Life Science. 4. [SB◀▶PN] An integrated lab and lecture emphasizing fundamental principles of biology including cell structure and function, genetics, ecology, evolution and organismal biology. Considers applications of these principles to societal issues such as the conservation of biodiversity, overpopulation and global environmental changes, biotechnology, and human wellness and disease. Duplicate credit will not be given for LIFE 1000, 1003, or 1010. *Prerequisites:* elementary education majors only; concurrent enrollment in EDEL 1430. (Normally offered fall and spring semesters)

2002 [BIOL 2002]. Global Ecology. 3. [SB,G◀▶(none)] Provides a global perspective on ecological processes, biodiversity, climate change, and the environmental consequences of human actions. Students develop a global awareness of the role of ecology in international human affairs, and how this influences relationships between the developed and developing worlds. For majors and non-majors. *Prerequisite:* LIFE 1002, 1003, or 1010.

2022 [BIOL 2022]. Animal Biology. 4. An integrative course addressing the evolution, anatomy, physiology, and ecology of animals. Continues building upon the four themes in LIFE 1010, cell and molecular biology, genetics, evolution, and ecology. Preserved animal specimens are dissected during some labs. Intended for students majoring in the life sciences. Laboratory is required. *Prerequisite:* LIFE 1010 with a grade of C or better. (Normally offered spring semester)

2023 [BIOL 2023]. Biology of Plants and Fungi. 4. An integrated course dealing with the central themes of biology including cell and molecular biology, genetics, evolution and ecology of plants and fungi. Intended for students majoring in the life sciences. Laboratory is required. *Prerequisite:* LIFE 1010 with a grade of C or better. (Normally offered fall semester).

2050 [BIOL 2050]. Biology of Aging and Human Development. 3. Reviews cellular, physiological, endocrine, anatomical and nutritional aspects to aging. Format relates topics, such as exercise, nutrition and evolution, to aging. Students gain insight to problems related to research in aging and its potential impact on society. Uses video-taped lectures from field experts. *Prerequisite:* LIFE 1010. (Normally offered spring semester)

3050 [BIOL 3050/BIOL 4000]. Genetics. 4. Introduces principles of heredity and variation in living organisms, including a study of the nature of the genetic material and its transmission, influence of heredity and environment on the development of individual characters, as well as evolution of organisms and artificial selection of plant and animal varieties. Emphasizes application to today's society. *Prerequisite:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each. (Normally offered fall and spring semester)

3400 [BIOL 3400/ BIOL 2400]. General Ecology. 3. Presents fundamental concepts in population and ecosystem ecology to both majors and non-majors. Emphasizes basic principles and their use in manipulated ecosystems. *Prerequisite:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each. (Normally offered fall and spring semesters)

3410 [BIOL 3410/BIOL 2410]. Introduction to Field Ecology. 2. Field and laboratory course. Introduces methods used in plant and animal ecology. *Prerequisite:* LIFE 3400 (may be concurrently enrolled). (Normally offered fall semester)

3500 [BIOL 3500]. Evolutionary Biology. 3. Presents modern evolutionary theory. Examines evolution and evolutionary mechanisms from several viewpoints, with particular attention given to genetic mechanisms under-

lying processes of evolution and speciation. *Prerequisites*: completion of LIFE 1010, one of LIFE 2022, 2023, or MICR/MOLB 2021, and LIFE 3050 with a grade of C or higher in each. (Normally offered fall semester)

3600 [BIOL 3600/ BIOL 4600]. Cell Biology. 4. Focuses on cell structure, cell function and the regulation of cell processes. Examines many levels of organization, ranging from single molecules and individual cells to multicellular systems and the whole organism. Discussion section is required. *Prerequisites:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each, and one semester of Organic Chemistry.

4975 [BIOL 4975]. Practicum in Laboratory Teaching. 1-3 (Max. 3). Intended to give undergraduate students experience teaching in a laboratory setting. Working closely with an instructor and a graduate teaching assistant, students will assist in the teaching of biology laboratories during the semester and participate in weekly sessions centered on teaching, learning, and assessment. *Prerequisites:* completion of a 1000-level LIFE course and consent of instructor.

4976 [BIOL 4976]. Practicum in Laboratory Teaching II. 1-3 (Max 3). Intended to build on the foundation of Biology 4975. Students would work under the dual supervision of the course instructor and the graduate teaching assistant to gain further first-hand experience with teaching in biology laboratories during the semester. *Prerequisite:* LIFE 4975.

Mathematics

202 Ross Hall, 766-4221
FAX: (307) 766-6838
Web site: www.uwyo.edu/math
Department Head: Farhad Jafari

Professors:

MYRON B. ALLEN III, A.B. Dartmouth College 1976; M.A. Princeton University 1978; Ph.D. 1983; Professor of Mathematics 1992, 1983.

CRAIG C. DOUGLAS, B.A. University of Chicago 1977; M.S. Yale University 1977; M.Phil. 1980; Ph.D. 1982; SER Professor of Mathematics 2008.

STEFAN HEINZ, B.S. Humboldt University 1986; M.S. Heinrich-Hertz University 1986; Ph.D. 1990; Professor of Mathematics 2013, 2004.

FARHAD JAFARI, B.S. University of Wisconsin-Madison 1978; M.S. 1980; Ph.D. 1983; M.A. 1986; Ph.D. 1989; Professor of Mathematics 1999, 1991.

G. ERIC MOORHOUSE, B.S. University of Toronto 1980; M.S. 1984; Ph.D. 1987; Professor of Mathematics 2011, 1989.

PETER POLYAKOV, M.S. Moscow State University 1967; Ph.D. 1971; Professor of Mathematics 1998, 1993.

BRYAN L. SHADER, B.S. University of Wyoming 1984; M.S. University of Wisconsin-Madison 1987; Ph.D. 1990; Professor of Mathematics 2000, 1990.

Associate Professors:

CHARLES ANGEVINE, B.S. Brown University 1980; Ph.D. Cornell University 1983; Associate Professor of Mathematics 1989, 1984.

HAKIMA BESSAIH, M.S. University of Algiers 1992; Ph.D. Scuola Normale Superiore of Pisa 1999; Associate Professor of Mathematics 2008, 2004.

MICHELLE T. CHAMBERLIN, B.S. Colorado State University 1997; M.S. 1999; Ph.D. Purdue University 2002; Associate Professor of Mathematics 2012, 2007.

FREDERICO da CUNHA FURTADO, B.S. Federal University of Minas Gerais 1979; M.S. Federal University of Rio de Janeiro 1984; Ph.D. Courant Institute 1989; Associate Professor of Mathematics 2002, 1997.

VICTOR GINTING, B.S. Institut Teknologi Bandung Indonesia 1995; M.S. Texas A&M University 1998; Ph.D. 2004; Associate Professor of Mathematics 2012, 2007.

CHRISTOPHER HALL, B.S. University of Colorado, Boulder 1997; Ph.D. Princeton University 2003; Associate Professor of Mathematics 2013, 2009.

SYLVIA A. HOBART, B.A. University of California-Santa Cruz 1980; Ph.D. University of Michigan 1987; Associate Professor of Mathematics 1993, 1987.

LYNNE IPINA, B.S. South Dakota State University 1972; M.S. New York University 1978; Ph.D. 1986; Associate Professor of Mathematics 1992, 1985.

LONG LEE, B.S. National Taiwan University, Taipei 1988; M.A. University of Maryland 1998; Ph.D. University of Washington 2002; Associate Professor of Mathematics 2011, 2005.

GREGORY LYNG, B.A. Saint Olaf College 1996; M.A. Indiana University 1999; Ph.D. 2002; Associate Professor of Mathematics 2010, 2005.

CHANYOUNG LEE SHADER, B.S. Yonsei University 1985; M.A. University of Wisconsin-Madison 1991; Ph.D. 1992; Associate Professor of Mathematics 1999, 1992.

DAN STANESCU, B.Eng. Polytechnic Institute, Romania 1986; M.Eng. McGill University, 1994; Ph.D. Concordia University 1999; Associate Professor of Mathematics 2008, 2003.

JASON WILLIFORD, B.A. University of Pennsylvania 1998; Ph.D. University of Delaware 2004; Associate Professor Mathematics 2014, 2012.

MAN-CHUNG YEUNG, B.S. Jinan University, China 1986; M.Ph. University of Hong Kong 1990; Ph.D. University of California-Los Angeles 1997; Associate Professor of Mathematics 2005, 2001.

Assistant Professors:

RONGSONG LIU, B.A. Henan Normal University 1999; M.A. Fudan University 2002; Ph.D. York University 2006; Assistant Professor of Mathematics and Program in Ecology 2009.

TYRRELL McALLISTER, B.S. University of California, Davis 2001; Ph.D. 2006; Assistant Professor of Mathematics 2009.

ZHUANG NIU, B.S. Wuhun University 1998; M.S. 2001; Ph.D. University of Toronto 2005; Assistant Professor of Mathematics 2012.

Senior Lecturers:

JOHN SPITLER, B.S. Vanderbilt University 1977; M.S. University of Wyoming 1998; Assistant Research Scientist 1994; Senior Lecturer in Mathematics 2009, 2000.

WILLIAM WEBER, B.S. University of Wyoming 1988; M.S. 1992; Senior Lecturer in Mathematics 2012, 2001.

Associate Lecturers:

DAVID ANTON, B.S. North Dakota State University 2001; M.S. University of Wyoming 2007; Associate Lecturer in Mathematics 2012, 2005.

JEFFREY SELDEN, B.S. New Mexico State University 1998; Ph.D. University of Arizona 2004; Associate Lecturer in Mathematics 2014, 2009.

Assistant Lecturers:

NATHAN CLEMENTS, B.S. Brigham Young University-Idaho 2007; M.S. Idaho State University 2009; D.A. 2012; Assistant Lecturer in Mathematics 2012.

CYNTHIA VADNAIS, B.S. University of Wyoming 1987; Assistant Lecturer in Mathematics 1992.

Adjunct Professors:

John Hitchcock, Robert Kansky, Dan Marchesin, John McInroy, Michael Pernice, Richard Shumway, Shaochang Wo.

Professors Emeriti:
Leonard Asimow, Robert Buschman, Benito M. Chen-Carpentier, George C. Gastl, John H. George, Syed Husain, Eli Isaacson, Terry Jenkins, A. Duane Porter, Ben G. Roth, John Rowland, Raymond Smithson.

"For the things of this world cannot be made known without a knowledge of mathematics."--Roger Bacon

Virtually every student at UW will take one or more math courses to fulfill graduation requirements. The intent is to illustrate the esthetics inherent in mathematics, and to provide students with the quantitative skills needed for today's careers.

Mathematics majors receive a broad and deep view of the mathematical sciences. They develop their mathematical thinking and communications skills in algebra, analysis, and applied math. They learn a variety of technological tools necessary for jobs in education, business, government, and industry. In addition to our math classes, the department offers a variety of opportunities to enrich the undergraduate experience. Students can participate in weekly seminars, summer research projects, Putnam Team competitions, and the math club.

Mathematics Placement

All UW math courses have prerequisites which are detailed in the course listings below. These are to assure that each student has the best possible opportunity for success in the course. In accordance with this, *all students registering for a math course will have their records checked in order to determine whether the prerequisite is satisfied.*

A computerized prerequisite check is run prior to the start of every semester. *Students who preregistered for a math course but have not satisfied the prerequisites at the time of the check will be automatically dropped from the course.*

Prerequisites for courses numbered 2200 or lower (except 1105 and 2120), and 2350 (Business Calculus), may be satisfied in one of four ways:

1. Obtain a grade of C or better in a prerequisite course. Note that non-credit courses from out-of-state colleges are not accepted as prerequisites.
2. Pass the Mathematics Placement Exam (MPE) at the stated level within one year of the start of the course.
3. Obtain a sufficiently high score on one of the following standardized exams within three years of the start of the course: ACT composite math score or SAT quantitative score.
4. Obtain a sufficiently high score on one of the following standardized exams: AP Calculus, CLEP, or IB.

More information on mathematics placement may be obtained from the Center for Advising on Mathematics Placement (CAMP), 202 Ross Hall, 766-4221, or at www.uwyo.edu/mpe.

Duplication of Courses

To avoid loss of credit because of duplication of course content, please note the following: (a) students who have taken MATH 1450 should not take MATH 1400 or MATH 1405; (b) students who have taken MATH 1400 and MATH 1405 should not take MATH 1450; (c) students who have had MATH 1400 may enroll in MATH 1450; however, only two additional hours of credit will be granted.

Undergraduate Major

A degree in mathematics should prepare students to enter either graduate studies or the workforce with a skill set that could only come from an intense study of both quantitative reasoning and rigorous proof. This can be accomplished by focusing on the following goals for our undergraduate major:

1. Develop mathematical thinking and communication skills
2. Develop skills with a variety of technological tools
3. Provide a broad view of the mathematical sciences
4. Require study in depth

The required lower division core courses for a mathematics major are Calculus 1, 2, and 3 (MATH 2200,2205,2210), Differential Equations (MATH 2310), Linear Algebra (MATH 2250), and the Math Major Seminar (MATH 2800).

At the upper division, all mathematics majors must take Analysis 1 (MATH 3205), Algebra 1 (MATH 3500) and Introduction to Scientific Computing (MATH 3340). These courses, known as the transition courses, introduce students to the three main areas of mathematics research currently represented in the department.

Every mathematics major must select one two-course sequence (MATH 4200/4205, MATH 4510/4520, or MATH 4340/4440) that builds on the corresponding transition course. This sequence provides the student with an opportunity to study one of these areas in greater depth.

Finally, an additional 12 credits of upper division math courses (3000 and above) are required. It is recommended that these courses be selected to provide a broad view of mathematics.

Two of the math electives may be chosen from a list of approved courses that have significant math content, upon approval by the student's advisor. More details about such courses are available on the math department's web site, math.uwyo.edu.

Only grades of C or better will be accepted for the major.

Undergraduate Minor

The minor in mathematics focuses on fundamental aspects of mathematics that are essential for further study in mathematics and are also useful in a variety of other disciplines. Students minoring in mathematics may customize the minor by choosing the appropriate transition course and upper-division electives to match their needs.

The required lower division core courses for a mathematics minor are Calculus 1, 2, and 3 (MATH 2200,2205,2210), Differential Equations (MATH 2310), Linear Algebra (MATH 2250), and the Math Major Seminar (MATH 2800).

At the upper division, all mathematics minors must take ONE of Analysis 1 (MATH 3205), Algebra 1 (MATH 3500) or Introduction to Scientific Computing (MATH 3340), as well as 6 additional credits of upper division math courses (3000 and above).

Two of the math electives may be chosen from a list of approved courses that have significant math content, upon approval by the student's advisor. More details about such courses are available on the math department's web site, math.uwyo.edu.

Only grades of C or better will be accepted for the minor.

Undergraduate Interdisciplinary Computational Science Minor

In recognition of the importance of modeling and simulation in an increasing number of applications, the Undergraduate Interdisciplinary Computational Science Minor is intended to help prepare science, math, and engineering students for leading roles in their professions.

The Undergraduate Minor in Computational Science is based on the following requirements:

1. The student must earn 15 credit hours in specified courses.
2. Within the 15 credits, the student must earn 9 credits at the upper-division level (3000 or above).
3. Within the 15 credits, the student must earn 6 credits outside of her/his major.
4. Within the 15 credits, the student must earn at least 6 credits in core courses.
5. Only grades of C or better will be accepted for the minor.

The 15 hours of coursework are divided between core and elective courses as listed below.

Core Courses:

- Numerical Analysis (Math 4340/COSC 4340)
- High-Performance Computing (Offered as a topics course).
- Scientific Computing (MATH 3340/COSC 3340).
- Statistical Computing and Modeling (STAT 4460).

Elective Courses

- Computational Biology (BOT 4550/5550)
- Algorithms and Data Structures (COSC 3020)
- Mathematical and Computational Methods in Physics (PHYS 4840)
- Molecular Modeling (CHEM 4560/5560)
- C with Numerical Methods for Engineers (ES 3070)
- Mathematical Modeling (MATH 4300)
- Introduction to Finite Element Methods (ME 4040)
- Principles of Database Systems (COSC 4820)

Graduate Study

The Department of Mathematics offers programs leading to the degrees of master of arts, master of science, master of arts in teaching, master of science in teaching, and the doctor of philosophy.

The requirements for these degrees reflect our belief that mathematicians should have a broad foundation in the core areas of algebra, analysis, and applied mathematics as well as the experience of a more intensive investigation of a specialized area. We provide this within a flexible structure that recognizes the individual interests and varied backgrounds of our students.

Program Specific Admission Requirements

To be competitive for admission, applicants must have strong backgrounds in mathematics. Generally, this means a bachelor's degree in mathematics or a closely related discipline. All applicants should have substantial coursework beyond the calculus sequence; courses in differential equations, linear algebra, and, in particular, courses in abstract algebra and analysis are highly recommended. A solid performance on the GRE Subject Test in Mathematics can demonstrate the applicant's mastery of these subjects. The GRE Subject Test in Mathematics is therefore recommended but is not required.

The GRE General Test is required, with a minimum Quantitative Reasoning score of 157 and Verbal score of 140. International applicants need a composite TOEFL score of 76 or an IELTS score of 6.5.

The TOEFL requirement may be waived if a student comes from an English speaking country or has earned a degree from an accredited institution with instruction in English within a year of applying. ETS only reports TOEFL scores taken within two years of the date of request.

Requirements for Admission for M.A.T. or M.S.T.

Applicants are required to have:

(a) A valid teaching endorsement in any state or educational requirements satisfied for secondary teaching;

(b) courses equivalent to MATH 3205, 3500, 4000 and 4600;

(c) a course in computer programming.

Students who enter the program with a deficiency in the courses listed in (b) must take them at UW, but these courses may not be counted toward the course requirements of the M.S.T./M.A.T. program.

Graduate Interdisciplinary Computational Science Minor

In recognition of the importance of modeling and simulation in an increasing number of applications, the Graduate Interdisciplinary Computational Science Minor is intended to help prepare science, math, and engineering students for leading roles in their professions.

Requirements

- The student must earn 15 credit hours in specified courses.
- Within the 15 credits, the student must earn at least 12 credits in graduate level classes (5000).
- Within the 15 credits, the student must earn 6 credits outside of her/his department.
- Only grades of B or better will be accepted for a course counting towards the minor.
- For all students, the 15 hours of coursework will be divided into 9 credit hours of core courses and 6 credit hours of electives.

Core Courses

- Computational Methods in Applied Sciences I (MATH 5310/COSC 5310), 3 hrs.
- Introduction to High-Performance Computing (COSC 5010), 3 hrs.
- Computational Methods II (MATH 5340/COSC 5340), 3 hrs.
- Computational Biology (BOT 4550/5550), 4 hrs.
- Groundwater Flow and Transport Modeling (GEOL 4030/5030), 3 hrs.
- Computational Fluid Dynamics I (ME 5461), 3 hrs.
- Computational Fluid Dynamics II (ME 5462), 3 hrs.
- Computational Methods in Statistics (STAT 5660), 3 hrs.

Electives

- Analysis of Algorithms (COSC 5110), 3 hrs.
- Advanced Bayesian Statistics (STAT 5680), 3 hrs.
- Bayesian Data Analysis (STAT 5380), 3 hrs.
- High-Performance Computing in Geosciences, 2 hrs.
- Mathematics Modeling of Processes (MATH 5320), 3 hrs.
- Molecular Modeling (CHEM 4560/5560), 3 hrs.
- Mathematical and Computational Methods in Physics (PHYS 4840), 3 hrs.
- Mathematical Modeling (MATH 4300), 3 hrs.

Graduate Assistantships

The mathematics department employs approximately 25 graduate assistants each year. Assistantships include a full tuition and fee waiver, a monthly living stipend, and health insurance. Ph.D. students normally receive a higher stipend than master's students.

Teaching assistants teach an undergraduate course each semester.

Students may also compete for research assistantships, provided that their interests align with an externally funded research project.

Summer support is not guaranteed but is usually available through teaching and research opportunities.

Renewal of funding and continuation in the mathematics graduate program is dependent upon the student's adequate progress towards graduation.

Program-Specific Degree Requirements

Master's Programs: M.A. and M.S. Plan A and Plan B

Students in the program must:

- Maintain a 3.0 cumulative GPA.
- Complete 30 hours of formal mathematics coursework at the 5000 level.
- Within the 30 hours of 5000-level courses, complete the following courses with a grade of B or better: MATH 5200, 5230, 5310, 5400, 5500, and 5550.
- Within the 30 hours of 5000-level courses, pass 1 hour of MATH 5800-01, Professional Development.
- Within the 30 hours of 5000-level courses, the Plan A student must complete 4 hours of MATH 5960, Thesis Research. At least 26 hours of 5000-level coursework must be math-content courses (not thesis research).
- The student must pass the foundation exam.
- The student must prepare a master's thesis (Plan A) or a master's paper (Plan B) and give an oral defense.

Master's Program: Second Option for Plan B Degree

A second M.A. or M.S. option exists for the Plan B student. In lieu of writing a paper, the student takes a sequence of three 5000-level courses. The sequence must be approved by the student's adviser and the mathematics graduate committee. Two of the courses must be mathematics-department offerings, and the third may be either a mathematics course (including reading/topics courses) or a course from another department in a related field.

A student graduating under this option must:

- Maintain a 3.0 GPA.
- Complete 36 hours of formal coursework at the 5000 level.
- Within the 36 hours, complete with a grade of B or better: Math 5200, 5230, 5310, 5400, 5500, 5550.
- Within the 36 hours, pass 1 hour of Math 5800-01, Professional Development.
- Within the 36 hours, complete with a grade of A or B a 3-course sequence as approved by the student's advisor and the graduate committee.
- Pass the foundation exam.
- Write a short paper and give a presentation on the 3-course sequence.

In approving the student's proposal for this option, the graduate committee and the adviser will consider how the writing and independent study spirit of the Plan B option are fulfilled within the recommended plan.

Master of Arts in Teaching or Master of Science in Teaching

This degree is intended for in-service high school or middle school math teachers. The M.S.N.S. (Master of Science in Natural Science) Math option, through the Science and Math Teaching Center of the College of Education, is an alternative for middle school teachers.

Candidates for the M.S.T. or M.A.T. must take at least 30 hours of coursework at the 4000 level or above, of which at least 18 hours must be math courses, and at least 24 hours must be in the College of Arts and Sciences.

GPA of 3.0 in math courses is required.

EDRE 5530 or 5550 is recommended as part of the student's program.

The student prepares a master's thesis (Plan A) or master's paper (Plan B) and gives an oral defense.

Students must have two years' teaching experience at the precollege level, which may be completed during the degree program.

Doctoral Program

The student must maintain a 3.0 cumulative GPA.

The student must teach two semesters of college mathematics.

The student must complete a combination of 72 hours of coursework and dissertation research. Within the 72 hours, a maximum of 12 hours can be at the 4000 level, and 42 hours must be formal courses at the 5000 level. The courses must be mathematics courses or courses with significant mathematical content, as approved by the department's graduate committee.

Within the 42 hours of 5000-level courses, the student must:

- Complete MATH 5200, 5230, 5310, 5400, 5500, and 5550 with a grade of B or better.
- Take a broadening course as defined by the department and pass with a grade of B or better.
- Take two hours of MATH 5800-02, Seminars and Colloquia.
- Complete courses distributed in three areas: algebra, analysis, and applied mathematics. The student must take at least two courses in each of two categories and at least one course from the third category. The department maintains a list of course categories.

In addition, the student must:

- Pass the foundation exam, the qualifying exam in the student's research area, and the preliminary exam.
- Write a dissertation containing the student's original mathematical results and present an oral defense of the research.

Mathematics (MATH)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Problem Solving. 3. [QA◀▶Q] For students not planning to enroll in MATH 1400, 1450 or a calculus course. Examines modern topics chosen for their applicability and accessibility. Provides students with mathematical and logical skills needed to formulate, analyze and interpret quantitative arguments in a variety of settings. Introduces statistics and stresses the use of a calculator. *Note:* MATH 1000 is neither a prerequisite nor suitable preparation for MATH 1400 (College Algebra). *Prerequisite:* grade of C or better in Math 0921 or Level 2 on the Math Placement Exam or Math ACT of 21 or Math SAT of 600.

1050. Finite Mathematics. 3. [QB◀▶Q] Introduces finite mathematics for majors not requiring calculus. Includes matrix algebra, Gaussian elimination, set theory, permuta-

tions, probability and expectation. *Prerequisite:* grade of C or better in MATH 1000, 1400 or 1105 or Level 4 on the Math Placement Exam or Math ACT of 26 or Math SAT of 600.

1100. Number and Operations for Elementary School Teachers. 3. [QA◀▶(none)] For prospective elementary school teachers; purpose is to prepare students to be competent in teaching the major concepts and skills related to the real number system and four arithmetic operations. Includes asking and answering critical questions about subsets of the real number system, including natural, integer, and rational numbers. *Prerequisite:* grade of C or better in MATH 0921 or Level 2 on the Math Placement Exam or Math ACT of 21 or Math SAT of 600.

1105. Data, Probability, and Algebra for Elementary School Teachers. 3. [QB◀▶Q] Continuation of MATH 1100 for prospective elementary teachers; emphasis is on asking and answering critical questions about our world through algebra, probability, and data analysis to prepare students to be competent in teaching these major concepts. Explorations focus on representing, analyzing, and generalizing patterns and the chances of future events. *Prerequisite:* grade of C or better in MATH 1100.

1123. Math, Music and Acoustics. 3. [(none)◀▶Q] For music majors and minors not planning to enroll in MATH 1400, 1450 or a calculus course. Serves as an introduction to the mathematics and physics underlying music and develops quantitative reasoning in a musical context. Topics include the wave nature of sound, intervals, scales, temperment, acoustics and psychoacoustics. Note: MATH 1123 is neither a prerequisite nor suitable preparation for MATH 1400. *Prerequisites:* grade of C or better in MATH 0921 or Level 2 on the Math Placement Exam or Math ACT of 21 or Math SAT of 600 and grade of C or better in MUSC 1030.

1400. College Algebra. 3. [QA◀▶Q] Emphasizes aspects of algebra important in the study of calculus. Includes notation of algebra, exponents, factoring, theory of equations, inequalities, functions, graphing and logarithms. For students who plan to enroll in a calculus course (MATH 2200 or 2350). Students receiving credit for MATH 1450 may not receive credit for this course. *Prerequisite:* grade of C or better in Math 0925 or Level 3 on the Math Placement Exam or Math ACT of 23 or Math SAT of 600.

1405. Trigonometry. 3. [QA◀▶Q] Emphasizes aspects of trigonometry important in the study of calculus. Interplay between trigonometric expressions and their graphs. Students are expected to use a graphing calculator in the course and on exams. See instructor for specifications. Topics include: angle measurement, trigonometric functions, graphing, laws of sines and cosines, identities, equations, polar equations and graphs, vectors, complex numbers, DeMoivre's theorem. This course is designed for students with little or no prior knowledge of trigonometry who plan to enroll in MATH 2200. Students receiving credit for MATH 1450 may not receive credit for this course. *Prerequisite:* grade of C or better in MATH 1400 or Level 4 on the Math Placement Exam or Math ACT of 25 or Math SAT of 600.

1450. Algebra and Trigonometry. 5. [QA◀▶(none)] Emphasizes aspects of algebra, trigonometry and problem solving important in the study of calculus. Functions and their applications to real world problems. Classes of functions including polynomial, exponential, logarithmic and trigonometric functions. Intuitive introduction to the idea of limit and sequence which are developed further in the calculus sequence. For the student with considerable prior exposure to trigonometry and algebra. Graphing calculators are used frequently in class and on assignments. See instructor for specifications. Students with both MATH 1400 and 1405 credit may not receive credit for this course. *Prerequisite:* grade of C or better in MATH 0925 or Level 3 on the Math Placement Exam or Math ACT of 23 or Math SAT of 600.

2120. Geometry and Measurement for Elementary School Teachers. 3. Continuation of MATH 1105 for prospective elementary teachers; emphasis is on asking and answering critical questions about spatial reasoning as evident in the real world. Includes investigations of two- and three-dimensional shapes and their properties, measurements, constructions, and transformations to prepare students to be competent in teaching these concepts. *Prerequisite:* grade of C or better in MATH 1105.

2200. Calculus I. 4. [QB◀▶Q] Emphasizes physical science applications. Includes plane analytic geometry, differentiation, applications of the derivative, differential equations, integration and applications. *Prerequisite:* grade of C or better in MATH 1405 or 1450 or Level 5 on the Math Placement Exam or Math ACT of 27 or Math SAT of 600.

2205. Calculus II. 4. [(none)◀▶Q] Continues MATH 2200. Includes elementary functions, derivatives, integrals, analytical geometry, infinite series and applications. *Prerequisite:* grade of C or better in MATH 2200 or Advanced Placement credit in MATH 2200.

2210. Calculus III. 4. Continues MATH 2200, 2205. Includes vectors and solid analytic geometry, partial differentiation and multiple integration. *Prerequisite:* grade of C or better in MATH 2205 or Advanced Placement credit in MATH 2205.

2250. Elementary Linear Algebra. 3. Studies linear equations and matrices, vector spaces, linear transformations, determinants, orthogonality, eigenvalues and eigenvectors. *Prerequisite:* grade of C or better in MATH 2200 or 2350.

2300. Discrete Structures. 3. Introduces the mathematical concepts that serve as foundations of computer science: logic, set theory, relations and functions, graphs (directed and undirected), inductively defined structures (lists and trees), and applications of mathematical induction. Provides an introduction to abstract and rigorous thinking in advanced mathematics and computer science. Cross listed with COSC 2300. *Prerequisite:* grade of C or better in COSC 1030, MATH 2200 or 2350.

2310. Applied Differential Equations I. 3. Combines with MATH 3310 for a one-year series in applied mathematics. Includes solution of ordinary differential equations, integral transforms. Emphasizes construction of mathematical models arising in physical science and other areas. *Prerequisite:* grade of C or better in MATH 2205. (*Note:* MATH 2210 is required for the sequel.)

2350. Business Calculus. 4. [QB◀▶Q] Combines with MATH 2355 for a one-year series in business math, primarily for students in the College of Business. Includes review of functions, their graphs and algebra; derivatives and their applications; exponential and logarithmic functions; integration and applications; and applications are generally geared to business problems. *Prerequisite:* grade of C or better in MATH 1400 or Level 4 on the Math Placement Exam or Math ACT of 26 or Math SAT of 600.

2355. Mathematical Applications for Business. 4. Continues business and economic applications of mathematics. Also includes linear equations and programming, finance, probability and statistics. Mandatory computer lab using spreadsheet software will meet one day per week. *Prerequisite:* grade of C or better in MATH 2200 or 2350.

2800. Mathematics Major Seminar. 2. Introduces mathematics majors and minors to mathematical investigation and discovery. Typically, a range of topics are covered; may include reading assignments and group or individual work on projects for presentation. Offered S/U only.

2850 [3800]. Putnam Team Seminar. 2 (Max. 8). Preparation for the William Lowell Putnam Mathematical Competition. Problem solving strategies and mathematical content appropriate for the Putnam Exam are empha-

sized with problem sets taken from previous Putnam or other international math contests. Offered S/U only. *Prerequisites:* MATH 2200, 2205. (Offered fall semester)

3205. Analysis I: Elementary Real Analysis. 3. An introduction to rigorous analysis in one real variable. Includes a rigorous reconsideration of the elements of calculus: the real number system, numerical sequences and series, limits, continuity, differentiability, and Riemann integrability for function of one variable. Proof and mathematical writing are emphasized. Prerequisite: Grade of C or better in MATH 2205 and 2800.

3310. Applied Differential Equations II. 3. Continues MATH 2310. Includes partial differential equations, Fourier series, boundary value problems, series solutions of ordinary differential equations, linear algebra, linear systems of equations and numerical methods. *Prerequisite:* grade of C or better in MATH 2210 and 2310.

3340. Introduction to Scientific Computing. 3. Introduces basic numerical methods to solve scientific and engineering problems. Topics include: code structure and algorithms, basic numerical methods for linear systems, eigenvalue problems, interpolation and data fitting, nonlinear systems, numerical differentiation and integration. Cross listed with COSC 3340. Prerequisites: grade of C or better in MATH 2210.

3500. Algebra I: Introduction to Rings and Proofs. 3. Begins with common features of integers, rational numbers, and polynomials, leading to study of rings in general. Topics include divisibility, factorization, and modular arithmetic for integers and polynomials, and homomorphisms and ideals for rings. Proof techniques include direct proof, proof by contrapostive, mathematical induction, and proof by contradiction. *Prerequisites:* MATH 2800 and grade C or better in MATH 2250 or concurrent registration in MATH 2250.

3700. Combinatorics. 3. Provides an introduction to combinatorics and combinatorial algorithms, with applications to areas such as computer science and probability. Topics include general counting methods, recurrence relations, generating functions, inclusion-exclusion, partial orders, and graph theory. *Prerequisite:* grade of C or better in Math 2250. (Offered fall semester)

4000. History of Mathematics. 3. Explores the roots of mathematics and the people who made significant contributions to it. Mathematical subjects typically include algebra, calculus and number theory; both chronological and topical approaches are employed. *Prerequisite:* grade of C or better in MATH 2205. (Offered spring semester)

4100. Mathematics in the Elementary School. 1-6 (Max. 6). Acquaints prospective or experienced teachers of mathematics with newer developments in mathematics curriculum and materials. Emphasizes mathematical basis for courses in an elementary mathematics curriculum; organization and design of mathematics programs for grades K-7; and design and construction of curriculum and/or materials to meet specific needs of the teacher or school district. *Prerequisites:* grade of C or better in MATH 1105 and consent of instructor.

4150. Secondary School on Campus. 1-4 (Max. 8). Provides prospective teachers opportunity to study mathematics as it relates to the secondary school. Topics may vary from semester to semester. Emphasizes current trends and concerns of secondary school mathematics education. *Prerequisites:* grade of C or better in MATH 2205 and concurrent with EDSE 4271. (Offered fall semester)

4200. Analysis 2: Advanced Analysis. 3. A second course in analysis. Includes metric space topology, sequences and series of functions, and analysis in R^n. *Prerequisites:* grade of C or better in MATH 2210, 2250 and 3205. (Offered fall semester)

4205. Analysis 3: Undergraduate Topics in Analysis. 3. Special topics in analysis. Content varies. May be repeated for credit. *Prerequisite:* grade of C or better in MATH 4200. (Offered spring semester)

4230. Introduction to Complex Analysis. 3. Develops the theory of functions of one complex variable. Topics include the algebra and geometry of complex numbers, functions of one complex variable, elementary functions, limits, continuity and differentiation. Differentiability leads to the Cauchy theorem, integral theorems, power series, residue theory and applications to integration theory and boundary value problems. *Prerequisite:* grade of C or better in MATH 2210. (Offered spring semester)

4255 [4250]. Mathematical Theory of Probability. 3. Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Cross listed with STAT 4255. *Prerequisite:* grade of C or better in MATH 2210.

4265 [4260, 4010]. Introduction to the Theory of Statistics. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis testing. Cross listed with STAT 4265. *Prerequisite:* MATH 4255.

4300. Introduction to Mathematical Modeling. 3. A model of a real world problem captures the essential features of the problem, while scaling it down to a manageable size. In this course, symbolic tools and mathematical techniques are used to construct, analyze and interpret various mathematical models which arise from problems in the physical, biological and social sciences. *Prerequisite:* grade of C or better in MATH 2250 or 3310. (Offered fall semester)

4340. Numerical Methods for Ordinary and Partial Differential Equations. 3. Further develops the skills needed for computational problem solving and numerical analysis. Topics addressed include: one-step and linear multistep methods for solving initial value problems; truncation errors, stability analysis, and convergence of the numerical methods; finite difference approximation for elliptic equations and initial boundary value problems; iterative methods for sparse linear systems. Students typically complete a final project in this course. Cross listed with COSC 4340. *Prerequisites*: grade of C or better in MATH 2310 and MATH 3340. (Offered spring semester)

4400. Topics in Applied Math. 3. Presents topics in applied mathematics that are of importance for a variety of disciplines in science and engineering. Content will vary and may include: mathematical biology, vector calculus, mathematics for finance, dimensional analysis and perturbation methods and the calculus of variations. *Prerequisites:* grade of C or better in MATH 2250 and MATH 2210. (Offered fall semester)

4420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Dual listed with MATH 5420; cross listed with COSC/PHIL 4420. *Prerequisite:* PHIL 3420 or equivalent.

4440. Introduction to Partial Differential Equations I. 3. Survey of analytic methods for solving partial differential equations. Topics include: method of characteristics for solving first-order linear and quasi-linear equations; classification of second-order equations and canonical forms; background to separation of variables with applications; transform methods and Green functions; elliptic equations; heat and wave equations in one dimension. *Prerequisites:* grade of C or better in MATH 2210 and MATH 2310. (Offered spring semester)

4500. Matrix Theory. 3. Continuation from MATH 2250 of the study of matrices, an important tool in statistics, physics, engineering and applied mathematics in general. Concentrates on the structure of matrices, including diagonalizability; symmetric, hermitian and unitary matrices; and canonical forms such as Jordan form. *Prerequisite:* grade of C or better in MATH 2250. (Offered fall semester)

4510. Algebra II: Introduction to Group Theory. 3. An introduction to the fundamental properties of groups including: binary operations, groups, permutation groups, subgroups, homomorphisms, and quotient groups. *Prerequisite:* grade of C or better in MATH 3500. (Offered spring semester)

4520. Algebra III: Topics in Abstract Algebra. 3. Further examples and structure of rings and fields. Finite fields and number fields. Special topics. *Prerequisite:* grade of C or better in MATH 4510. (Offered fall semester)

4550. Theory of Numbers. 3. Studies topics in mathematics which are motivated by questions about integers. Topics include divisibility, congruences, diophantine equations, quadratic residues, primitive roots, primes, and representations of positive integers. *Prerequisite:* grade of C or better in MATH 3500. (Offered spring semester)

4600. Foundations of Geometry. 3. Broadens the student's understanding of the many faces of geometry and provides a context for the specific case of Euclidean geometry. Various approaches will be presented, including axiomatic, synthetic, coordinate, and transformational methods. *Prerequisite:* grade of C or better in MATH 3205 or 3500. (Offered fall semester)

4800. Seminar in Mathematics. 1-3 (Max. 6). Exposes students to problems and thinking in mathematics which would otherwise be unavailable. *Prerequisite:* consent of instructor.

4970. Professional Development in Teaching. 1. Undergraduate student will assist in classroom and discussion section teaching under the guidance of an instructor in Mathematics. Does not count towards Mathematics degree requirements. Offered Satisfactory/Unsatisfactory only. *Prerequisite:* Consent of instructor.

5090. Topics in the Foundations of Mathematics. 1-6 (Max. 9). *Prerequisites:* MATH 3000 and consent of instructor.

5100. Seminar in Elementary School Mathematics. 1-4 (Max. 8). A course to give graduate students in mathematics education, or in-service teachers, an in-depth view of new contents, materials, and strategies for teaching mathematics in elementary schools. The course is primarily designed to meet the needs of students working towards M.S.N.S., M.S.T., M.A.T. degrees. *Prerequisite:* 6 hours of MATH 4100.

5110. Modeling Flow Transport in Soil and Groundwater Systems. 4. Mathematical models are formulated and applied to simulate water flow and chemical transcript in soil and groundwater systems. Soil spatial variability and heterogeneity are considered in the modeling processes. Using and comparing models, students obtain the capability to transfer a physical problem to a mathematical model, to use numerical methods, such as the finite element methods, to solve the mathematical problem, and to correctly interpret the numerical outputs. Students develop and program numerical solutions for select problems and utilize existing codes for modeling a variety of comprehensive problems. Cross listed with SOIL 5110.

5140. Numbers, Operations, and Patterns for the Middle-level Learner. 3. Provides working middle-level mathematics teachers opportunities to understand and discuss numbers, their representations, and operations on them from an abstract perspective that includes elegant proof. Also emphasized is the role of language and purpose in composing definitions. Cross listed with NASC 5140. *Prerequisites:* admission to a university graduate program, in either degree or non-degree seeking status, and acceptance into the Middle-level Mathematics Program.

5150. Seminar in Secondary School Mathematics. 1-4 (Max. 18). Seminar in Secondary School Mathematics. *Prerequisite:* 6 hours of MATH 4150.

5160. Social and Historical Issues in Mathematics and the Middle-Level Learner. 3. Empowers teachers of middle-level mathematics to design more engaging experiences. Emphasizes the historical context for the development of mathematics, especially its symbols, tools, personalities, and classic problems. Cross listed with NASC 5160. *Prerequisites:* admission to a UW graduate program, in either degree or non-degree seeking status, and acceptance into the Middle-level Mathematics Program.

5170. Connecting Geometry with Problem-Solving for the Middle-Level Learner. 3. Showcases two aspects of 2D and 3D geometry: measurement and transformation. Emphasis reflects current state and national standards for middle-level mathematics classroom and teacher preparation, especially appropriate uses of technology, geometric tools, mathematical language, and problem-solving strategies. Cross listed with NASC 5170. *Prerequisites:* admission to a university graduate program, in either degree or non-degree seeking status, and acceptance into the Middle-level Mathematics Program.

5190. Mathematics of Change and the Middle-Level Learner. 3. Students gain a solid understanding of data and functions in the service of calculus. Course is hands-on, project-driven and focuses on the essential concepts of functions and calculus and their role in middle-level mathematics. Emphasis is on writing and technology (calculators and probeware). Cross listed with NASC 5190. *Prerequisites:* admission to a UW graduate program, in either degree or non-degree seeking status, and acceptance into the Middle-level Mathematics Program.

5200. Real Variables I. 3. Develops the theory of measures, measurable functions, integration theory, density and convergence theorems, product measures, decomposition and differentiation of measures, and elements of function analysis on Lp spaces. Lebesgue theory is an important application of this development. *Prerequisite:* MATH 4200.

5205. Real Variables II. 3. A continuation of MATH 5200. Prerequisite: MATH 5200.

5230. Complex Variables I. 3. Develops the function theory of holomorphic (analytic) and harmonic functions. Topics covered include the Cauchy-Riemann equations, Cauchy-Goursat theorem, Cauchy integral theorem, Morera's theorem, maximum modulus theorem, Liouville's theorem, power series representation, harmonic functions, theory of singularities of functions of one complex variable, contour integration, analytic continuation, Riemann mapping theorem and topology of spaces of holomorphic functions. *Prerequisite:* MATH 4200.

5235. Complex Variables II. 3. A continuation of MATH 5230. *Prerequisites:* MATH 5230.

5255. Mathematical Theory of Probability. 3. Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence, and conditional probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Dual listed with MATH 4255, cross listed with STAT 5255. *Prerequisites:* grade of C or better in MATH 2210 or 2355.

5265. Introduction to the Theory of Statistics. 3. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis testing. Dual listed with MATH 4265, cross listed with STAT 5265. *Prerequisites:* STAT 4250/5250, MATH 4250.

5270. Functional Analysis I. 3. Topics include the geometry of Hilbert spaces, linear functions and operators on Hilbert spaces, spectral theory of compact normal operators, Banach space theory, the open mapping theorem, Hahn-Banach theorem, Banach-Steinhaus theorem, duality and linear operators on Banach spaces, and different topologies on Banach spaces and their duals. *Prerequisite:* MATH 5200.

5275. Functional Analysis II. 3. Topics may include discussion of topological vector spaces, locally convex spaces, F-spaces, spectral theory of non-compact operators on Hilbert spaces, semigroups or evolution operators, distribution theory, and applications to differential equations and Sobolev spaces. *Prerequisite:* MATH 5270.

5290. Topics in Analysis. 1-6 (Max. 18). Topics in analysis. *Prerequisite:* consent of the instructor.

5310. Computational Methods in Applied Sciences I. 3. First semester of a three-semester computational methods series. Review of iterative solutions of linear and nonlinear systems of equations, polynomial interpolation/approximation, numerical integration and differentiation, and basic ideas of Monte Carlo methods. Comparison of numerical techniques for programming time and space requirements, as well as convergence and stability. Identical to COSC 5310. *Prerequisite:* MATH 3310, COSC 1010.

5320. Mathematical Modeling Processes. 3. Introduction to techniques in the process of constructing mathematical models. Application of the techniques to areas such as petroleum reservoir simulation, chemical process industry operations, and plant start-up. Identical to CHE 5870. *Prerequisite:* MATH 5310 and graduate standing.

5340. Computational Methods II. 3. Second semester of a three-semester computational methods series with emphasis on numerical solution of differential equations. Topics include explicit and implicit methods, methods for stiff ODE problems, finite difference, finite volume, and finite element methods for time-independence PDEs semi/fully discrete methods for time-dependent PDEs. Cross listed with COSC 5340. *Prerequisite:* MATH 5310.

5345. Computational Methods III. 3. Third semester of a three-semester computational methods series with emphasis on numerical solution of problems displaying sharp fronts and interfaces (nonlinear conservation laws, Hamilton-Jacobi equations). Cross listed with COSC 5345. *Prerequisite:* MATH 5340.

5390. Topics in Numerical Analysis. 1-6. (Max 18). Topics in numerical analysis. *Prerequisite:* consent of the instructor.

5400. Methods of Applied Mathematics I. 3. First semester of a one-year survey of topics and methods of applied mathematics, with emphasis on applications from physics and engineering. The full sequence includes introductions to mathematical aspects of mechanics (e.g., conservation laws), asymptotic expansions, systems of ODE and stability, integral equations and calculus of variations, PDE with boundary value problems and generalized solutions (including wave, heat, and potential equations), numerical methods and stability. *Prerequisite:* MATH 2250, 4200 or 4400, and 2310 or 4430.

5405. Methods of Applied Mathematics II. 3. A continuation of MATH 5400. *Prerequisite:* MATH 5400.

5420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Dual listed with MATH 4420; cross listed with COSC/PHIL 5420. *Prerequisite:* PHIL 3420 or equivalent; graduate standing.

5430. Ordinary Differential Equations II. 3. Differential equations constitute the mathematical language for problems of continuous change. ODEs deal with evolutionary processes involving one independent variable. This course revisits solution techniques but emphasizes the theoretical framework. Topics include: existence and uniqueness, linear and nonlinear differential systems, asymptotics and perturbations, and stability. *Prerequisite:* MATH 4200, 4430.

5440. Partial Differential Equations II. 3. The theory of PDEs is important for abstract mathematics, applied science, and mathematical modeling. This course covers solution techniques but emphasizes the theoretical framework. Topics include: first order systems; characteristics; hyperbolic, elliptic and parabolic equations; separations of variables; series and transforms; integral relations; Green's functions, maximum principles; variational methods. *Prerequisite:* MATH 4200 and 4440.

5490. Topics in Applied Mathematics. 1-6 (Max. 18). Prerequisite: consent of instructor.

5500. Advanced Linear Algebra. 3. An introduction to the theory of abstract vector spaces and linear transformations from an axiomatic point of view, with applications to matrix theory. Topics include vector spaces, dimension, linear transformations, dual spaces and functionals, inner product spaces, and structure theorems. *Prerequisite:* MATH 3500 and MATH 4500.

5510. Combinatorial Theory. 3. An introduction to combinatorics covering both classical and contemporary topics. Includes some of the following: generating functions, recursion formulas, partially ordered sets, inclusion-exclusion, partitions, graph theory, Ramsey theory, combinational optimization, Latin squares, finite geometries, and design theory. *Prerequisite:* consent of the instructor.

5530. The Theory of Groups. 3. An in-depth study of various aspects of group theory, building on MATH 5550. Topics include some of the following: classical theory of finite groups (both Abelian and non-Abelian), infinite Abelian groups, free groups, permutation groups, group representations, endomorphism, extensions, and cohomology. *Prerequisite:* MATH 5550.

5550. Abstract Algebra I. 3. Studies the structure of groups, rings, and fields. For each, concepts of substructures, quotient structures, extensions, homomorphism, and isomorphism are discussed. *Prerequisite:* MATH 3500 or 5500.

5555. Abstract Algebra II. 3. A continuation of MATH 5550, examining in depth selected topics from the theory of rings, fields, and algebras, including Galois theory. *Prerequisite:* MATH 5550.

5570. Matrix Theory and Combinatorics. 3. An overview of matrix theory and its applications to combinatorics. Topics include Smith normal form, the Perron-Frobenius theory of non-negative matrices, location and perturbation of eigenvalues, and interlacing of eigenvalues. Applications include structure theorums for (0,1)-matrices, network flows, spectra of graphs, and the permanent. *Prerequisite:* MATH 5500.

5590. Topics in Algebra. 1-6 (Max. 18). Topics in algebra. *Prerequisites:* consent of the instructor.

5600. Point-Set Topology. 3. Topics considered are metric spaces, open spheres, open sets, closed sets, continuous functions, limit points, topological spaces, homeomorphisms, compactness, connectedness, and separability. The familiar notion of distance on the real number line is generalized to the notion of a metric for an arbitrary set, which is in turn generalized to the concept of a set topology for a set. Certain applications to analysis and geometry are indicated. *Prerequisite:* MATH 3205.

5605. Algebraic Topology. 3. Topics in algebraic topology, including simplicial homology groups and their topological invariance, the

Eilenberg-Steenrod axioms, singular homology theory, and cohomology. *Prerequisite:* MATH 3500.

5640. Differential Geometry. 3. Curve theory, theory of surfaces, and geometrics on a surface. *Prerequisite:* MATH 4200.

5690. Topics in Topology. 1-6 (Max. 9). *Prerequisite:* consent of instructor.

5700. Topics in Combinatorics. 1-6 (Max. 18). Selected topics in combinatorial analysis.

5800. Seminar in Mathematics. 1-3 (Max. 8). *Prerequisite:* consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate Program of Study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Graduate level course designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Microbiology Program

Program Director: Gerard P. Andrews
Phone: (307) 766-3139
FAX: (307) 766-3875
E-mail: gandrews@uwyo.edu

The Bachelor of Science degree program in microbiology is organized as an interdepartmental major involving the collaborative teaching, advising and research expertise of more than 20 microbiology faculty from the Colleges of Arts and Sciences, Agriculture and Health Sciences. The program is administered by a program director and a coordinating committee which represents each of the participating colleges. Students may obtain their degree in the College of Agriculture and Natural Resources. Please see the College of Agriculture and Natural Resources Microbiology Program section for a list of faculty and program information.

Music

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FAX: (307) 766-5326
Web site: www.uwyo.edu/music
Department Head: Theresa Bogard

Professors:

STEVE BARNHART, B.M.E. Texas Tech University 1973; M.M. North Texas State University 1980; D.M.A. University of Kansas 1989; Professor of Music 2002, 1990. Percussion.

ROBERT BELSER, B.M.E. Central Missouri State University 1977; M.S. M.E University of Illinois 1982; D.M.A. University of Iowa 1994; Professor of Music 2008, 1995. Director of Bands, Conducting, Music Education.

THERESA L. BOGARD, B.M. University of Colorado 1983; M.M. Eastman School of Music 1985; D.M.A. University of Colorado 1990; Professor of Music 2004, 1992. Keyboard, Keyboard Area Coordinator, Piano.

JOHN FADIAL, B.M. North Carolina School of the Arts 1987; M.M. Eastman School of Music 1989; D.M.A. University of Maryland 1995; Professor of Music 2015, 2008. Violin.

MICHAEL GRIFFITH, B.M.E. Michigan State University 1973; M.M. 1975; D.M.A. University of Colorado 1994; Professor of Music 2001, 1989. Conducting, Woodwinds.

LARRY L. HENSEL. B.A. Macalester College 1981; M.M. 1984; D.M.A in Performance and Literature, Eastman School of Music 1993; Professor of Music 2007, 1996. Vocal Arts Area Coordinator, Voice, Opera Theatre, Vocal Literature.

JAMES PRZYGOCKI, B.M. Western Michigan University 1979; M.M. Indiana University 1984; Professor of Music 2005, 1993. Viola, String Methods, Music Education.

J. SCOTT TURPEN, B.M.E. Boise State University 1994; M.M. University of Georgia 1996; D.M.A. 1999; Professor of Music 2012, 2001. Director of Jazz Studies, Saxophone.

KATRINA ZOOK, B.M. Oberlin College 1986; M.M. University of California—Santa Barbara 1992; D.M.A. Eastman School of Music 2000; Professor of Music 2011, 1999. Voice, Music Appreciation, Vocal Methods, Vocal Pedagogy.

Associate Professors:

NICOLE LAMARTINE, B.M. New Mexico State 1998; M.M. 2000, D.M.A. University of Arizona 2003; Associate Professor of Music 2013, 2008. Director of Choirs.

ANNE GUZZO, B.M. University of New Mexico 1992; M.A. University of California, Santa Cruz 1996; Ph.D. University of California, Davis 2002; Associate Professor of Music 2011, 2006. Composition, Theory.

BETH VANDERBORGH, B.M. Manhattan School of Music 1988; M.M. Eastman School of Music 1990; D.M.A. University of Maryland 1995; Associate Professor of Music 2014, 2008. Cello.

Assistant Professors:

HOLLY DALRYMPLE, BM, Texas State University; MM, University of Texas-Austin; DMA, University of North Texas; Assistant Professor of Music 2013. Choral Education.

BLAKE MCGEE, B.M. University of Minnesota 2001; M.M. 2004, D.M.A. University of Oregon 2008; Assistant Professor of Music 2010. Clarinet, Musicology.

SCOTT MEREDITH, B.M., B.M.E. University of Northern Colorado 1996; M.M. 2003, D.M.A. University of North Texas 2008; Assistant Professor of Music 2009. Trumpet.

CRYSTAL SIEGER, B.M. Ohio State University 1992; M.M. University of Arizona 1994; Ph.D. 2012; Assistant Professor of Music 2014. Music Education.

CHI-CHEN WU, B.F.A. National Taiwan Normal University 1998; M.M. 2202; D.M.A. New England Conservatory 2006; Assistant Professor of Music 2012. Piano and Collaborative Piano.

Lecturers:

Boddicker, Markley, Sinift, J. Turpen, Williamson

Part-time Lecturers:

Allen, Berlinsky, Bird, Boddicker, Bretones, Fourt, Hart, Harvey, Hoffman, Johnston, Latchininsky, Reynolds, Riner, Soueidi, Strampe, Uno, Will

Professors Emeriti:

David Brinkman, Gordon Childs, Julia Combs, Rodney Garnett, Frederick Gersten, Brian Hanly, Edgar Lewis, William Stacy, Carlyle Weiss

The Department of Music offers undergraduate and graduate degree programs which combine scholarship with performance, theory with practice and the academic with the creative. It also provides an opportunity for the study and performance of music by university students who are not majors in

music. By giving concerts, workshops and lectures throughout the state of Wyoming through the Fine Arts Outreach Program, the music department serves as a musical resource for the entire state. The music department is fully accredited by the National Association of Schools of Music.

Procedures and requirements are listed in the music department *Student Handbook* which is available online at www.uwyo.edu/music/forms/index.html. The music department *Student Handbook* and the *University Catalog* are binding documents for the degree programs listed below. Students must receive a "C" or better in all courses designated MUSC to satisfy department requirements. The foreign language requirement for the Bachelor of Arts in Music and the Bachelor of Music in Performance: Vocal Emphasis degrees may be satisfied with a "C" or better in all courses. A student's transfer courses must meet all of these requirements to be accepted for credit.

An audition is required to become a Music major or minor. The 3 Steps to Becoming a Music Major are:

1. Apply for admission to the University of Wyoming (http://www.uwyo.edu/admissions/).
2. Audition for admittance as a Music major and for Music scholarships. Audition and scholarship information may be found at www.uwyo.edu/music. All Music majors and minors MUST audition to be admitted to the Music program.
3. Perform at an acceptable level, and you are in!

Degrees

Bachelor of Arts (with major in music): A program designed for the student who desires a broadly-based liberal arts program.

Bachelor of Music Performance: A four-year course of study designed for students who wish to prepare for a professional career as performer and applied teacher.

Bachelor of Music Education: A four-year course of study for the student who wishes to prepare for a career as a teacher of music in elementary or secondary schools in the instrumental, vocal, and general music fields.

Performer's (post-baccalaureate) Certificate

A non-degree course of study for the student seeking to improve professional performance skills. The program consists of a total of 30 credit hours from applied lessons, ensembles and electives to be selected in consultation with the major adviser. Prerequisites are demonstrated evidence of advanced performance proficiency through a live or recorded audition, undergraduate degree in music, and admission to the university.

Music for Other Students

Music as an elective subject. Students from other departments of the university may, with consent of their adviser and applied instructor, elect private or class lessons in applied music (with or without previous training) and may enroll in any theory, music literature or activity course for which they are qualified. See the music department *Student Handbook* for requirements for a minor in music.

Organizations. Performance organizations include the Happy Jacks, Marching Band, Symphonic Band, Wind Ensemble, Collegiate Chorale, Symphony Orchestra, Chamber Orchestra, Singing Statesmen, Bel Canto, Women's Choir, and Opera Theatre. Other groups are brass, woodwind, string, percussion and piano ensembles, Vocal Jazz, Civic Chorus and Jazz Ensemble. Membership is open to qualified students in all colleges and departments of the university. Each year, in addition to frequent appearances on the campus, several of these organizations and groups are heard on tour in Wyoming and neighboring states.

Music Fees

For Individual Instruction:

One 1/2-hour lesson weekly, per semester $150.00
One 1-hour lesson weekly, per semester $300.00

For Music 4510, 4520, 4530, 4540, 4550 and 4560 (courses taken in the form of private lessons) a fee of $85.00 is assessed each semester.

Practice Rooms:

per semester $35.00
Music instrumental fee, per semester... $25.00
Music locker fee, per student per semester $15.00
Public School Methods fee, per class..... $5.00

Undergraduate Study

Bachelor of Arts in Music

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. Each ensemble course is deemed to be a unique course even though the course number is not unique. To fulfill this degree requirement students will be expected to enroll in ensembles at the lower and upper divisions a minimum of four times with a career maximum of 8. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Consult your advisor for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Arts degree in Music, students will be able to: (1) demonstrate a level of competence as solo and ensemble performers appropriate for a musician educated in the liberal arts, (2) demonstrate specific knowledge in music theory, music history, and general studies appropriate for their professional goals, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC	0200 Convocation	0
MUSC	1003 Introduction to Music	3
MUSC	1030 Written Theory I	3
MUSC	1035 Aural Theory I	1
MUSC	1040 Written Theory II	3
MUSC	1045 Aural Theory II	1
MUSC	2030 Written Theory III	3
MUSC	2035 Aural Theory III	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Theory IV	1
MUSC	2050 Historical Survey I	3
MUSC	2055 Historical Survey II	3
MUSC	2395 Piano Proficiency	0
MUSC	3255 Sophomore Perf. Jury	0
MUSC	4070 Conducting	3
MUSC	**** Ensembles	8
MUSC	2*** Applied Lessons II	2
MUSC	3*** Applied Lessons III	2
MUSC	4*** Applied Lessons IV	2
MUSC	5*** Applied Lessons V	2

Music Electives (13 Hrs.)

MUSC	4010 Counterpoint	3
MUSC	4030 Form and Analysis	3
MUSC	4300 Instrumentation and Arr	3
MUSC	4040 Composition	2
MUSC	4590 Senior Recital	2
MUSC	4320 Medieval Period	3
MUSC	4325 Renaissance Period	3
MUSC	4330 Baroque Period	3
MUSC	4335 Classic Period	3
MUSC	4340 Romantic Period	3
MUSC	4345 Contemporary Period	3
MUSC	4350 Hist and Lit of Jazz	3
MUSC	4400 Vocal Literature	2
MUSC	5410 Hist of Musical Instrum	2

Foreign Language (8 Hrs.)

General Electives (19 Hrs.)

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this *Catalog*. A minimum of 42 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Instrumental Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. Each ensemble course is deemed to be a unique course even though the course number is not unique. To fulfill this degree requirement students will be expected to enroll in ensembles at the lower and upper divisions a minimum of four times with a career maximum of 8. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Consult your advisor for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Instrumental Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and instrumental pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC	0200 Convocation	0
MUSC	1003 Introduction to Music	3
MUSC	1030 Written Theory I	3
MUSC	1035 Aural Theory I	1
MUSC	1040 Written Theory II	3
MUSC	1045 Aural Theory II	1
MUSC	2030 Written Theory III	3
MUSC	2035 Aural Theory III	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Theory IV	1
MUSC	2050 Historical Survey I	3
MUSC	2055 Historical Survey II	3
MUSC	2395 Piano Proficiency	0
MUSC	3255 Sophomore Perf. Jury	0
MUSC	3500 Junior Recital	0
MUSC	4010 Counterpoint	3
MUSC	4030 Form and Analysis	3
MUSC	4070 Conducting	3
MUSC	4300 Instrumentation and Arr	3
MUSC	4040 Composition	2
MUSC	4590 Senior Recital	2
MUSC	**** Ensembles	8
MUSC	2*** Applied Lessons II	4
MUSC	3*** Applied Lessons III	4
MUSC	4*** Applied Lessons IV	4
MUSC	5*** Applied Lessons V	4

Instrumental Emphasis

MUSC	4615 Specific Pedagogy	2
MUSC	4651 String Solo Literature (string students only)	2

Music Electives (9 Hrs.)

MUSC	4320 Medieval Period	3
MUSC	4325 Renaissance Period	3
MUSC	4330 Baroque Period	3
MUSC	4335 Classic Period	3
MUSC	4340 Romantic Period	3
MUSC	4345 Contemporary Period	3
MUSC	4350 Hist and Lit of Jazz	3
MUSC	5410 Hist of Musical Instrum	2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this *Catalog*. A minimum of 42 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Keyboard Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. Each ensemble course is deemed to be a unique course even though the course number is not unique. To fulfill this degree requirement students will be expected to enroll in ensembles at the lower and upper divisions a minimum of four times with a career maximum of 8. All music majors must pass the piano proficiency test during their sophomore year.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Keyboard Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and piano pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC	0200 Convocation	0
MUSC	1003 Introduction to Music	3
MUSC	1030 Written Theory I	3
MUSC	1035 Aural Theory I	1
MUSC	1040 Written Theory II	3
MUSC	1045 Aural Theory II	1
MUSC	2030 Written Theory III	3
MUSC	2035 Aural Theory III	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Theory IV	1
MUSC	2050 Historical Survey I	3
MUSC	2055 Historical Survey II	3
MUSC	2395 Piano Proficiency	0
MUSC	3255 Sophomore Perf. Jury	0
MUSC	3500 Junior Recital	0
MUSC	4010 Counterpoint	3
MUSC	4030 Form and Analysis	3
MUSC	4070 Conducting	3
MUSC	4300 Instrumentation and Arr	3
MUSC	4590 Senior Recital	2
MUSC	**** Ensembles/Accompan	8
MUSC	2200 Applied Lessons II	4
MUSC	3200 Applied Lessons III	4
MUSC	4200 Applied Lessons IV	4
MUSC	5200 Applied Lessons V	4

Keyboard Emphasis

MUSC 4600 Piano Pedagogy.....2
MUSC 4650 Keyboard Literature.....3

Music Electives (9 Hrs.)

MUSC 4320 Medieval Period 3
MUSC 4325 Renaissance Period 3
MUSC 4330 Baroque Period.....3
MUSC 4335 Classic Period.....3
MUSC 4340 Romantic Period 3
MUSC 4345 Contemporary Period.....3
MUSC 4350 Hist and Lit of Jazz I 3
MUSC 5410 Hist of Musical Instrum.....2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this *Catalog*. A minimum of 42 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Vocal Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. Each ensemble course is deemed to be a unique course even though the course number is not unique. To fulfill this degree requirement students will be expected to enroll in ensembles at the lower and upper divisions a minimum of four times with a career maximum of 8. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Vocal majors must complete 8 hours of a single, traditional foreign language. Consult your advisor for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Vocal Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and vocal pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC 0200 Convocation 0
MUSC 1003 Introduction to Music 3
MUSC 1030 Written Theory I 3
MUSC 1035 Aural Theory I.....1
MUSC 1040 Written Theory II 3
MUSC 1045 Aural Theory II 1
MUSC 2030 Written Theory III 3
MUSC 2035 Aural Theory III 1
MUSC 2040 Written Theory IV 3
MUSC 2045 Aural Theory IV 1
MUSC 2050 Historical Survey I.....3
MUSC 2055 Historical Survey II 3
MUSC 4010 Counterpoint 3
MUSC 4030 Form and Analysis.....3
MUSC 4070 Conducting 3
MUSC 4300 Instrumentation and Arr....3
MUSC 4590 Senior Recital.....2
MUSC **** Ensembles.....8
MUSC 2770 Voice II 4
MUSC 3270 Voice III.....4
MUSC 4270 Voice IV.....4
MUSC 5270 Voice V.....4
Piano Proficiency.....0

Vocal Emphasis

MUSC 2320 Diction for Singers I 2
MUSC 2325 Diction for Singers II.....2
MUSC 4400 Vocal Literature 2
MUSC 4610 Vocal Pedagogy 2
Foreign Language.....8

Music Electives (9 Hrs.)

MUSC 4320 Medieval Period 3
MUSC 4325 Renaissance Period 3
MUSC 4330 Baroque Period.....3
MUSC 4335 Classic Period.....3
MUSC 4340 Romantic Period 3
MUSC 4345 Contemporary Period.....3
MUSC 4350 Hist and Lit of Jazz.....3
MUSC 5410 Hist of Musical Instrum.....2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this *Catalog*. Vocal majors must complete 8 hours of a single, traditional foreign language. A minimum of 42 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music Education

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. Each ensemble course is deemed to be a unique course even though the course number is not unique. To fulfill this degree requirement students will be expected to enroll in ensembles at the lower and upper divisions a minimum of four times with a career maximum of 8. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Consult your advisor for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music Education degree, students will be able to: (1) demonstrate skill as solo and ensemble performers who can work as professional educators, (2) demonstrate specific knowledge in music theory, music history, and instrumental and vocal pedagogy to provide a basis for a professional career as a music educator, (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music, and (4) demonstrate the pedagogical background and teaching experience to function as effective K-12 music educators.

Music Core

MUSC 0200 Convocation 0
MUSC 1003 Introduction to Music 3
MUSC 1025 Introduction to MusEd.....2
MUSC 1030 Written Theory I 3
MUSC 1035 Aural Theory I.....1
MUSC 1040 Written Theory II 3
MUSC 1045 Aural Theory II 1
MUSC 2030 Written Theory III 3
MUSC 2035 Aural Theory III 1
MUSC 2040 Written Theory IV 3
MUSC 2045 Aural Theory IV 1
MUSC 2050 Historical Survey I 3
MUSC 2055 Historical Survey II 3
MUSC 1310 PSM:Brass I.....1
MUSC 1315 PSM:Brass II 1
MUSC 1320 PSM:Percussion I.....1
MUSC 1325 PSM:Percussion II 1
MUSC 1330 PSM:Strings I 1
MUSC 1335 PSM:Strings II.....1
MUSC 1340 PSM:Voice 1
MUSC 1345 PSM:Voice II.....1
MUSC 1350 PSM:WWinds I.....1
MUSC 1355 PSM:WWinds II.....1
MUSC 1360 PSM:Guitar 1
MUSC 2395 Piano Proficiency 0
MUSC 3255 Sophomore Perf. Jury.....0
MUSC 4070 Conducting 3
MUSC 4155 Senior Music Ed. Recital.....0
MUSC 4300 Instrumentation and Arr....3
MUSC 4620 MusEd Practicum.....1

MUSC 2*** Applied Lessons II.....2
MUSC 3*** Applied Lessons III.....2
MUSC 4*** Applied Lessons IV.....2
MUSC 5*** Applied Lessons V.....2
Ensembles 7

Brass, Woodwind and Percussion Emphasis
MUSC 4380 Jazz Techniques.....2
MUSC 4750 Marching Techniques.....1
MUSC 4780 Instr Conducting.....2

Vocal/General Emphasis
MUSC 2320 Diction for Singers.....2
MUSC 4790 Choral Conducting.....2

String Emphasis
MUSC **** Secondary String Inst.....2
MUSC 4780 Instr Conducting.....2

Professional Education Requirements
EDST 2450 Foundations of Development & Learning.....3
EDEX 2484 Intro. to Special Ed.....3
MUSC 4255 Elementary and Secondary Methods: Practicum.....2
MUSC 4265 Elementary and Secondary . Music Teaching Methods.....8
MUSC 4700 Residency in Teaching/Elementary.....8
MUSC 4710 Residency in Teaching/Secondary.....8

University and College Requirements

In addition to the major requirements listed above, students must complete all university requirements listed elsewhere in this *Catalog*. A minimum of 42 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Graduate Study

The Department of Music offers programs leading to the Master of Music in Performance and to the Master of Music Education.

The following prerequisites and credit hours will pertain to individual lessons for all the instruments and voice listed below. All students enrolled in MUSC 5080 through MUSC 5670 levels will be required to take a jury examination at the end of the semester to determine, in part, the final grade. (See current fee schedule for listing of fees in Individual Lessons.)

Program Specific Admission Requirements

In addition to the minimum requirements set forth in this *Catalog*, the Department of Music requires that applicants for graduate programs submit supplementary documentation of their preparation for advanced study in music.

Master of Music Education

An earned, documented Bachelor of Music Education degree from an accredited institution of higher learning.
One year of teaching experience plus:
An active background in music education,
A DVD of classroom teaching and/or rehearsing,
A one- to three-page statement of music education philosophy,
Three letters of recommendation, one from an immediate supervisor, of teaching effectiveness.

Learning Outcomes

1. Students will demonstrate the advanced musical and pedagogical knowledge and research/writing skills necessary to enhance their teaching abilities in a P-16 vocal and/or instrumental teaching position.
2. Students will demonstrate the advanced musical and pedagogical knowledge and research/writing/and communication skills necessary to solve contemporary music problems.

Master of Music in Performance

An earned, documented bachelor of music performance from an accredited institution of higher learning.
Live audition or a performance CD or DVD demonstrating:
A strong sense of musicality,
Technical proficiency,
Stylistically correct performance practices in at least three historical periods, where applicable,
A working knowledge of the standard repertoire,
Also, a portfolio of work showing concentrated activity on the major instrument or voice area.

Learning Outcomes

1. Graduate students will be excellent performers on voice or instrument.
2. Graduate students will demonstrate the advanced musical and pedagogical knowledge and research writing stills necessary to begin their professional performing career and/or demonstrate their readiness to teach at the college and/or university level and/or pursue doctoral degrees.

Program Specific Graduate Assistantships

Graduate assistantships are awarded on a competitive basis to defray some of the costs of graduate study and to provide practical experience working under the guidance of faculty members.

Criteria that are taken into account in awarding assistantships include: academic preparation, performing ability, and special skills that would prove valuable in carrying out the duties of the assistantship, as well as, needs of the department.

To be considered for a graduate assistantship, the candidate must be fully admitted through the university. The application for an assistantship is considered separately within the Department of Music, although the applications may be made concurrently. After considering the merits of the application, the department then nominates candidates to the university.

Applications for assistantships are due in the department on March 1. Contact the music department for more information.

Program Specific Degree Requirements

Master's Programs

Each of the degree programs consists of 30 semester hours of work composed of the following elements:
Basic music core (11 hours)
MUSC 5310. Bibliographical Research, 2 hours
Upper-division music history, 3 to 6 hours
Upper-division music theory, 3 to 6 hours
Major area courses (12-16 hours)
Thesis requirement (Plan A, four hours); (Plan B, zero hours)
The thesis requirement may be fulfilled under Plan A or Plan B as appropriate to the specific degree program. A proposal for a thesis or Plan B paper must be submitted to and approved by the Department of Music Graduate Committee.
Electives (0 to 7 hours)

Master of Music Education
Plan A or Plan B

To earn a Master of Music Education, students must complete the following requirements:

Basic music core, (11 hours)

Major area courses (12 - 15 hours)
- EDRE 5530. Introduction to Research, 3 hours
- MUSC 5760. Music Education Seminar, 2 hours
- MUSC 5720. Music Supervision, 2 hours
- Music education electives, 5-8 hours
- Thesis requirement (0 to 4 hours)
- Plan A: MUSC 5960. Thesis Research, four hours (the thesis must be on a music education topic), or
- Plan B: Plan B paper, plus extra courses, 0 hours

Electives (4 to 7 hours)

Master of Music in Performance
Plan B

To earn a Master of Music in Performance, students must complete the following requirements:

Basic music core (11 hours minimum)

Major area courses (16 hours minimum)
- MUSC 5480-5670. Private Lessons in major instrument or voice. A minimum of 8 hours.
- MUSC 5770-5890. Ensembles, 2 hours
- MUSC 5680. Graduate Recital, 2 hours. A faculty jury must approve a recital given for credit one month prior to the performance. The faculty jury will determine the grade after the performance.
- MUSC 5390. Performance Practice and Interpretation, 2 hours
- MUSC 5320. Advanced Seminar, 3 hours
- MUSC 4***. Pedagogy (instrument specific), 2 hours

Requirement in lieu of thesis:
- Plan B paper, or 1-hour lecture-recital

Foreign language requirement (voice majors only). Singers must demonstrate acceptable proficiency in singing in Italian, German, French, and English.

Electives (0 to 3 hours)

Both degrees require successful completion of the written comprehensive exams, which cover theory, history, and the major area.

Music (MUSC)

Individual Lessons: All students enrolled in MUSC 2080 through MUSC 5670 levels will be required to take a jury examination at the end of the semester to determine, in part, the final grade. (See current fee schedule for listing of fees in individual lessons.)

Students must receive a "C" or better in all courses designated MUSC to satisfy department degree requirements. A student's transfer courses in music must also reflect a "C" or better to be accepted for credit.

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

0200. Music Convocation. 0. Weekly recital hour for student, faculty and guest performances. *Prerequisite:* intended for, and required of music majors.

Applied Lessons:
1080 through 1270 I. 1-2 (Max. 8).
2080 through 2270 II. 1-2 (Max. 8). *Prerequisite:* previous training proven with an audition or 2-4 semester hours of MUSC 1080 through MUSC 1270 on the same instrument.
3080 through 3270 III. 1-2 (Max. 8). *Prerequisite:* 2-4 semester hours of MUSC 2080 through MUSC 2270 on the same instrument.
4080 through 4270 IV. 1-2 (Max. 8). *Prerequisite:* 2-4 semester hours of MUSC 3080 through MUSC 3270 on the same instrument.

Majors begin at the 2000 level.
1080. Baritone Horn I
1090. Bassoon I
1100. Cello I
1110. Clarinet I
1120. Double Bass I
1130. Flute I
1140. French Horn I
1150. Guitar I
1160. Harp I
1170. Oboe I
1180. Organ I
1190. Percussion I
1200. Piano I
1210. Saxophone I
1220. Trombone I
1230. Trumpet I
1240. Tuba I
1250. Violin I
1260. Viola I
1270. Voice I

2080. Baritone Horn II
2090. Bassoon II
2100. Cello II
2110. Clarinet II
2120. Double Bass II
2130. Flute II
2140. French Horn II
2150. Guitar II
2160. Harp II
2170. Oboe II
2180. Organ II
2190. Percussion II
2200. Piano II
2210. Saxophone II
2220. Trombone II
2230. Trumpet II
2240. Tuba II
2250. Violin II
2260. Viola II
2270. Voice II

3080. Baritone Horn III
3090. Bassoon III
3100. Cello III
3110. Clarinet III
3120. Double Bass III
3130. Flute III
3140. French Horn III
3150. Guitar III
3160. Harp III
3170. Oboe III
3180. Organ III
3190. Percussion III
3200. Piano III
3210. Saxophone III
3220. Trombone III
3230. Trumpet III
3240. Tuba III
3250. Violin III
3260. Viola III
3270. Voice III

Prerequisites for the following courses: **2-**4 semester hours of MUSC 3080 through MUSC 3270 on the same instrument and satisfactory completion of MUSC 3255.

4080. Baritone Horn IV
4090. Bassoon IV
4100. Cello IV
4110. Clarinet IV
4120. Double Bass IV
4130. Flute IV
4140. French Horn IV
4150. Guitar IV
4160. Harp IV
4170. Oboe IV
4180. Organ IV
4190. Percussion IV
4200. Piano IV
4210. Saxophone IV
4220. Trombone IV
4230. Trumpet IV

4240. Tuba IV
4250. Violin IV
4260. Viola IV
4270. Voice IV

1000. Introduction to Music. 3. [CA◀▶H] Introduces music appreciation to students who have little or no musical training. Requires attendance at a specified number of public concerts. (Offered every semester)

1003. Introduction to University Life as a Music Major. 3. [I,L◀▶(none)] Preparation for study in the Western European classical tradition as represented in most American departments of music, in music of other cultures within American society, in other parts of the world, and in music making after graduation are focused upon. Developing information literacy is an essential component.

1010. Music Fundamentals. 3. To establish/review the foundation of the materials and structures of music theory fundamentals.

1025 [1020]. Introduction to Music Education. 2. Introduces music teacher education. Includes overview of vocal and instrumental music education and teaching processes in grade levels K-12. Requires on-site visits and observations of music programs. Prerequisite: music majors only. (Offered spring semester)

1030. Written Theory I. 3. First semester of a one-year series. Studies fundamentals of music and written harmony. Prerequisite: music majors/minors only.

1035. Aural Theory I. 1. First semester of a one-year series. Studies ear training and sight singing.

1040. Written Theory II. 3. Second semester of a one-year series. Studies fundamentals of music and written harmony. *Prerequisite:* MUSC 1030 and music majors/minors only.

1045. Aural Theory II. 1. Second semester of a one-year series. Studies ear training and sight singing. *Prerequisite:* MUSC 1035.

1280. Collaborative Piano I. 1-2 (Max. 8). Encompasses supervised practice in the art of collaborative piano playing. Discusses traditional usages as applicable to various schools and periods of vocal and instrumental duo literature. *Prerequisite*: audition required.

1290. Elementary Class Piano I. 1. Encompasses group instruction for the beginner at the keyboard. First semester of four-semester sequence. Enrollment limited to music or music education majors whose principal performance area is not piano. (Offered fall semester)

1295. Elementary Class Piano II. 1. Continues skills begun in MUSC 1290 including all major scales, beginning minor scales, prescribed chord progressions, harmonization, transposition, sight reading and repertoire. *Prerequisite:* MUSC 1290 or successful completion of final exam requirements for MUSC 1290. (Offered spring semester)

1310. Public School Methods: Brass I. 1 (Max. 2). Encompasses group instruction in brass instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1315. Public School Methods: Brass II. 1 (Max. 2). Encompasses group instruction in brass instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1320. Public School Methods: Percussion I. 1 (Max. 2). Encompasses group instruction in percussion instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1325. Public School Methods: Percussion II. 1 (Max. 2). Encompasses group instruction in percussion instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1330. Public School Methods: Strings I. 1 (Max. 2). Encompasses group instruction in string instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1335. Public School Methods: Strings II. 1 (Max. 2). Encompasses group instruction in string instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1340. Public School Methods: Voice I. 1 (Max. 2). Encompasses group instruction in vocal methods for music education majors. *Prerequisites:* MUSC 1040, 1045.

1345. Public School Methods: Voice II. 1. Group instruction in the vocal area for music education majors. Second semester of vocal methods which focuses on Choral Methods, Children's Choir, Jazz, and Musical Theater in the K-12 teaching situation. *Prerequisite:* MUSC 1340.

1350. Public School Methods: Woodwinds I. 1 (Max. 2). Encompasses group instruction in woodwind methods for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1355. Public School Methods: Woodwinds II. 1 (Max. 2). Encompasses group instruction in woodwind methods for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1360. Public School Methods: Guitar. 1 (Max. 2). Encompasses group instruction in guitar for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1370, 1375, 1380, 1390, 1400, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490. Ensembles. Maximum of 14 semester hours may be used toward the bachelor's degree from any combination of these courses. Music majors must play in one ensemble each semester in residence. Scholarship recipients must play in two ensembles each semester in residence.

1370. Marching Band. 1 (Max. 8). Fall semester: marching band.

1375. Symphonic Band. 1 (Max. 8). *Prerequisite:* players are selected by audition. Auditions will take place the first week of classes.

1380. Wind Ensemble. 1 (Max. 8). [CA◀▶(none)] *Prerequisite:* players are selected by audition from the university band.

1390. Jazz Ensemble. 1 (Max. 8). [(none)◀▶H] Preparation and performance in a select jazz ensemble of the finest in standard jazz ensemble repertory and contemporary compositions by living jazz artists. Prerequisites: audition required; restricted to freshmen and sophomores.

1400. Collegiate Chorale I. 1 (Max. 12). [CA◀▶H] Will provide the committed singer with outstanding performing experiences ranging from major choral masterworks to masterpieces of the *a cappella* tradition, both sacred and secular. The choir is a professional training ensemble, and each student will explore a variety of vocal techniques for development. *Prerequisite*: Audition required.

1405. The UW Singing Statesmen I. 1 (Max 12). [(none)◀▶H] Will provide all levels of singer with the rich tradition of male ensemble singing. Students will solidify basic musicianship skills and vocal technique while experiencing camaraderie and service to the region. This ensemble is open to both music majors and non-music majors without audition.

1407. Happy Jacks I. 1 (Max 12). Student-led male *a cappella* ensemble that sings contemporary, jazz, and traditional repertoire. The ensemble travels regularly to promote male singing through concerts and school workshops. *Prerequisites*: Audition required. Co-requisite: enrollment in The UW Singing Statesmen.

1411. Vocal Jazz I. 1 (Max 12). Sings standard repertory from various jazz traditions, often with rhythm section. Focus on building musical skill and literacy in the jazz idiom. *Prerequisites*: Audition required.

1415. Bel Canto Women's Choruse. 1 (Max 12). [(none)◀▶H] Builds community through score study and the development of fundamental musicianship skills, including sight singing, ear training, and vocal technique. This ensemble is open to both music majors and non-music majors without audition.

1417. Laramie Civic Chorus I. 1 (Max 12). [(none)◀▶H] Welcomes students, faculty, and community members. Repertoire includes musical works from a multiplicity of style periods and genres in both Western and non-Western traditions and includes regular collaboration with the UW Symphony Orchestra for major choral works. *Prerequisites*: Audition required.

1420. Opera Theatre. 1 (Max. 8).

1430. Symphony Orchestra I. 1 (Max. 8). [CA◀▶H] The premier orchestral ensemble in the Department of Music. Participation in this ensemble prepares students to perform some of the great symphonic literature from a wide variety of musical periods. Prerequisite: audition only, freshmen and sophomores.

1440. Chamber Orchestra I. 1 (Max. 8). Devoted to the rehearsal and performance of masterpieces from the chamber orchestra repertoire. Students in the 1440 level of Chamber Orchestra will be expected to have a competent level of proficiency on their parts.

1450. Percussion Ensemble. 1 (Max. 8). Present concerts that represent the literature and techniques of this growing genre in music.

1460. Brass Ensemble. 1 (Max. 8). The University of Wyoming Brass Ensemble is a course devoted to the rehearsal and performance of masterpieces from the brass chamber repertoire. Students in the 1460 level of Brass Ensemble will be expected to have a competent level of proficiency on their parts.

1470. Woodwind Ensemble. 1 (Max. 8). Preparation and performance in a select woodwind chamber ensemble of the finest standard and contemporary wind ensemble literature. Enrollment is restricted freshmen and sophomores. Prerequisite: audition required.

1480. Chamber Music I. 1 (Max. 8). Designed to provide students with training in the ideal medium of chamber music (small ensembles, such as trio, string quartet, etc.), where they can apply and integrate all elements of their musical knowledge. These include but are not limited to rhythm, intonation, tone-production, blend, musical interpretation, concept of style, etc. *Prerequisite:* audition required.

1490. Piano Ensemble I. 1 (Max. 8). Designed to provide students with training in the medium of piano duo and piano duet repertoire, where they can apply and integrate all elements of their musical knowledge. The include but are not limited to rhythm, tone-production, musical interpretation, concept of style, etc. *Prerequisite*: Audition required.

1495. Baroque Ensemble I. 1. Designed to provide students with the opportunity to play on period instruments of the Baroque era. The repertoire will primarily include music of the Seventeenth and Eighteenth Centuries and whose performance will reflect the spirit and style of the period in which the music was composed. *Prerequisite:* consent of instructor.

2030. Written Theory III. 3. First semester of a one-year series. Studies chromatic harmony, contrapuntal techniques and twentieth-century practices. *Prerequisites:* MUSC 1030 and 1040.

2035. Aural Theory III. 1. First semester of a one-year series. Continues MUSC 1035 and 1045. *Prerequisites:* MUSC 1035 and 1045.

2040. Written Theory IV. 3. Second semester of a one-year series. Studies chromatic harmony, contrapuntal techniques and twentieth-century practices. *Prerequisite:* MUSC 2030.

2045. Aural Theory IV. 1. Second semester of a one-year series. Continues MUSC 1035 and 1045. *Prerequisite:* MUSC 2035.

2050. Historical Survey I. 3 (Max. 6). [CA◀▶(none)] First semester of a one-year series. Studies history and literature of music from antiquity through the Baroque. *Prerequisite:* ability to read music.

2055. Historical Survey II. 3 (Max. 6). Second semester of one-year series. Studies history and literature of music from the classical era to present. *Prerequisite:* ability to read music.

2290. Elementary Class Piano III. 1. Third semester of four-semester sequence developing further piano skills for non-pianists. Involves prescribed scales, arpeggios, harmonizations, chord progressions, transpositions, sight-reading and repertoire. *Prerequisite:* MUSC 1295 or successful completion of final exam for MUSC 1295. (Normally offered fall semester)

2295. Elementary Class Piano IV. 1. Final semester of four-semester sequence of piano skills for non-pianists in which the final exam is the departmental piano proficiency exam. *Prerequisite:* MUSC 2290 or successful completion of the final exams for preceding courses. (Normally offered spring semester)

2320. Diction for Singers I. 2. Studies phonetic sounds of English and Italian. (Offered fall semester)

2325. Diction for Singers II. 2. Studies phonetic sounds of French and German. (Usually offered spring semester)

2395. Piano Proficiency. 0. Piano proficiency test is offered at the end of each fall and spring semester. Students may enroll in MUSC 2395 a maximum of 2 times. Consult the Music Department Handbook for specific requirements.

3015 [2015]. Introduction to the Music of the World's Peoples. 3. [WB,G◀▶(none)] Students develop three primary interconnected literacies for the study and understanding of musics of other cultures: analytical music listening, understanding the concept of music culture, and interpretation of musical events. Student writing is a primary tool for developing these literacies. Texts from the Oxford University Press Global Music Series to study musics of Africa, Indonesia, India, and Eastern Europe are used. Cross listed with ANTH 3015. *Prerequisites:* MUSC 1000 or permission of instructor and WA.

3020. Jazz Theory and Improvisation I. 2. Introduces methods and materials of jazz improvisation. Students will grapple with theoretical concepts as well as practical application of those concepts or selections from standard repertoire. *Prerequisites:* MUSC 1030 and 1035.

3025. Jazz Theory and Improvisation II. 2. Continuation of Jazz Theory and Improvisation I, MUSC 3020. More advanced topics will be covered and more challenging repertoire will be explored. A strong emphasis will be placed on common practice techniques in mainstream jazz. *Prerequisite:* MUSC 3020.

3255. Sophomore Qualifying Performance Jury. 0. An extended performance jury at the end of the sophomore year. Music majors may not continue to 4000-level lessons without successful completion of the sophomore jury. Transfer students with junior standing must take the jury at the end of their first semester in residence. Contact your studio teacher for the individual Sophomore Jury requirements. Students may register for this course up to 2 times. *Prerequisites:* 4 semesters of private instruction, consent of instructor.

3280. Collaborative Piano II. 1-2 (Max 8). Encompasses supervised practice in the art of collaborative piano playing. Discusses traditional usages as applicable to various schools and periods of vocal and instrumental duo literature. *Prerequisite:* audition required.

3380. Wind Ensemble II. 1 (Max. 8). Preparation and performance in a select concert band of the finest in contemporary and classic wind and percussion repertory. *Prerequisites:* audition required, MUSC 1380 or equivalent and junior standing.

3385. World Music Ensemble. 1 (Max 6). Participate fully in music making in Sikuris de Wyoming, the Wyoming Gamelan Candra Wyoga, or the Laramie Irish tune session. These group music-making opportunities are distinctly different from other leader-focused ensembles offered in the Department of Music. *Prerequisites*: MUSC 1000 or MUSC 1003.

3390. Jazz Ensemble II. 1 (Max. 8). [(none)◀▶H] Preparation and performance in a select jazz ensemble of the finest in jazz repertory. *Prerequisites:* audition required, MUSC 1390 or equivalent and junior standing.

3400. Collegiate Chorale II. 1 (Max. 12). [(none)◀▶H] Provide the advanced and committed singer with outstanding performing experiences ranging from major choral

masterworks to masterpieces of the *a cappella* tradition, both sacred and secular. The choir is a professional training ensemble and students may be asked to take on leadership roles. Commitment of time to advance the excellence and public awareness of the ensemble will be required. *Prerequisites:* audition required, and junior standing or above.

3405. UW Singing Statesmen II. 1 (Max 12). [(none)◀▶H] Provides all levels of singer with the rich tradition of male ensemble singing. Solidify basic musicianship skills and vocal technique while experiencing camaraderie and service to the region. May be asked to take on leadership roles to advance public awareness. Open to music majors and non-music majors without audition. *Prerequisite*: Junior standing or above.

3407. Happy Jacks II. 1 (Max 12). Student-led male *a cappella* ensemble that sings contemporary, jazz, and traditional repertoire. Upperclass students may be asked to take on ledership roles. Ensemble travels regularly to promote male singing through concerts and school workshops. *Prerequisites*: Audition only. Co-requisite: enrollment in The UW Singing Statesmen.

3411. Vocal Jazz II. 1 (Max 12). Sings standard repertory from various jazz traditions, often with rhythm section. Focus on building musical skill and literacy in the jazz idiom. Students may be asked to take on leadership roles. *Prerequisites*: Audition required. Junior standing or above.

3415. Bel Canto Women's Chorus II. 1 (Max 12). [(none)◀▶H] Builds community through score study and the development of fundamental musicianship skills, including sight singing, ear training, and vocal technique. May be asked to take on leadership roles. This ensemble is open to music majors and non-music majors without audition. *Prerequisite*: Junior standing or above.

3417. Laramie Civic Chorus II. 1 (Max 12). [(none)◀▶H] Welcomes students, faculty, and community members. Repertoire includes musical works from a multiplicity of style periods and genres in both Western and non-Western traditions and includes regular collaboration with the UW Symphony Orchestra for major choral works. Students may be asked to take on leadership roles. *Prerequisite*: Junior standing or above; audition required.

3430. Symphony Orchestra II. 1 (Max. 8). [(none)◀▶H] Preparation and performance in a select symphony orchestra of the finest in orchestral repertory. *Prerequisites:* audition required, MUSC 1430 or equivalent and junior standing.

3440. Chamber Orchestra II. 1 (Max. 8). Devoted to the rehearsal and performance of masterpieces from the chamber orchestra repertoire. Students in the 3440 level of Chamber Orchestra will be expected to have a competent level of proficiency on their parts.

3450. Percussion Ensemble II. 1 (Max. 8). A chamber music ensemble, performing repertoire which encompasses classical percussion literature, ethnic drumming styles, and steel drum ensemble. Designed for the advanced undergraduate who has normally attained a higher level of technical ability in percussion by their junior/senior year. *Prerequisites:* four semesters of MUSC 1450 or equivalent and junior standing.

3460. Brass Ensemble II. 1. The University of Wyoming Brass Ensemble is a course devoted to the rehearsal and performance of masterpieces from the brass chamber repertoire. Students in the 3460 level of Brass Ensemble will be expected to have a competent level of proficiency on their parts and assume leadership roles in the ensemble.

3470. Woodwind Ensemble II. 1 (Max. 8). Preparation and performance in a select woodwind chamber ensemble of the finest standard and contemporary wind ensemble literature. Enrollment is restricted to juniors and seniors. *Prerequisites:* audition required; MUSC 1470, and junior standing.

3480. Chamber Music II. 1. [CA◀▶(none)] Designed to provide students with training in the ideal medium of chamber music (small ensembles, such as trio, string quartet, etc.), where they can apply and integrate all elements of their musical knowledge. These include but not limited to rhythm, intonation, tone-production, blend, musical interpretation, concept of style, etc. *Prerequisites:* consent of instructor; MUSC 1480 and junior standing.

3490. Piano Ensemble II. 1 (Max 8). Training in the medium of piano duo and piano duet repertoire, apply and integrate all elements of musical knowledge. These include but are not limited to rhythm, tone-production, musical interpretation, concept of style, etc. *Prerequisites*: consent of instructor; Audition required. Juniors or Seniors.

3495. Baroque Ensemble II. 1. Designed to provide students with the opportunity to play on period instruments of the Baroque era. The repertoire will primarily include music of the Seventeenth and Eighteenth Centuries and whose performance will reflect the spirit and style of the period in which the music was composed. *Prerequisites:* completion of sophomore barrier exam and consent of instructor.

3500. Junior Recital. 0. Students will perform a 30 minute (minimum) recital of appropriate repertoire. Consult your studio teacher for individual studio requirements. *Prerequisites:* 4 semesters of private instruction, consent of instructor.

4010. Counterpoint. 3. Project-oriented, taught with close instructor supervision. Students absorb basic elements of counterpoint and analyze appropriate examples taken from samples of contrapuntal works written over past 300 years, then write five contrapuntal works in diverse styles. *Prerequisite:* MUSC 2040.

4020. Jazz Theory and Improvisation III. 2. Continuation of Jazz Theory and Improvisation II, MUSC 3025. Students will learn the harmonic and melodic language of bebop and hard bop through performance and composition of tunes in these idioms. *Prerequisite:* MUSC 3025.

4025. Jazz Theory and Improvisation IV. 2. Continuation of Jazz Theory and Improvisation III, MUSC 4020. Students explore developments in jazz improvisation and composition since 1960. Advanced theoretical concepts are covered in lectures and workshop sessions. *Prerequisite:* MUSC 4020.

4030. Form and Analysis. 3. Encompasses harmonic, thematic, formal and stylistic analysis of selected works representative of various periods. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030 and 2035.

4040. Composition. 2 (Max. 12). Encompasses original work in construction of smaller forms. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisite:* MUSC 4010.

4050. Advanced Studies in World Music. 3. Focuses on music-making and cultures of three musical traditions from around the world. *Prerequisite:* MUSC 3015.

4060. Applied Composition Lessons. 1-2 (max. 12). Students meet on a weekly basis with the instructor and work on individual composition projects and exercises. Students will be required to take a juried portfolio examination at the end of the semester to determine, in part, the final grade. *Prerequisite:* Previous training proven with a portfolio/audition or MUSC 4040.

4070. Conducting. 3. Examines basic techniques of baton, score reading, familiarization with standard works, practical experience in directing choral and instrumental groups. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030, 2035, 2040 and 2045.

4155. Senior Music Education Recital. 0. Music Education students perform a recital which may be a part of a Convocation or a separate performance. Consult your studio teacher for individual studio requirements. *Prerequisites:* senior standing and studio teacher consent.

4255. Elementary and Secondary Methods: Practicum. 2. Part of Phase IIIa of the music teacher education program. Practicum experience is integral to MUSC 4265 and must be taken concurrently. *Prerequisites:* 2.75 cumulative GPA, successful completion of all music and professional education courses and concurrent enrollment in MUSC 4265. (Offered fall semester)

4265. Elementary and Secondary Music Teaching Methods. 8. [(none)◀▶COM3] Comprised of content and pedagogy in Music. Must be taken in the same semester as the 2 semester hour course, MUSC 4255. *Prerequisites:* 2.75 minimum cumulative GPA, 2.75 GPA in major, successful completion of all music and professional education courses and concurrent enrollment in MUSC 4255. (Offered fall semester).

4300. Instrumentation and Arranging. 3. Explores instruments of the orchestra and band, as well as arranging for various instrumental and choral combinations. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030, 2035, 2395.

4310. Choral Arranging. 2. Teaches working techniques of arranging for the voice in varied combinations of choral ensembles. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030 and 2035.

4315 [3000]. America's Ethnic Music. 3. [CA,D◀▶(none)] Surveys music of ethnic groups in America. *Prerequisite:* MUSC 1000.

4320, 4325, 4330, 4335, 4340, 4345. Historical Period Courses. See individual descriptions below.

4320. Medieval Period. 3. Intensely studies Middle Ages musical literature. For graduate credit, students present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4325. Renaissance Period. 3. Encompasses concentrated survey and analysis of Renaissance music. For graduate credit, students must present extra paper or project to be determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4330. The Baroque Period. 3. [(none)◀▶COM3] Studies origins of Baroque literature. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4335. The Classical Period. 3. Encompasses concentrated survey and style analysis of classical period's music. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4340. The Romantic Period. 3. [CA◀▶COM3] Surveys romantic musical literature. For graduate credit, students must present extra paper or project to be determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4345. Contemporary Period. 3. Surveys styles and composers of contemporary period. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4350. History and Literature of Jazz. 3. Surveys details of American jazz music from the turn of the century to present. Acquaints students with basic jazz materials, techniques and styles, as well as work of selected jazz masters. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisite:* consent of instructor.

4380. Jazz Techniques. 2 (Max. 2). Surveys jazz structure, styles, techniques and materials with respect to public school music programs. Intended for music education major. *Prerequisite:* MUSC 2035. (Offered spring semester)

4400. Vocal Literature. 1/2-2 (Max. 6). Studies solo materials from Renaissance to present, emphasizing style and interpretation. *Prerequisite:* 4 semester hours of voice.

4500. Directed Independent Study-Undergraduate. 1-2 (Max. 4). *Prerequisite:* consent of department head.

4510, 4520, 4530, 4540, 4550, 4560. Applied Music Methods and Materials. Courses taken in the form of private lessons and subject to similar fees. See individual descriptions below. *Prerequisite:* at least 16 semester hours in one performance field and/or consent of instructor.

4510. Brass Instruments. ($85 Fee) 1 (Max.2).

4520. Organ. ($85 Fee) 1 (Max. 2).

4530. Piano. ($85 Fee) 1 (Max. 2).

4540. Woodwind Instruments. ($85 Fee) 1 (Max. 2).

4550. Stringed Instruments. ($85 Fee) 1 (Max. 2).

4560. Voice. ($100 Fee) 1 (Max. 2).

4590. Senior Recital. 2 (Max. 4). *Prerequisites:* at least 14 semester hours in one performance field and senior standing.

4600. Piano Pedagogy. 0.5-2 (Max. 3). Includes critical study and evaluation of piano teaching methods and materials. *Prerequisite:* 8 credit hours of piano study.

4610. Vocal Pedagogy. 0.5-2 (Max. 3). Surveys techniques, practices and materials. *Prerequisite:* 8 credit hours of voice. (Offered spring semester)

4615. Instrumental Pedagogy. 0.5-2 (Max. 3). Surveys teaching materials in solo and chamber literature, techniques, practices, and methods for applicable instrument. *Prerequisite:* 8 credit hours of individual study in a specific instrument.

4620. Practicum in Music Education. 1. Provides opportunity to gain experience in music classroom in area public schools. Includes work on meeting educational standards of Wyoming necessary to begin student teaching and continued work on developing a teaching portfolio. *Prerequisites:* MUSC 1050 and junior status.

4650. Keyboard Literature. 3. An overview of solo ensemble keyboard literature from the 1600s to the present, focusing on major composers and common compositional forms. Includes listening assignments and examinations as well as individual research papers and class presentations. *Prerequisites:* MUSC 2050 and 2055.

4651. String Solo Literature. 3. Provide a survey of the masterpieces of string solo literature (violin,viola, cello and bass literature) in a historical and musical context. Includes listening assignments and examinations as well as class presentations. *Prerequisites*: 8 hours of lessons in string instruments.

4652. String Chamber Literature. 3. Provide a survey of the masterpieces of string chamber literature in a historical and musical context. Includes listening assignments and examinations as well as class presentations. *Prerequisites*: 8 hours of lessons in string instruments.

4700. Elementary Student Teaching in Music. 8. The final professional academic semester of the teacher education program. A full-time residency with an elementary mentor teacher. Offered Satisfactory/Unsatisfactory only. *Prerequisites:* 2.75 cumulative GPA, 3.0 GPA in major content courses, completion of all content courses, successful completion of Phase IIIa specific pedagogy and practicum, complete review of the prospective teacher's record.

4710. Secondary Student Teaching in Music. 8. The final professional academic semester of the teacher education program. A

full-time residency with a secondary mentor teacher. Offered. Satisfactory/Unsatisfactory only. *Prerequisites:* 2.75 cumulative GPA, 3.0 GPA in major content courses, completion of all content courses, successful completion of Phase IIIa specific pedagogy and practicum, complete review of the prospective teacher's record.

4750. Marching Band Techniques. 1. Applies specific various drill design techniques including corps style, military, show band and computer applications.

4780. Instrumental Conducting and Repertory. 2. Applies specific basic conducting techniques to instrumental group rehearsals concerning such problems as intonation, phrasing, dynamics, balance, etc. Overviews appropriate selection procedures for band and orchestral literature. *Prerequisite:* MUSC 4070 and 2395.

4790. Choral Conducting and Repertory. 2. Applies specific basic conducting techniques to choral group rehearsals concerning such problems as intonation, good vocal production, phrasing, diction, dynamics, balance, etc. Overviews appropriate choral literature. *Prerequisite:* MUSC 4070 and passed piano proficiency requirement.

4990. Topics in _____. 1-12 (Max. 12). Encompasses various topics in music. Specific subjects vary from year to year as course is often taught by distinguished visiting artists and lecturers or music faculty. Presents topics of special interest to music majors, graduate students and music educators. Please check class schedule for course titles each semester. *Prerequisite:* consent of instructor.

5010. Mentoring the Pre-Service Music Educator. 1 (Max. 4). Designed for K-12 supervisors of pre-service music teachers, the goal of the course is to provide guidance and theoretical grounding through readings, discussion, journaling, and research projects. Participants will participate in two on-site workshops, weekly tele-conferences and complete a written research project. *Prerequisite:* consent of instructor.

5030. Advanced Theory I. 3. First semester of a one-year course. Analysis of, and practice in, the more recent harmonic idioms with advanced aural and keyboard harmony. *Prerequisite:* MUSC 2030, 2035.

5080. Baritone Horn V. 1-2 (Max. 8). *Prerequisite:* 2-4 semester hours of MUSC 4080 on the same instrument or graduate standing.

5090. Bassoon V. 1-2 (Max. 8).

5100. Cello V. 1-2 (Max. 8).

5110. Clarinet V. 1-2 (Max. 8).

5120. Double Bass V. 1-2 (Max. 8).

5130. Flute V. 1-2 (Max. 8).

5140. French Horn V. 1-2 (Max. 8).

5150. Guitar V. 1-2 (Max. 8).

5160. Harp V. 1-2 (Max. 8).

5170. Oboe V. 1-2 (Max. 8).

5180. Organ V. 1-2 (Max. 8).

5190. Percussion V. 1-2 (Max. 8).

5200. Piano V. 1-2 (Max. 8).

5210. Saxophone V. 1-2 (Max. 8).

5220. Trombone V. 1-2 (Max. 8).

5230. Trumpet V. 1-2 (Max. 8).

5240. Tuba V. 1-2 (Max. 8).

5250. Violin V. 1-2 (Max. 8).

5260. Viola V. 1-2 (Max. 8).

5270. Voice V. 1-2 (Max. 8).

5310. Music Research Methods. 2. Prepares students to be knowledgeable consumers of music and interdisciplinary information. Topics include the musicology research process, information ethics, and critical analyses and integration of information sources into writing. Information literacy princliples and research techniques equip students for both graduate-level music research and the post-graduate, professional world. *Prerequisite:* graduate standing in music.

5320. Advanced Seminar. 2-6 (Max. 6). Such topics as The Music of J.S. Bach, The Chamber Music of Mozart, and Contemporary Music will be pursued and will terminate in oral reports and a research paper. *Prerequisite:* MUSC 5310.

5330. Advanced Instrumentation and Arranging. 1-3 (Max. 3). Continued practice in choral and instrumental scoring. A work of large design will be adapted for performance by one of the organizations within the division. *Prerequisite:* MUSC 4300.

5340. Advanced Composition. 1-4 (Max. 6). A project course to be conducted by individual appointment with the instructor. The result should be the production of a major work suitable for performance by one of the campus organizations. Evaluation is made by a faculty committee on completion and performance of the composition. *Prerequisite:* 4 hours of MUSC 4040.

5350. Advanced Analysis. 3. Consideration of the analytical techniques of Harder, Piston, and Schillinger for traditional music, of Hanson and Hindemith for modern tonal music, and of Schoenberg and Reti for serial music. *Prerequisite:* graduate standing in music.

5360. Pedagogy of Theory. 2. Consideration of the subject matter of all undergraduate theory courses, procedures for presenting the material, and analysis and evaluation of texts and methods. *Prerequisite:* graduate standing in music.

5370. Advanced Choral Conducting. 1-2 (Max. 3). The interpretation of well-known oratories and cantatas; experience in the direction of campus choral groups. *Prerequisite:* MUSC 4070, 4790.

5380. Advanced Instrumental Conducting. 1-2 (Max. 3). Interpretive analysis of instrumental works in large form; experience in the direction of campus performing groups. *Prerequisite:* MUSC 4070, 4780.

5390. Performance Practice and Interpretation. 2. A study of the inherited traditions of correct interpretation and performance as related to the various style periods in music. *Prerequisite:* graduate standing in music.

5400. Independent Study and Research. 1-2 (Max. 6). *Prerequisite:* graduate standing and consent of instructor.

5410. History of Musical Instruments. 2. An investigation of the mechanical evaluation of musical instruments as related to the music written for these instruments. *Prerequisite:* graduate standing in music.

5480. Baritone Horn VI. 1-2 (Max. 8).

5490. Bassoon VI. 1-2 (Max. 8).

5500. Cello VI. 1-2 (Max. 8).

5510. Clarinet VI. 1-2 (Max. 8).

5520. Double Bass VI. 1-2 (Max. 8). Covers appropriate technical and repertory materials in graduate-level double bass. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5530. Flute VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level flute. A faculty jury will review each semester's work. *Prerequisite*: graduate standing in music.

5540. Guitar VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level guitar. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5550. Harp VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level harp. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5560. French Horn VI. 1-2 (Max. 8). *Prerequisite:* 4 semester hours of MUSC 4560 or graduate standing.

5570. Oboe VI. 1-2 (Max. 8). *Prerequisite:* 4 semester hours of MUSC 4570 or graduate standing.

5580. Organ VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate- level organ. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5590. Percussion VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level percussion. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5600. Piano VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level piano. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5610. Saxophone VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level sax. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5615. Capstone. 3. Designed to provide a forum to present research in music that fulfills requirements of the Plan B process. Instruction is individualized, but involves cooperative learning opportunities with other students. The student presents the finished product to the class members. Course is restricted to students doing Plan B paper only. *Prerequisite:* Plan B proposal approved by the music department graduate committee.

5620. Trombone VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level trombone. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5630. Trumpet VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level trumpet. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5640. Tuba VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level tuba. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5650. Violin VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level violin. A faculty jury will review each semester's work. *Prerequisite:* graduate standing in music.

5660. Viola VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level viola. A faculty jury will review each semester's work. *Prerequisite*: graduate standing in music.

5670. Voice VI. 1-2 (Max. 8). Designed to cover appropriate technical and repertory materials in graduate-level voice. A faculty jury will review each semester's work. *Prerequisite*: graduate standing in music.

5680. Graduate Recital. 2. A recital, vocal or instrumental and consisting of selections of advanced difficulty in matters of technique and interpretation, is presented under the direction of a staff member. Quality and content of recital must be approved by a faculty committee one month before the recital date, and the faculty committee will determine the final grade. *Prerequisite:* graduate standing in music and consent of instructor.

5690. Advanced Teaching Methods - Brass. 1. Designed to present new and improved methods of teaching the various band and orchestral instruments in the public schools.

5700. Advanced Teaching Methods - String. 1. Designed to present new and improved methods of teaching the various band and orchestral instruments in the public schools.

5710. Advanced Teaching Methods - Woodwind. 1. Designed to present new and improved methods of teaching the various band and orchestral instruments in the public schools.

5720. Musical Supervision: Choral. 2. Examination of the administrative responsibilities of the music teacher, the music department chairman, and the district music supervisor in the public schools, as well as the responsibilities of a music festival chairman and officers of the state music educators association. *Prerequisite:* graduate standing in music.

5730. Musical Supervision: Instruments. 2. Examination of the administrative responsibilities of the music teacher, the music department chairman, and the district music supervisor in the public schools, as well as the responsibilities of a music festival chairman and officers of the state music educators association. *Prerequisite:* graduate standing in music.

5740. Choral Techniques and Materials. 1 (Max. 1.2).

5750. Band Techniques and Materials. 1 (Max. 1.2).

5760. Music Education Seminar. 2. A study and discussion of trends, objectives, and curricula of the various phases of music education.

5770. Marching Band. 0.5 (Max. 2).

5780. Wind Ensemble III. 0.5 (Max. 2). One of the elite ensembles in the Department of Music, Wind Ensemble offers participants the opportunity to prepare and perform some of the finest, most technically challenging, contemporary and classic wind and percussion repertory. *Prerequisites:* graduate or Performer's Certificate students, audition required..

5790. Jazz Ensemble III. 0.5 (Max. 2). Preparation and performance in a select jazz ensemble of the finest in standard jazz ensemble repertory and contemporary compositions by living jazz artists. Enrollment is restricted to graduate and Performer's Certificate students only. *Prerequisites*: audition required.

5800. Collegiate Chorale III. 0.5 (Max. 12). Provide the advanced and committed singer with outstanding performing experiences ranging from major choral masterworks to masterpieces of the *a cappella* tradition, both sacred and secular. The choir is a professional training ensemble and students may be asked to take on active musical leadership roles. Commitment of time to advance the excellence and public awareness of the ensemble will be required. *Prerequisites*: audition required, and graduate standing.

5805. The UW Singing Statesmen III. 0.5 (Max 12). The UW Singing Statesmen provides all levels of singers with the rich tradition of male ensemble singing. Students will solidify basic musicianship skills and vocal technique while experiencing camaraderie and service to the region. Students may be asked to take on music leadership roles and advance the excellence and public awareness of the ensemble. Open to music majors and non-music majors without audition. *Prerequisite*: Graduate standing.

5807. Happy Jacks III. 0.5 (Max 12). Student-led male *a cappella* ensemble that sings contemporary, jazz, and traditional repertoire. The ensemble travels regularly to promote male singing through concerts and school workshops. Students may act as musical director. Audition only. Co-requisite: enrollment in The UW Singing Statesmen. *Prerequisites*: Audition required. Graduate standing.

5811. Vocal Jazz III. 0.5 (Max 12). Sings standard repertory from various jazz traditions, often with rhythm section. Focus on building musical skill and literacy in the jazz idiom. Students may be asked to take on leadership roles. Audition only. *Prerequisites*: Audition required. Graduate standing.

5815. Bel Canto Women's Chorus III. 0.5 (Max 12). Builds community through score study and the development of fundamental musicianship skills, including sight singing, ear training, and vocal technique. Students may be asked to take on leadership roles. This ensemble is open to both music majors and non-music majors without audition. *Prerequisite*: Graduate standing.

5817. Laramie Civic Chorus III. 0.5 (Max 12). Welcomes students, faculty, and community members. Repertoire includes musical works from a multiplicity of style periods and genres in both Western and non-Western traditions and includes regular collaboration with the UW Symphony Orchestra for major choral works. Students may be asked to take on leadership roles. *Prerequisite*: Graduate standing; audition required.

5820. Opera Theatre. 0.5 (Max. 2).

5830. Symphony Orchestra III. 0.5 (Max. 2). The premier orchestral ensemble in the Department of Music. Participation in this ensemble prepares students to perform some of the great symphonic literature from a wide variety of musical periods. *Prerequisites:* graduate or Performer's Certificate students; audition required.

5840. Chamber Orchestra. 0.5-1. (Max. 2). Devoted to the rehearsal and performance of masterpieces from the chamber orchestra repertoire. Students in the 5840 level of Chamber Orchestra will be expected to assume leadership roles within the ensemble, help with bowings, lead sectionals and be highly proficient on their individual parts.

5850. Percussion Ensemble. 0.5 (Max. 2).

5860. Brass Ensemble III. 0.5 (Max. 2). The University of Wyoming Brass Ensemble is a course devoted to the rehearsal and performance of masterpieces from the brass chamber repertoire. Students in the 5860 level of Brass Ensemble will be expected to have a high level of proficiency on their parts and assume leadership roles within the ensemble.

5870. Woodwind Ensemble III. 0.5 (Max. 2). Preparation and performance in a select woodwind chamber ensemble of the finest standard and contemporary wind ensemble literature. *Prerequisites:* graduate or Performer's Certificate students; audition required.

5880. Chamber Music III. 0.5 (Max. 2). Designed to provide students with training in the ideal medium of chamber music (small ensembles, such as trio, string quartet, etc.), where they can apply and integrate all elements of their musical knowledge. These include but are not limited to rhythm, intonation, tone-production, blend, musical interpretation, concept of style, etc. *Prerequisites:* graduate or Performer's Certificate students; audition required.

5885. Collaborative Piano III. 1-2 (Max. 8). Encompasses supervised practice in the art of collaborative piano playing. Discusses traditional usages as applicable to various schools and periods of vocal and instrumental duo literature. *Prerequisites*: Audition required; MUSC 3280 or equivalent and graduate standing.

5890. Piano Ensemble III. 0.5-1 (Max. 2). Designed to provide students with training in the medium of piano duo and piano duet repertoire, where they can apply and integrate all elements of their musical knowledge. These include but are not limited to rhythm, tone-production, musical interpretation, concept of style, etc. *Prerequisites*: consent of instructor; Audition required. Performer's Certificate and Graduate students.

5895. Baroque Ensemble III. 1 (Max. 1.2). Designed to provide students with the opportunity to play on period instruments of the Baroque era. The repertoire primarily includes music of the Seventeenth and Eighteenth Centuries and whose performance practices reflect the spirit and style of the period in which the music was composed. *Prerequisite:* consent of instructor.

5900. Practicum in College Teaching. 1-3. (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Philosophy

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Department Head: Franz-Peter Griesmaier

Professors:

HARVEY HIX, B.A. Belmont College 1982; M.A. University of Texas, Austin 1985; Ph.D. 1987; Professor of Philosophy 2013.

JEFFREY A. LOCKWOOD, B.S. New Mexico Institute of Mining and Technology 1982; Ph.D. Louisiana State University 1985; Professor of Philosophy 2006.

Associate Professors:

SUSANNA L. GOODIN, B.A. Texas Technical University 1981; M.A. Rice University 1985; Ph.D. 1990; Associate Professor of Philosophy 1998, 1992.

FRANZ-PETER GRIESMAIER, University of Vienna 1986; M.A. University of Colorado 1988; Ph.D. University of Arizona 1997; Associate Professor of Philosophy 2006, 2000.

EDWARD D. SHERLINE, B.A Princeton University 1982; M.A. University of Chicago 1983; Ph.D. University of Illinois-Chicago 1990; Associate Professor of Philosophy 1996, 1989.

Adjunct Professor:

ROBIN HILL, B.A. University of Wyoming 1975; M.A. University of East Anglia 1978; M.S. University of Arizona 1981; Ph.D. State University of New York at Buffalo 1994; Adjunct Professor in Philosophy 1996.

Academic Professional Lecturer:

ROBERT S. COLTER, B.A. The University of Puget Sound 1992; M.A. University of Colorado 1995; Ph.D. Northwestern University 2001; Academic Professional Lecturer 2013, 2007.

Professors Emeriti:

James Forrester, Richard L. Howey, James A. Martin, Carlos Mellizo-Guadrado

Philosophy starts with those hard questions we all ask at some time or another. Some important questions of meaning and justification can't be answered by making observations or doing experiments. Philosophy is the effort to deal with these problems through sustained, hard, and critical thinking. Philosophy is good preparation for careers that call for you to use your mind, without prejudice but with rigor.

The Philosophy Department offers an undergraduate major, three undergraduate minors, and a graduate MA.

For details on each of these programs, see the department's web site.

Undergraduate Major

A philosophy major must earn a C or better in 11 philosophy courses, including three courses at or above the 4000-level and five additional courses at or above the 3000-level. Our courses fall into four program areas: metaphysics and epistemology; ethics and philosophy of value; logic and philosophy of science; and history of philosophy. In each of these areas, there are two core courses. Philosophy majors choose three of the four distribution areas; they take at least two courses, including a core course, in each of the chosen areas. All prospective majors should take Introduction to Philosophy.

The department allows its majors to concentrate in a number of interdisciplinary areas, and we welcome double-majors in philosophy and another field. Please consult the department's undergraduate adviser to work out a suitable program.

Minor in Philosophy

The minor in philosophy affords students the benefits, both personal and professional, of studying philosophy.

A student minoring in philosophy must earn a C or better in six philosophy courses, including four at the 3000-level or higher.

Minor in Ethics

Ethical questions and problems arise in all aspects of life. A minor in ethics can complement and enrich any major field of study.

The minor in ethics consists of six courses, four at the 3000 level or above. A student takes one course in each of these areas: ethical theory; applications; scientific, historical and social analysis, and capstone course. The other two courses are approved electives.

Minor in Environmental Values

The minor in Environmental Values may be added to any bachelor's program at UW. This minor creates a vital link among the natural sciences, humanities, and social sciences through exploration of aesthetics, culture, ethics, and policy.

The minor requires a total of 18 credit hours, including at least one course within each of four areas of concentration. At least 12 of these credits must be outside the primary major, and nine of these credits must be at or above the 3000-level. A three-hour, core course (either PHIL 2330 Environmental Ethics or PHIL 2340 Natural Resource Ethics) is required of all students.

Graduate Study

The Department of Philosophy offers the master of arts degree under the Plan A

Program Specific Admission Requirements

A writing sample of no more than 3,000 words on any subject in philosophy.

A statement describing specific philosophical interests.

Program Specific Graduate Assistantships

The department offers two to three graduate assistantships yearly on a competitive basis. These assistantships carry a tuition and fee waiver, plus a stipend. For more information, please contact the department.

Program Specific Degree Requirements

Plan A (thesis)

31 hours of graduate credit
27 hours of graduate coursework
4 hours of thesis research

Proof of proficiency in formal logic (through first-order predicate logic with identity) by either passing the department's course (3420) or some other course judged to be its equivalent with a grade B or better or by completing a test with a grade B or better at the end of the second semester.

First year paper at the beginning of the third semester.

Defense of a thesis prospectus by the end of the third semester.

In any cases of deficiency, the department may require remedial work before admission to M.A. candidacy.

Philosophy (PHIL)

Philosophy majors may not take any philosophy course for S/U credit without written permission from the department head.

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Introduction to Philosophy. 3. [CH◀▶H] Introduces critical thinking through a study of elementary logic, scientific method and philosophical problems of ethics, religion, epistemology and metaphysics.

2100. The Greek Mind. 3. [CH◀▶(none)] Part one of the history of philosophy sequence. The first great age of philosophy was in ancient Greece. Students read from ancient Greek poets, historians and medical writers, as well as philosophers. The course attempts to understand the Greek mind: what Greeks thought of persons, society and the universe. *Prerequisite:* 3 hours of philosophy.

2200. Social and Political Philosophy. 3. Critically or historically examines philosophical issues arising from the study of society and state. Topics may include the existence and nature of rights; the relation between law and morality; the obligation of citizens to their society; the nature of a just society; and theories of reward and punishment.

2300. Ethics in Practice. 1-3 (Max. 6). [CH◀▶(none)] Alerts preprofessional students and other interested individuals to various ethical issues they will encounter and relevant professional work on those issues. Emphasis of the course concentrates one time on biomedical ethics, another on technology and engineering ethics, another on ethics in the professions.

2310. Philosophy of Religion. 3. [CH◀▶(none)] Systematically examines philosophical questions, arguments and theories arising from study of religion. Topics may include: reason and religion; the existence and nature of God; the character of religious language; and attempts to determine the authenticity of religious experience. *Prerequisite:* 3 hours of philosophy.

2330. Environmental Ethics. 3. [CH◀▶(none)] Introduction to ethical theory in environmental problem cases, and to philosophical issues in environmental philosophy. Ethical theories include natural law, utilitarianism, deontological and rights-based theories, relativism. Topics may include: conservation/preservation, resource management, pollution, overpopulation, factory farming, Leopold's land ethic, deep ecology, holism, eco-feminism. Cross listed with ENR 2330.

2345. Natural Resource Ethics. 3. [CH,D◀▶H] Introduction to ethics in context of natural resource extraction, use, conservation, preservation, and distribution. Ethical frameworks include teleological and deontological theories primarily applied to human needs and wants. Concepts and applications of environmental justice are addressed, including private property, sustainability, and obligations to future generations. Cross listed with ENR/RNEW 2345.

2420 [1100]. Critical Thinking. 3. [CH◀▶(none)] Shows that argument is a skill of fundamental importance to any field of endeavor. Explains methods used in evaluating an argument. Introduces such topics as: patterns of reasoning, counterexamples, fallacies; inductive and deductive logic.

3000. Special Topics. 3 (Max. 9). Provides undergraduates with the opportunity for in-depth discussion of seminal works in the history of philosophy or a problem in contemporary philosophy not offered in regular courses or independent study. Open to interested undergraduates from all majors. *Prerequisite:* 3 hours of philosophy.

3100. History of Modern Philosophy: The Rationalists. 3. The second great age of philosophy absorbed the influence of the new science during the 17th and 18th centuries. People to be studied include: Descartes, Spinoza and Leibniz. *Prerequisite:* 3 hours of philosophy.

3110. History of Modern Philosophy: The Empiricists. 3. People to be studied include: Locke, Berkeley, Hume and Kant. These

philosophers are included in the second great age of philosophy. *Prerequisite:* 3 hours of philosophy.

3120. Ancient Greek Philosophy. 3. Surveying some of ancient Greek philosophy. Begins with the works of the earliest extant philosophical thinkers, the presocratics. Remainder of focus on Plato and Aristotle. *Prerequisite:* 3 hours of philosophy.

3140. Philosophy of Science. 3. Systematically examines philosophical problems about the nature of science, its methods of explanation, and the status of its laws and theories. *Prerequisite:* 6 hours of physical, biological or social science.

3220. Existentialism and Phenomenology. 3. Examines fundamental perspectives of existentialist thought, beginning with its roots in Kierkegaard and Nietzsche. Looks at a large variety of existentialist perspectives presented by Sartre, Heidegger, Buber, Jaspers and Camus. Considers the relation of Husserl's phenomenological method to existentialism. *Prerequisite:* 3 hours of philosophy.

3250. Global Justice. 3. [G◀▶(none)] An examination of global justice, normative international relations, and international ethics, using the methodology and theories of analytical political philosophy. Possible topics include global economic justice and world poverty, human rights, humanitarian duties, intervention and sovereignty, cosmopolitanism, nationalism, patriotism, world hunger, and immigration. *Prerequisite:* 3 hours of philosophy or international studies.

3300. Ethical Theory. 3. A philosophical investigation of such concepts as morality, obligation, goodness, freedom and responsibility, and of recurring types of ethical theory. *Prerequisite:* 3 hours of philosophy.

3320. Eastern Thought. 3. Surveys some of the major concepts in Zen, Hinduism, Buddhism, Taoism and Confucianism. Cross listed with RELI 3320. *Prerequisite:* 3 hours of philosophy.

3340 [2340]. Philosophy in Literature. 3 (Max 6). Examines central themes in literary works with philosophical significance; studies related general issues. Authors studied may include Aristotle, Dostoyevski, Kafka, ee cummings, Grass, Mann, Pound, Rilke, Camus, and Sartre. Issues include questions of interpretation, criticism, and translation, as well as the possibility of direct philosophical influence on authors. Cross listed with ENGL 3340. *Prerequisites:* one course in philosophy and one course in literature or criticism in the English department.

3350. History of Moral Philosophy. 3. A historical and philosophical overview of ethical theory ranging from ancient Greek ethics to the present. *Prerequisite:* 3 hours of philosophy.

3420. Symbolic Logic. 3. Studies both propositional and quantificational logic, concentrating on methods of proof. Takes up such topics as identity, singular terms, intuitive set theory, and translating English sentences into symbolic notation. *Prerequisites:* 3 hours of philosophy

3440. Philosophy of Mind. 3. Considers topics in philosophy of mind, including the mind-body problem, emotions, attitudes, perception and psychological explanation. *Prerequisite:* 3 hours of philosophy.

3500. History of Science. 3. Historic and philosophic survey of the development of science from the ancient Greeks to the 20th century. *Prerequisites:* 3 hours of laboratory science and 3 hours of philosophy.

3510. Introduction to Epistemology. 3. Systematic introduction to epistemology, the philosophical study of knowledge and justified belief. Aims to answer questions such as: What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits? How we are to understand the concept of justification? *Prerequisite:* 3 hours of philosophy.

3560. Introduction to Metaphysics. 3. A systematic introduction to metaphysics, the branch of philosophy concerned with providing a comprehensive account of the most general features of reality as a whole. Of central importance is the study of ontology, which seeks to address the question of what general sorts of things exist: particulars, universals, propositions, numbers, minds. *Prerequisite:* 3 hours of philosophy.

4000. Philosophical Issues. 1-3 (Max. 6). Dual listed with PHIL 5000. *Prerequisite:* consent of instructor.

4020. Plato. 3. Detailed examination of selected dialogues of Plato. Dual listed with PHIL 5020. *Prerequisite:* 12 hours of philosophy including PHIL 2100.

4030. Aristotle. 3. Detailed examination of selected works of Aristotle. Dual listed with PHIL 5030. *Prerequisite:* 12 hours of philosophy including PHIL 2100.

4040. Kant. 3. An examination of one or more aspects of the work of Immanuel Kant, conducted either from the perspective of the history of philosophy, or predominantly as a critical study. Dual listed with PHIL 5040. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

4110. Figures in Contemporary Philosophy. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 5110. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

4120 [4100]. Philosophy and the 20th Century. 3. Part three of the history of philosophy sequence. Covers the third great age of philosophy. Studies the main ways in which philosophy has been done since 1900. Topics normally include logic and philosophy, Wittgenstein, logical positivism and current trends. Dual listed with PHIL 5120. *Prerequisites:* PHIL 4120/5120, PHIL 4120; 12 hours of philosophy including either PHIL 2100 or 3100.

4140. Topics in Philosophy of Science. 3 (Max. 6). Encompasses selected topics in philosophy of science. Dual listed with PHIL 5140. *Prerequisite:* 12 hours of philosophy including PHIL 3140; PHIL 2220 is recommended.

4190. Philosophy of Language. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 5190. *Prerequisite:* 12 hours of philosophy including PHIL 4510 or 4560.

4300. Topics in Ethics. 3-6 (Max. 6). An advanced investigation of selected topics in ethics. Examples include derivative and basic principles of obligation; justice; morality and utility; generalization of norms; and the relation of morality and law. Dual listed with PHIL 5300. *Prerequisite:* 12 hours of philosophy including PHIL 3300 or 3350.

4340. Issues in Environmental Ethics. 3. Encompasses selected topics in environmental and natural resource ethics. Cross listed with RNEW 4340. Dual listed with PHIL 5340. *Prerequisites:* PHIL 2330, 2345, 3300 or 3350.

4420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Dual listed with PHIL 5420; cross listed with COSC/MATH 4420. *Prerequisite:* PHIL 3420 or equivalent.

4440. Topics in Philosophy of the Mind. 3-6 (Max. 6). An advanced study of problems in the philosophy of mind such as the concept of human action; intention, choice, reasons and causes in the explanation of human action, mental states and brain states, and artificial intelligence. Dual listed with PHIL 5440. *Prerequisite:* 12 hours of philosophy including PHIL 3440.

4510. Theory of Knowledge. 3. Studies such problems as knowledge and belief, skepticism, perception and knowledge, memory, truth and justification of induction. Dual listed with PHIL 5510. *Prerequisite:* 12 hours of philosophy including PHIL 3100 and 4100.

4560. Metaphysics. 3. Examines approaches to metaphysics. Discusses problems such as causality, individuation and the distinction between particulars and universals. Dual listed with PHIL 5560. *Prerequisites:* 12 hours of philosophy including PHIL 3100 and 4100.

5000. Philosophical Issues. 1-3 (Max. 6). Dual listed with PHIL 4000. *Prerequisites:* graduate status and consent of instructor.

5020. Plato. 3. Detailed examination of selected dialogues of Plato. Dual listed with PHIL 4020. *Prerequisite:* graduate standing.

5030. Aristotle. 3. Detailed examination of selected works of Aristotle. Dual listed with PHIL 4030. *Prerequisite:* graduate standing.

5040. Kant. 3. An examination of one or more aspects of the work of Immanuel Kant, conducted either from the perspective of the history of philosophy, or predominantly as a critical study. Dual listed with PHIL 4040. *Prerequisite:* graduate standing.

5100. Figures in Modern and 19th Century Philosophy. 3-6 (Max. 6). A detailed examination of one or more of the figures in modern or 19th century philosophy. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

5110. Figures in Contemporary Philosophy. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 4110. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

5120. Philosophy and the Twentieth Century. 3. Part three of the history of philosophy sequence. Covers the third great age of philosophy. Studies the main ways in which philosophy has been done since 1900. Topics normally include logic and philosophy, Wittgenstein, logical positivism and current trends. Dual listed with PHIL 4120. *Prerequisite:* graduate standing.

5140. Topics in Philosophy of Science. 3-6 (Max. 6). Encompasses selected topics in philosophy of science. Dual listed with PHIL 4140. *Prerequisite:* 12 hours of Philosophy including PHIL 3140.

5190. Philosophy of Language. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 4190. *Prerequisite:* 12 hours of philosophy including PHIL 4510 or 4560.

5200. Topics in Contemporary Philosophy. 3-6 (Max. 6). An advanced investigation of topics of current importance in philosophy not dealt with in other advanced courses. Examples include: truth, nature of conceptual schemes and world views, and nature of philosophical problems and arguments. *Prerequisite:* 12 hours of philosophy including PHIL 1000 and consent of instructor.

5300. Topics in Ethics. 3-6 (Max. 6). An advanced investigation of selected topics in ethics. Examples include derivative and basic principles of obligation; justice; morality and utility; generalization of norms; and the relation of morality and law. Dual listed with PHIL 4300. *Prerequisite:* graduate standing.

5340. Issues in Environmental Ethics. 3. Encompasses selected topics in environmental and natural resource ethics. Dual listed with PHIL 4340. *Prerequisite:* PHIL 2330, 2345, 3300 or 3350.

5420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Dual listed with PHIL 4420; cross listed with COSC/MATH 5420. *Prerequisite:* PHIL 3420 or equivalent; graduate standing.

5440. Topics in the Philosophy Of Mind. 3-6 (Max. 6). An advanced study of problems in the philosophy of mind such as the concept of human action; intention; choice; reasons and causes in the explanation of human action; mental states and brain states; and artificial intelligence. Dual listed with PHIL 4440. *Prerequisite:* 12 hours of philosophy including PHIL 3440.

5510. Theory of Knowledge. 3. Studies such problems as knowledge and belief, skepticism, perception and knowledge, memory, truth and justification of induction. Dual listed with PHIL 4510. *Prerequisites:* 12 hours of philosophy including PHIL 3100 and 4100.

5550. Independent Study. 1-6 (Max. 6). A study of a topic selected in consultation with the instructor. *Prerequisite:* 12 hours of philosophy and consent of instructor.

5560. Metaphysics. 3. Examines approaches to metaphysics. Discusses problems such as causality, individuation and distinction between particulars and universals. Dual listed with PHIL 4560. *Prerequisites:* graduate standing.

5890. Problems in Philosophy. 1-10 (Max. 10). A study of specific topics to be selected in consultation with the instructor. *Prerequisite:* 15 hours of philosophy and consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes. *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Physics and Astronomy

204 Physical Sciences Building, 766-6150
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Web site: www.uwyo.edu/physics
Department Head: Daniel A. Dale

Professors:

MICHAEL S. BROTHERTON, B.S. Rice University 1990; M.A. University of Texas at Austin 1992; Ph.D. 1996; Professor of Physics and Astronomy 2014, 2002.

YURI DAHNOVSKY, Institute of Chemical Physics, Moscow 1983; Professor of Physics 2007, 2000.

DANIEL A. DALE, B.S. University of Minnesota 1993; M.S. Cornell University 1996; Ph.D. 1998; Professor of Physics and Astronomy 2009, 2001.

PAUL E. JOHNSON, B.S. Davidson College 1973; M.S. University of Washington 1977; Ph.D. 1979; Head of the Department of Physics and Astronomy 1997; Professor of Physics and Astronomy 1993, 1981.

HENRY A. KOBULNICKY, B.S. University of Iowa 1991; M.S. University of Minnesota 1993; Ph.D. 1997; Professor of Physics and Astronomy 2014, 2002.

JINKE TANG, B.S. Jilin University 1982; M.S. Iowa State University 1990; Ph.D. 1989; Professor of Physics 2007.

Associate Professors:
MICHAEL J. PIERCE, B.S. University of Oklahoma 1980; M.A. University of Hawaii 1983; Ph.D. 1988; Associate Professor of Physics and Astronomy 2005, 2001.
WENYONG WANG, B.S. Nankai University 1993; M.S. Yale University 1999; Ph.D. 2004; Associate Professor of Physics 2014, 2008.

Assistant Professors:
TEYU CHIEN, B.S. National Taiwan Normal University 2001; Ph.D. University of Tennessee-Knoxville 2009; Assistant Professor of Physics 2013.
HANNAH JANG-CONDELL, S.B. Massachusetts Institute of Technology 1999; A.M. Harvard University 1999; Ph.D. 2004; Assistant Professor of Physics and Astronomy 2011.
ADAM D. MYERS, M.S. Durham University, United Kingdom 2000; Ph.D. 2004; Assistant Professor of Physics and Astronomy 2011.

Academic Professional Lecturers:
RÜDIGER MICHALAK, Dipl. Phys FZ Julich 1989; Ph.D. 1993; Academic Professional Lecturer in Physics and Astronomy 2007, 2004.
DAVID R. THAYER, B.S. University of Miami 1977; Ph.D. Massachusetts Institute of Technology 1983; Academic Professional Lecturer in Physics 2002.

Assistant Lecturer:
EDWARD KONCEL, B.S. Portland State University 1969; M.S. University of Wyoming 1988; Ed.D. 1992; Assistant Lecturer in Physics and Astronomy 1999.
JIMMIE VERLEY, B.S. Colorado State University 1967; B.S. University of Wyoming 1980; Ph.D. 2008; Assistant Lecturer in Physics 2014.

Adjunct Professors:
Allam, Bianchini, Kutyrev, Marquard, Norris, Shang, Slater, Wang

Professors Emeriti:
Ronald W. Canterna, Walter T. Grandy, A. Raymond Kunselman, Terry P. Roark, James M. Rosen

Physics originated in antiquity as the study of natural philosophy. As such, it attempts to describe the universe within the context of both physical laws and the fundamental particles of nature. The broad scope of physics runs from the microscopic nuclear structure and that of the elementary particles themselves to the macroscopic, the galaxy and evolution of the universe as a whole. Today the subject is generally divided into broad areas such as solid-state, nuclear, elementary particles, astrophysics, etc. The department maintains competence in most major branches of physics and offers instruction in these areas at both the undergraduate and graduate levels. In addition, it has a strong interest and involvement in science education.

Undergraduate Curriculum

The four-year physics programs are the Bachelor of Arts in physics, Bachelor of Science in physics, and the Bachelor of Science in physics plus. The Bachelor of Science programs are intended for students who will pursue a career or a graduate degree in the field, whereas the Bachelor of Arts program is primarily geared toward those who are interested in pursuing physics as a second major. The department also offers a Bachelor of Science degree in Astronomy and Astrophysics.

Bachelor of Science Major Program

Students in the Bachelor of Science in Physics major program are required to complete the following courses:

- PHYS 1210 or 1310, 1220 or 1320, 2310, 2320, 3640, 3650, 4210, 4310, 4410, 4420, 4510, and 4840;
- Students are required to take at least 3 hours of electives from any PHYS 4000- or 5000-level course
- MATH 2200, 2205, 2210, 2250, 2310, 4230, and 4440
- COSC 1010 and CHEM 1020

Bachelor of Arts Major Program

Students in the Bachelor of Arts in physics major program are required to complete the following courses:

- PHYS 1210 or 1310, 1220 or 1320, 2310, 2320, 3650, 4210, 4310, 4410, 4510
- Students are required to take at least 3 hours of electives from any PHYS 4000- or 5000-level course.
- MATH 2200, 2205, 2210, 2310
- COSC 1010 and CHEM 1020

Physics Plus Curriculum

Students preparing for strictly technological careers and hence want heavily technological undergraduate educations, may select the physics plus curriculum. This program enables students to concentrate in physics, mathematics and an elected technical area with some sacrifice in the breadth of general education.

Students in the Physics Plus program are required to complete the following courses:

- PHYS 1210 or 1310, 1220 or 1320, 2310, 2320, 3650, 4210, 4310, 4410, 4510, 4840, 4860
- MATH 2200, 2205, 2210, 2250, and 2310
- PHYS 4830 or both MATH 4230 and 4440
- COSC 1010 and CHEM 1020
- A coherent program of 27 credits in a technical area approved by the department head

Examples of an elected technical area could be an area involving additional physics and mathematics; physics, mathematics, and astronomy; engineering; biological sciences; chemistry; computer science; mathematics; geophysics; atmospheric science; economics; business; education or technical writing. Further details are available from the department's web site.

Minor Program

- Complete PHYS 1210 or 1310
- Complete PHYS 1220 or 1320
- PHYS 2310 and 2320
- At least two of the following: PHYS 4210, 4310, 4410, 4510

Astronomy Major Program

Students in the Bachelor of Science in Astronomy major program are required to complete the following courses:

- ASTR 2310, 2320, 4610 PHYS 1210 or 1310, 1220 or 1320, 2310, 2320, 3640, 3650, 4210, 4310, 4410, 4420, 4510, and 4840
- MATH 2200, 2205, 2210, 2250, and 2310
- COSC 1010

Astronomy Minor Program

- Complete PHYS 1210 or 1310
- Complete PHYS 1220 or 1320
- PHYS 2310 and 2320
- ASTR 2310 and 2320

Graduate Study

The Department of Physics and Astronomy offers the degrees of master of science in physics, master of science in teaching, and doctor of philosophy. Advanced degrees in physics may be based on experimental or theoretical research in physics or astrophysics.

Please refer to the departmental homepage at http://www.uwyo.edu/physics/ for the programmatic updates, or contact the department directly.

Program Specific Admission Requirements

Applicants for graduate study in physics or astrophysics should have an undergraduate preparation in physics and mathematics equivalent to that specified for a physics major. They must submit their scores for the verbal aptitude, the quantitative aptitude, analytical aptitude, and the advanced physics portion of the GRE.

Program Specific Graduate Assistantships

The Physics and Astronomy Department commits to providing first- and second-year students with teaching assistantships for the nine-month academic year. More advanced students are generally supported on federal grants or fellowships. Both teaching and research assistantships carry a full tuition waiver and insurance. Summer assistantships are often available to students making satisfactory progress. Refer to http://www.uwyo.edu/physics/ for current amounts.

Program Specific Degree Requirements

Master of Science in Physics
Plan A (thesis)

26 hours of graduate coursework, 20 of which must be in PHYS/ASTR at the 5000-level
4 hours of PHYS 5960

Plan B (non-thesis)

30 hours of graduate coursework, 24 of which must be in PHYS/ASTR at the 5000-level

Thesis planning, development, and production guided by the committee chair and graduate committee.

Master of Science in Teaching
Plan A (thesis)

18 hours from PHYS/ASTR at the 5000-level
12 hours from PSYC or the College of Education at the 4000- or 5000-level

Thesis planning, development, and production guided by the committee chair and graduate committee.

The Master of Science in Physics with emphasis in teaching is designed for graduate students preparing to teach in secondary schools or in community colleges. It will include a small, carefully designed component in psychology and education, and includes a supervised teaching experience. This program will require a thesis project based on experience in the classroom.

Doctoral Program

42 hours of graduate coursework

30 hours of PHYS 5980 or 5860. Dissertation planning, development, and production guided by the committee chair and graduate committee.

During the first two years, students normally take physics and astronomy courses while working with faculty members on one or more research projects. Students participate in weekly research seminars and journal clubs to learn about a broad range of current research. By the third year, Ph.D. students begin research work in the area of their dissertation.

Course work consists of several required courses plus a number of elective courses. Astronomy track students will take the required astronomy courses plus electives. Physics track students will take the required physics courses plus electives.

Physics required courses:
PHYS 5310 Quantum Theory I
PHYS 5410 Electromagnetic Theory I
PHYS 5510 Statistical Mechanics I
PHYS 5720 Advanced Solid State
PHYS 5750 Optical Properties of Solids
PHYS 5730 Condensed Matter Magnetism
PHYS 5740 Transport Properties of Solids

Physics elective courses:
PHYS 5110 & 5120 Methods of Theoretical Physics I & II
PHYS 5210 & 5120 Classical Mechanics I & II
PHYS 5320 Quantum Theory II
PHYS 5550 Advanced Statistical Mechanics
PHYS 5770 Nanotechnology: Nanophysics & Nanosystems
PHYS 5780 Modern Computational Methods in Solids
PHYS 5820 Plasmas Physics
PHYS 5830 Physics of Solar Cells
PHYS 5840 Experimental Methods and Low Temperature

Astronomy required courses:
ASTR 5150 Astronomical Techniques
ASTR 5420 Stellar Structure and Evolution
ASTR 5460 Cosmology
ASTR 5470 Interstellar Medium and Diffuse Matter
ASTR 5465 Galaxies

Two of the following physics courses must be taken:
PHYS 5310 Quantum Theory I
PHYS 5410 Electromagnetic Theory I
PHYS 5510 Statistical Mechanics I

Elective courses:
ASTR 5160 Data Mining in Large Astronomical Surveys
ASTR 5430 Radiative Processes & Stellar Atmospheres
ASTR 5440 Stars and Milky Way
ASTR 5480 Planetary Astronomy
ASTR 5490 Planets and Their Stars
ASTR 5870 Special Topics in Astrophysics

Ph.D. candidates demonstrate their competency in basic undergraduate physics and in required graduate courses through a written examination. After passing the written exam, students will take an oral preliminary exam based on a research project they have completed during the first two years. At the completion of the Ph.D. dissertation, a candidate makes a public presentation of his or her work and the committee conducts a final examination to award the degree.

Astronomy (ASTR)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Descriptive Astronomy. 3. Covers essential features of the solar system, stellar astronomy and time measurement. Students who have taken ASTR 2310 may not earn credit in ASTR 1000, and not more than 4 credit hours may be earned by taking both ASTR 1000 and 1050.

1050. Survey of Astronomy. 4. [SE◀▶PN] Consists of 3 lecture periods and a two-hour laboratory in observational and laboratory astronomy. Observing sessions are scheduled after dark and held when weather permits. Designed primarily for non-science majors. Students who have taken ASTR 2310 may not earn credit in ASTR 1050. *Prerequisite:* MATH 1000 or passing mathematics proficiency exam at Level 3.

1070. The Earth: Its Physical Environment. 4. [SE◀▶PN] Discusses selected topics from geology, astronomy and meteorology illustrating fundamental concepts, processes, products and the interrelationships among them. Emphasizes nature of science and relationship between selected topics and society. Cross listed with GEOL 1070. *Prerequisites:* Math Level 3 or equivalent courses; consent of instructor; enrollment reserved for elementary education majors; EDCI 2000 must be selected concurrently.

2310. General Astronomy I. 4. Covers the history of astronomy, orbital mechanics, solar system (the Sun, planetary interiors, atmospheres, moons, comets, meteors); interaction of radiation and matter (physical processes in gas, black body radiation) astronomical instrumentation and detectors. Laboratory includes exercises in observational astronomy. Observing sessions are scheduled after dark and held when weather permits. *Prerequisites:* PHYS 1210 or 1310, MATH 2200. (Normally offered spring semester)

2320. General Astronomy II. 4. Covers the properties of stars, stellar atmospheres and stellar evolution, interstellar matter, galaxies and cosmology including models of the universe, the Big Bang, and dark energy. Laboratory includes exercises in observational astronomy. Observing sessions are scheduled after dark and held when weather permits. *Prerequisites:* PHYS 1210 or 1310, MATH 2200.

4000. Astronomy for Teachers. 1-5 (Max. 5). Specifically designed for elementary school teachers. Presents basic concepts (time, seasons, light and its properties); planetary systems of the sun; the sun and stars; the Milky Way and galaxies; and cosmology and relativity. Emphasizes presenting these concepts to elementary school children. Half the class is devoted to laboratory and workshop activities to develop techniques for presenting these concepts through visual aides, demonstrations and films. Students may receive a maximum of 5 credits in a combination of ASTR 4000 and 4100. *Prerequisites:* 6 hours of physical or biological science, junior standing in education. (Offered summer session)

4100. Astrophysics for Secondary Teachers. 1-3 (Max. 3). Discusses modern physics, emphasizing obtaining and analyzing real data. Adaptable to junior and senior high school science classrooms. Special projects include analysis of planetary positions and images; direct observations of the sun; predictions of eclipses and tides; analyses of basic astronomical data of stars, star clusters, galaxies and clusters of galaxies; and cosmological modeling. Students may receive a maximum of 5 credits in a combination of ASTR 4000 and 4100. *Prerequisite:* junior standing in secondary science education. (Offered summer session)

4610. Introduction to Astrophysics. 3. Includes astrophysical sources of radiation, radiation transport, nonequilibrium processes, stellar atmospheres, stellar interiors and the interstellar medium. *Prerequisites:* ASTR 2310, PHYS 2310 and concurrent registration in PHYS 4210 and 4410. (Normally offered fall semester)

4620. Modern Research in Astrophysics. 3. Taught jointly by astrophysics faculty and others. Includes several topics of current research in astrophysics. *Prerequisite:* ASTR 4610.

4860. Problems in _____. 1-4 (Max. 12). Independent, in-depth study of selected problems in astronomy and astrophysics. Entirely laboratory-oriented investigations of astronomical objects. *Prerequisites:* ASTR 2310 and PHYS 2310.

4870. Special Topics in _____. 1-4 (Max. 12). Presents various subjects not normally available in regularly advertised curriculum. *Prerequisite:* ASTR 2310.

5150. Astronomical Techniques. 4. Discusses selected topics in observational astronomy such as applications of the Fourier transform, design of optical instruments, properties of various detectors of electromagnetic radiation, sources of uncertainty in astronomical data, reduction techniques for these data, and techniques of image processing. *Prerequisite:* graduate standing in astrophysics.

5160. Data Mining in Large Astronomical Surveys. 4. Aimed at an understanding of how to manipulate and analyze catalog-level data from large astronomical surveys. Students will address realistic problems in data mining large astronomical surveys using one or more programming languages. *Prerequisites*: graduate standing.

5420. Stellar Evolution and Structure. 4. The life cycle of stars forms the basis for this course, including formation and early evolution, hydrostatic structure, and late stages of evolution. In addition, energy generation and transport are presented. *Prerequisite:* graduate standing in astrophysics.

5430. Radiative Processes and Stellar Atmospheres. 4. Presents detailed descriptions of radiative transfer mechanisms, both in thermal and nonthermal sources, and the relevant techniques of observation. LTE and non-LTE models are discussed. *Prerequisite:* ASTR 5420.

5440. Stars and the Milky Way. 4. Spatial distribution of stars within our galaxy; photometric/ spectroscopic/ astronomic/ kinematic properties of major classes of stars; structure and dynamics of the observational determination of structure; stellar populations; and the chemical and structural evolution. *Prerequisite:* graduate standing in astrophysics.

5460. Galactic Structure and Evolution: Cosmology. 4. Presents material describing current cosmological models and their application to areas of extragalactic astronomy. Topics include cosmic dynamics, introduction to relativistic models, measuring parameters, dark matter, dark energy, the cosmic microwave background radiation, big bang nucleosynthesis. *Prerequisite:* Graduate standing in astrophysics.

5465. Galaxies. 4. Presents material necessary for study of the Milky Way, galaxies, active galaxies, and the large-scale structure of the universe. Topics include stellar populations, kinematics and dynamics in the Milky Way and other galaxies, galaxy classification and properties, and active nuclei and quasars. *Prerequisite:* graduate standing in astrophysics.

5470. Interstellar Medium and Diffuse Matter. 4. The material between stars is the primary topic, including the chemistry, energetics, and evolution of interstellar matter. The formation of molecules and dust grains, and their composition, are also discussed. Emission processes characteristic of the ISM are described. *Prerequisite:* ASTR 5460.

5480. Planetary Astronomy. 4. Studies to include, but not limited to, area in solar nebula evolution, planetary formation and evolution, planetary surfaces, and planetary atmospheres. *Prerequisite:* graduate standing in astrophysics.

5490. Planets and Their Stars. 4. Reviews recent and current research in planets and exoplanets. Topics may include planet formation, known properties of exoplanets, comparisons to Solar System planets, properties of planet-hosting stars, and evolution of planetary systems. *Prerequisites*: graduate standing or permission of the instructor.

5630. General Relativity and Cosmology I. 3. Presents a detailed study of Einstein's theory of the gravitational field with emphasis on the geometric structure of space-time, and selected topics in general relativity. *Prerequisite:* PHYS 5320, 5420.

5860. Independent Study. 1-4 (Max. 8). Investigations on the level of original graduate research in astrophysics. Research projects emphasized are primarily in infrared astrophysics. *Prerequisite:* ASTR 4860 or equivalent.

5870. Special Topics in Astronomy. 1-4 (Max. 20). *Prerequisite:* graduate standing

5960. Thesis Research. 1-12 (Max. 12). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisites:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 12). Graduate level course designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate degree program.

Physics (PHYS)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1050. Concepts of Physics. 4. [SP◀▶PN] Introduces the physical world. For students whose background in math and science is minimal; recommended for students in paramedical sciences and medical technology. Three lecture hours per week are supplemented by two hours per week of laboratory work. *Prerequisite:* MATH 1000 or passing the Mathematics Placement Examination at Level 3. (Normally offered both semesters)

1090. The Fundamentals of the Physical Universe. 4. [SP◀▶PN] Applies fundamental principles of chemistry and physics to real life situations. Primarily for elementary education majors. *Prerequisites:* Math Level 3 or MATH 1000 and major in elementary education. (Normally offered fall, spring and summer)

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1110. General Physics I. 4. [SP◀▶PN] First course of two-semester sequence. Introduces elementary college physics without calculus. Primarily for premedical, predental, preoptometry, prephysical therapy and other students requiring insight into workings of the physical world. Includes classical mechanics, gravitation and heat. Laboratory sessions will illustrate principles studied. Students receiving credit for PHYS 1110 cannot receive credit for PHYS 1050, 1210 or 1310. *Prerequisite:* MATH 1450, 1405 or equivalent. (Normally offered fall and summer semester)

1120. General Physics II. 4. [SP◀▶PN] Follows PHYS 1110 and completes introduction to physics without calculus. Includes electricity, magnetism, optics and modern physics. Laboratory sessions illustrate principles studied. Students receiving credit in PHYS 1120 cannot receive credit in PHYS 1050, 1220 or 1320. *Prerequisite:* PHYS 1110. (Normally offered spring and summer semester)

1210. Engineering Physics I. 4. [SP◀▶PN] First course of a two-semester sequence. Provides introduction to physics with calculus for engineering students. Includes classical mechanics, gravitation and mechanical waves. Laboratory sessions illustrate principles studied. Students receiving credit for PHYS 1210 cannot receive credit for PHYS 1050, 1110, or 1310. *Prerequisites:* a grade of C or higher in MATH 2200 and concurrent enrollment in MATH 2205.

1220. Engineering Physics II. 4. [SP◀▶PN] Follows PHYS 1210 and continues introduction to physics with calculus for engineering students. Includes electricity, magnetism and heat. Laboratories illustrate principles studied. Students receiving credit for PHYS 1220 cannot receive credit for PHYS 1050, 1120, or 1320. *Prerequisites:* grades of C or higher in MATH 2200, 2205 and concurrent enrollment in MATH 2210.

1310. College Physics I. 4. [SP◀▶(none)] First course of two semester sequence. Provides thorough introduction to physics with calculus. Primarily for majors in physics, astronomy, and other areas in science, mathematics and technology requiring the highest levels of sophistication. Includes classical mechanics, gravitation and mechanical waves. Laboratory sessions illustrate principles studied and meaning of physical measurement. Students receiving credit for PHYS 1310 cannot receive credit for PHYS 1050, 1110, or 1210. *Prerequisites:* MATH 2200 and concurrent enrollment in MATH 2205.

1320. College Physics II. 4. [SP◀▶(none)] Follows PHYS 1310 and continues introduction to physics with calculus. Includes electricity, magnetism and thermodynamics. Laboratory sessions illustrate principles studied and meaning of physical measurement. Students receiving credit for PHYS 1320 cannot receive credit for PHYS 1050, 1120 or 1220. *Prerequisites:* MATH 2200, 2205 and concurrent enrollment in MATH 2210.

2150. The Physical Principles of Contemporary Social Problems. 3. Introduces technical basis of several important social problems including pollution, transportation, radiation, nuclear weapons and medical technology. *Prerequisite:* PHYS 1110 or consent of the instructor.

2250. Themodynamic Systems in Energy Science. 4. Introduces the principles of thermodynamics and their application to energy science. Intended for students majoring in Energry Resource Science. *Prerequisites*: PHYS 1210, grade of C or higher in MATH 2205.

2310. Physics III: Waves and Optics. 4. Third-semester course primarily for majors in physics, astronomy, engineering, mathematics, and other sciences. Includes Gaussian Optics and matrix calculations, wave equations, interference, superposition principle, elementary Fourier Analysis, Fraunhofer and Fresnel Diffraction, application to optical instruments. *Prerequisite:* PHYS 1220 or 1320 or equivalent.

2320. Physics IV: Modern Physics. 3. Fourth semester course primarily for majors in physics, astronomy, engineering, mathematics, and other physical sciences. Topics include introductory quantum mechanics, nuclear and particle physics, lasers, Planck's Blackbody Radiation, photoelectric effect, electron diffraction, wave-particle duality, de-Broglie Wavelength, Bohr Atom, Heisenberg Uncertainty Principle, Schrodinger Equation, and Einstein's Special Theory of Relativity. *Prerequisite:* PHYS 1220 or 1320 or equivalent.

2330. Modern Physics Laboratory. 1. Provides experimental background needed by physics majors taking lecture course PHYS 2310. Students perform experiments crucial in birth of modern atomic and molecular physics, nuclear physics and solid-state physics. *Prerequisites:* PHYS 1320, MATH 2210, PHYS 2310 concurrently and physics or astronomy major.

2870. Special Topics in ____. 1-4 (Max. 4). Presents various subjects not available in regularly scheduled courses. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

3100. Application of Physics in the Modern World. 4. Presents a broad overview of physics concepts and their application to selected topics of current interest such as atmospheric pollution, nuclear radiation and medicine, and nuclear weapons. *Prerequisite:* 12 hours university-level biological, physical and/or earth sciences.

3640. Modern Electronics and Experimental Techniques. 4. Introduced to analog and digital circuits/devices and computer interfacing with laboratory equipment and experiments. Includes computer programming, the analysis of experimental data, and report writing. Apply the skills developed in this class to interface with and control representative instrumentation used in experimental physics laboratories. Prerequisites: PHYS 2320.

3650. Advanced Lab in Modern Physics and Electronics. 4. [(none)◀▶COM3] Presents fundamentals of modern optics, modern and quantum physics, E&M/electronics, and thermodynamics in a project oriented interactive undergraduate laboratory with a focus on professional grade lab report writing that qualifies as WB USP. Students learn professional data handling, error theory, and data analysis. *Prerequisites:* WA and PHYS 2310 or 2320.

4000. Applied Laser Science. 3. Covers basic operational principles of lasers and their many applications in science and industry. *Prerequisites:* PHYS 2310 or equivalent; PHYS 4310. (Offered based on sufficient demand and resources)

4210. Classical Mechanics I. 3. First semester of a two-course sequence. Presents classical mechanics at intermediate level. Begins with elementary Newtonian mechanics and builds step by step into analytic mechanics. Includes simple harmonic motion of particles in one, two or three dimensions, gravitation; introduction to rigid-body motion; and introduction

to Lagrangian and Hamiltonian Mechanics. *Prerequisites:* PHYS 2310 or equivalent, MATH 2210 or equivalent. (Normally offered spring semester)

4220. Classical Mechanics II. 4. Follows PHYS 4210. Presents classical mechanics at an intermediate to advanced level. Includes detailed treatment of Lagrangian and Hamiltonian Mechanics, rigid-body motion, small oscillations and introduction to relativity. Dual listed with PHYS 5220. *Prerequisite:* PHYS 4210.

4310. Quantum Mechanics. 3. Studies fundamental concepts of quantum theory. *Prerequisite:* PHYS 4210. (Normally offered fall semester)

4340. Semiconductor Materials and Devices. 3. Physical properties of semiconductor materials and devices, including crystal lattices and energy bands, carrier generation, transport, and recombination. PN, metal-semiconductor, and heterojunction operation. Field Effect Transistors, including Metal Oxide Semiconductor (MOSFET), Junction (JFET), MEtal Semiconductor (MESFET), and High Electron Mobility (HEMT) transistors. Bipolar Junction (BJT) and Heterojunction (HBT) Transistor operation. Cross listed with EE 4340. *Prerequisite:* PHYS 1220 or 1320.

4350. Advanced Quantum Mechanics. 3. Covers advanced topics in quantum mechanics, including angular momentum, quantum states in three dimension, hydrogen atomic structure, electron spin, Pauli matrices, time-dependent and independent perturbation methods, Born approximation, formal scattering theory, etc.. *Prerequisites:* PHYS 4210, 4310, 4420 and MATH 4440. (Normally offered spring semester)

4410. Electricity and Magnetism I. 3. First semester of a two-course sequence. Presents electricity and magnetism on intermediate level, emphasizing fields. Begins with review of vector algebra and calculus and proceeds to discussion of electrostatics, potential theory and steady currents. *Prerequisites:* PHYS 2310 or equivalent and MATH 2210. (Normally offered fall semester)

4420. Electricity and Magnetism II. 3. Follows PHYS 4410 and continues intermediate discussion of electricity and magnetism. Covers magnetstatics, magnetoquasistatics, alternating currents, electromagnetic waves, transmission lines and antennae. *Prerequisite:* PHYS 4410. (Normally offered spring semester)

4510. Thermodynamics and Statistical Mechanics. 3. Presents fundamental principles of thermodynamics, emphasizing mathematical development. *Prerequisites:* PHYS 4310 or equivalent and MATH 2210.

4690. Science: Fact, Fiction and Future. 3. [CH,WC◀▶(none)] Examines a number of concepts related to the scientific method. How science "works" is investigated within six topic areas: What is Science?, The Nature of the Scientific Method, Science Fact?, Science Fiction, Science of the Future and Case Studies of the Application of the Scientific Method. *Prerequisites:* completion of at least one lower-division science course and successful completion of a WB course or permission of instructor.

4710. Solid-State Physics. 3. Surveys theory and application of solid state physics using quantum theory. Emphasizes relation between theory and experiment. Discusses areas of present research activity. *Prerequisites:* PHYS 4310 and 4510.

4830. Mathematical and Computational Physics I. 3. First semester of a two-semester sequence. Provides a comprehensive overview of mathematical physics and numerous analytical mathematical techniques applied to physics problems. Topics include: numerical computations and visualizations, differential and integral vector analysis, linear algebra, infinite series, complex variables, partial differential equations, ordinary differential equations, integral transforms and equations, and calculus of variations. *Prerequisites:* PHYS 2310 or PHYS 2320 and MATH 2210.

4840. Mathematical and Computational Physics II. 3. Second semester of a two-semester course. Provides a comprehensive overview of computational physics and provides numerous numerical techniques applied to physics problems. Topics include: numerical computations and visualizations, numerical solutions of ordinary differential equations, linear systems, curve fitting, discrete Fourier transforms, partial differential equations, integration, and Monte Carlo simulations of general stochastic systems. *Prerequisite:* PHYS 4830.

4860. Independent Study in _____. 1-6 (Max. 12). Encompasses independent study to advanced problems which may involve either library and/or laboratory research. *Prerequisite:* PHYS 2310. (Offered based on sufficient demand and resources)

4870. Special Topics in _____. 1-6 (Max. 12). Presents various subjects not available in regularly scheduled courses. *Prerequisites:* PHYS 2310 and consent of instructor. (Offered based on sufficient demand and resources)

4970. Senior Research/Internship. 1-3 (Max. 4). Requires a practical research experience or internship from the student up to 4 credits under the advisement of a faculty member. This requirement for graduation should lead to a professional publication or document written by the student. The credit requirements may be spread over several semesters.

5110. Methods of Theoretical Physics I. 4. First semester of a two-semester sequence which introduces mathematical techniques used in graduate physics courses. The content may be adjusted to meet the needs of the students. This course is required for M.S. and Ph.D. students. *Prerequisite:* PHYS 4310, PHYS 4410, MATH 4440 or equivalent.

5120. Methods of Theoretical Physics II. 4. Designed to follow PHYS 5110 and will introduce further mathematical techniques used in graduate physics courses. Required for M.S. and Ph.D. students. *Prerequisite:* PHYS 5110.

5210. Classical Mechanics. 4. Advanced classical dynamics beginning with classical Lagrangian and Hamiltonian formalism, covering relativistic Lagrangian formulation, canonical transformations, Hamilton-Jacobi theory, and small oscillations. A required course for Ph.D. students. *Prerequisite:* PHYS 4220, MATH 4440 or equivalent, and concurrent registration in PHYS 5110.

5220. Classical Mechanics II. 4. Presents classical mechanics at an intermediate to advanced level and is designed to follow PHYS 4210. Includes a detailed treatment of Langrangian and Hamiltonian mechanics. Rigid-body motion, small oscillations, and an introduction to relativity. Dual listed with PHYS 4220. *Prerequisite:* PHYS 4210.

5230. Advanced Classical Mechanics. 4. The developments of the 1970s and 1980s, including a major expansion in our understanding of chaotic motion in many areas of science, will be brought together in a coherent framework. A strong computational component will be associated with many of the problems studied. *Prerequisite:* PHYS 4210 and 5220 or equivalent.

5310. Quantum Theory I. 4. First semester of a two-semester sequence which presents quantum mechanics on a professional level. Includes topics such as infinite dimensional vector spaces, postulates of quantum mechanics, exactly soluble bound systems, and angular momentum. Required for M.S. and Ph.D. students. *Prerequisite:* PHYS 4220, PHYS 4310, MATH 4440 or equivalent, concurrent registration in PHYS 5110.

5320. Quantum Theory II. 4. Designed to follow PHYS 5310 and will present topics such as scattering by a potential, addition of angular momentum, stationary and time dependent perturbation, identical particles. It is required for M.S. and Ph.D. students. *Prerequisite:* PHYS 5310 and concurrent registration in PHYS 5120.

5410. Electromagnetic Theory I. 4. The first semester of a two-semester sequence which presents electromagnetic theory on a professional level. The classical analytic solutions of the equations of motion are discussed and expressed as quadratures over the Green functions with attention to effect of boundary conditions. It presents topics such as algebra and calculus of vectors in configuration space, electrostatics, potential theory, and steady currents. Required for M.S. and Ph.D. students. *Prerequisite:* PHYS 4420, PHYS 5110, MATH 4440 or equivalent.

5420. Electromagnetic Theory II. 4. Designed to follow PHYS 5410 and will present topics such as magnetostatics, magnetoquasistatics, time dependent electromagnetic theory, physical optics with a vector field, and radiation from antennae. Required for Ph.D. students. *Prerequisite:* PHYS 5410.

5510. Statistical Mechanics. 4. An introduction to statistical mechanics and the many-body problem, including quantum statistics. Required for Ph.D. students. *Prerequisite:* PHYS 5210, 5320, 5410.

5550. Advanced Statistical Mechanics. 3. A study of modern calculational techniques in the many-body theory of liquids and solids, and an introduction to nonequilibrium processes. *Prerequisite:* PHYS 5520.

5610. Atomic and Molecular Spectroscopy. 3. A quantum mechanical treatment of atomic and molecular structure, transition probabilities, selection rules, and the Zeeman and Stark effects. *Prerequisite:* PHYS 5320.

5720. Advanced Solid State Physics. 3. A course in modern topics and theoretical technique relevant to condensed matter. *Prerequisite:* PHYS 4710 or equivalent, PHYS 5510.

5730. Condensed Matter Magnetism. 4. Designed to give graduate students instruction in the fundamental principles of magnetism, the important properties of magnetic materials and their applications. Required for the physics track of the PhD program. *Prerequisites:* PHYS 4310, 4410, 4510 or equivalent.

5740. Transport Properties of Solids. 4. Instruction in the basic quantum theories of electron and phonon transport, interactions among the carriers and with impurities, and important transport phenomena in various systems. Required for the physics track students in the PhD program. *Prerequisites:* PHYS 4310, 4410, 4510 or equivalent.

5750. Optical Properties of Solids. 4. Covers advanced topics of optical properties of solids, including free carrier contribution to their optical properties, interband transitions, absorption of light in solids, luminescence and photoconductivity, electron spectroscopy and surface science, light emitting diodes, etc. *Prerequisites:* PHYS 4310, 4410, 4510 or equivalent.

5770. Nanotechnology: Nanophysics and Nanosystems. 4. Introduction to nanoscale fabrication techniques including lithography, pattern transfer, thin film deposition etc. Electronic transport in mesoscopic systems. Electrical properties of nanoscale devices including self-assembled monolayers, carbon nanotubes, and semiconductor nanowires. Noise properties of nanostructures. *Prerequisites:* PHYS 4310 or equivalent.

5780. Modern Computational Methods in Solids. 4. Introduces students to a series of physical problems in condensed matter. This course is an extension of introductory condensed matter, with extra degrees of complexity that necessitate numerical techniques and advanced computational approaches to obtain solutions. *Prerequisites*: graduate standing.

5810. Nuclear and Elementary Particle Physics. 3. An advanced course in nuclear and elementary particle interactions, with emphasis on current development. *Prerequisite:* PHYS 5350.

5820. Plasma Physics. 4. Introduction to plasma physics is exhibited through the analysis of numerous ionized environments (fusion systems, stellar surfaces, and the ionosphere). Fluid approximations (MHD), as well as a kinetic theory formulation (including the Vlasov equation) of plasma physics will be employed. Damping, instabilities, and nonlinear plasmas will be explored. *Prerequisites:* PHYS 4210 and PHYS 4420.

5830. Physics of Solar Cells. 4. Covers problems of energy economy, photon physics, physics of semiconductors, conversion of chemical energy into electrical energy, basic structure of solar cells, quantum-dot-semiconductor solar cells, limitations of energy conversions in solar cells, and strategies for higher efficiency. *Prerequisite:* PHYS 5720.

5840. Experimental Methods and Low Temperature. 4. Introduction to experimental methods in condensed matter physics and phenomena at low temperatures. The fields of solid properties at low temperatures, the generation and measurement of low temperatures, the generation of high magnetic fields in laboratory magnets, and basic vacuum technology are covered. *Prerequisite:* graduate standing.

5860. Independent Study. 1-4 (Max. 8). Designed to provide opportunities for self-study and special projects under supervision of individual professors.

5870. Special Topics In Physics. 1-4 (Max. 20). Intended to accommodate various subjects not offered as regular courses. *Prerequisite:* graduate standing.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Political Science

136 Arts and Sciences Building, 766-6484
FAX: (307) 766-6771
Web site: www.uwyo.edu/pols
Department Head: Teena Gabrielson

Professors:

R. MCGREGGOR CAWLEY, B.A. Kearney State College 1971; M.A. Colorado State University 1974; Ph.D. 1981; Professor of Political Science 1997, 1987.

JEAN A. GARRISON, B.A. University of Wyoming 1990; M.A. University of South Carolina 1992; Ph.D. 1996; Professor of Political Science, 2010, 2001.

JAMES D. KING, B.A. Michigan State University 1974; M.A. Western Michigan University 1977; Ph.D. University of Missouri-Columbia 1983; Professor of Political Science 1999, 1992.

MARGARET M. MURDOCK, B.A. Creighton University 1970; M.A. Tufts University 1975; Ph.D. 1978; Professor of Political Science 1993, 1975.

BRENT L. PICKETT, B.A. Wichita State University 1989; M.A. University of Colorado at Boulder 1991; Ph.D. 1995; Professor of Political Science - Casper 2010, 2005.

ROBERT A. SCHUHMANN, B.S. Appalachian State University 1987; M.P.A. 1989; Ph.D. Virginia Polytechnic Institute and State University 1995; Professor of Political Science 2013, 2002, 1995.

Associate Professors:

STEPHANIE B. ANDERSON, B.S.F.S. Georgetown University 1989; M.Sc. The London School of Economics and Political Science 1990; Ph.D. University of Cambridge 1996; Associate Professor of Political Science 2009, 2005.

TEENA J. GABRIELSON, B.A. Macalester College 1992; M.A. University of California - Davis 1997; Ph.D. 2002; Associate Professor of Political Science 2012.

ANDREW D. GARNER, B.S. Kennesaw State University 2002; Ph.D. University of Mississippi 2007; Associate Professor of Political Science 2014, 2008.

TRACY A. SKOPEK, B.A. University of Texas 1992; M.P.A. Texas Tech University 1995; Ph.D. 2000; Associate Professor of Political Science 2009, 2003.

Assistant Professors:

NEVIN T. AIKEN, B.A. University of Western Ontario 2003; M.A. 2004; Ph.D. University of British Columbia 2010; Assistant Professor of Political Science/Global and Area Studies 2010, 2012.

JUSTIN T. PICCORELLI, B.A. Loyola Marymount University 2004; M.P.A. Cleveland State University 2009; Ph.D. 2014; Assistant Professor of Political Science 2015.

Professors Emeriti:

Winberg Chai, Larry Hubbell, Stephen C. Ropp, Oliver Walter

Associate Professor Emeritus:

Alan E. Schenker

Political Science is the study of how societies govern themselves and interact with one another. Courses of instruction in the Department of Political Science are offered in the following subfields: American politics, comparative government, international relations, political philosophy, public law, and public administration. Areas of focus include analysis of government structures and processes, citizens' influence on government, policy content, philosophical concepts and traditions, political systems of other nations, and resolution of conflicts between nations. Our goals are to help students better understand political processes, and to develop the critical thinking and analytic skills necessary for: effective participation in the political process, successful careers in the public and private sectors, and further study in law, political science, and public administration.

In 1925, the state legislature passed a law requiring the study of the U.S. and Wyoming Constitutions by all University of Wyoming students. Political Science 1000 satisfies this requirement, but the requirement can also be satisfied by special examination given periodically by the Department of Political Science.

Learning Outcomes

We continuously and actively assess the Political Science undergraduate curriculum to ensure that the following learning outcomes are being met for each of our graduates:

1. Acquire a knowledge and understanding of the values, beliefs, and institutions that constitute governing processes;
2. Acquire an understanding of the disctinctions among the major subfields of the discipline including: American politics and law, internationsl relations, comparative politics, and political theory;
3. Develop a knowledge and understanding of citizens' roles withing governing processes;
4. Acquire a knowledge of the theories and analytic skills necessary to evaluate conflicting arguments, assemble and present appropriate evidence, and make reasoned conclusions from the evidence available;
5. Communicate effectively, both orally and in written form.

Undergraduate Major

In addition to the university and college requirements listed elsewhere in this bulletin, a major in political science requires 33 hours. Students are required to complete the following four introductory courses: POLS 1000; POLS 1200 or POLS 1250; POLS 2310; and POLS 2460 or POLS 3600. Students are also required to take at least one seminar in political science (and its prerequisites); 8 hours of a single foreign language or equivalent credit by examination as determined by the Department of Modern and Classical Languages; STAT 2070; and a minimum of 9 hours of upper division credit in political science. A maximum of 6 hours of internship credit may be applied toward the 33 hours required for the political science major. Only those political science courses in which a grade of C or better has been earned may be used to satisfy departmental requirements.

Most university studies courses and lower division political science courses should be completed prior to the junior year. Additional information about the political science major may be obtained from the Department of Political Science office, 136 A&S Building.

Undergraduate Minors

The department offers optional undergraduate minors in American politics, international relations and comparative government, public law, and political theory. Eighteen hours are required in each minor, including 9 hours of upper-division courses and one seminar. A maximum of 3 hours of internship credit may be applied towards the 18 hours required for the political science minor. At least 12 credit hours in a minor must be from courses *not* being counted toward the student's major. Information relating to specific courses fulfilling minor requirements may be obtained from the Department of Political Science office, 136 A&S Building.

Teacher Education

The teacher certification program in Secondary Social Studies Education, with a concurrent major in Political Science is available through the College of Education. A minimum 2.50 UW grade point average and a 2.50 grade point average in Political Science and Social Studies content are required to change majors. Further information may be found under the College of Education section in this *Catalog*.

Major or Minor in Environment and Natural Resources

The Haub School of Environment and Natural Resources (ENR) offers a second major or minor for students interested in interdisciplinary training in the policy, legal, economic, scientific, ethical, and other perspectives associated with ENR challenges. The Haub School uses problem-based learning and interdisciplinary team teaching. Students of all disciplines are welcome to take classes in ENR or add ENR to their degree program. Contact the Haub School at (307) 766-5080, senr@uwo.edu, or www.uwyo.edu/enr.

Graduate Study

The master of arts and the master of public administration are offered by the Department of Political Science. The department's mission is to give graduate students an understanding of the theories and methods necessary for success in (1) research or in post-baccalaureate study in any of the subfields in political science, (2) high school teaching in social science, or (3) careers in policy analysis or public administration in local, state, or federal government, or international governmental or non-governmental organizations. Our graduate students have progressed to senior positions in government, the U.S. Foreign Service, and international organizations; they have pursued rewarding careers in education and the private sector; and they have advanced to Ph.D. programs in political science and related fields.

Program Specific Admission Requirements

Master of Arts in Political Science

Admission is open to all students holding a bachelor's degree with at least a 3.0 GPA in political science or a cognate discipline such as international studies, criminal justice, history, sociology, or economics, including substantial undergraduate course work in political science and a minimum GRE score of 60th percentile in Verbal and 40th percentile in Quantitative. Applicants must submit a writing sample of at least 10 pages such as a paper prepared for an undergraduate class.

Master of Public Administration

Admission is open to all students holding a bachelor's degree in any major with at least a 3.0 GPA and a minimum GRE score of 60th percentile in Verbal and 40th percentile in Quantitative. Only POLS 5000 may be taken prior to full admission into the program with permission of the M.P.A. director.

Program Specific Degree Requirements

Master's Programs
Master of Arts in Political Science
Plan A (thesis)

At least 30 hours of graduate credit, to include:
- POLS 5510. Public Policy and Program Management.
- POLS 5680. Research Methods for Political Science.
- POLS 5684. Program Evaluation and Policy Analysis.
- POLS 5810. Seminar in Political Philosophy.
- At least 6 additional hours of coursework in political science.
- A maximum of 9 hours of coursework in disciplines other than political science.
- A minimum of 4 hours thesis research.

A master's thesis demonstrating independent research, written under the supervision of the major professor.

An oral examination conducted by the graduate committee covering all coursework and the thesis.

No more than 6 hours of grades lower than 3.0 may be counted toward the minimum number of hours required for the degree.

Students must maintain a graduate GPA of 3.0.

Plan B (non-thesis)

At least 30 hours of graduate credit, to include:
- POLS 5510. Public Policy and Program Management.
- POLS 5680. Research Methods for Political Science.
- POLS 5684. Program Evaluation and Policy Analysis.
- POLS 5810. Seminar in Political Philosophy.
- At least 6 additional hours of coursework in political science.
- A maximum of 12 hours of coursework in disciplines other than political science.

Plan B paper that reflects the quality but not scope of a master's thesis, written under the supervision of the major professor.

An oral examination conducted by the graduate committee covering all coursework and the Plan B paper.

No more than 6 hours of grades lower than 3.0 may be counted toward the minimum number of hours required for the degree.

Students must maintain a graduate GPA of 3.0.

Master of Public Administration
Plan B (non-thesis)

Thirty-nine hours of graduate credit, to include:
- 21 hours of core credit,
- 6 hours of option-core credit,
- 12 hours of approved elective credit.

In addition to graduate coursework, M.P.A. students must complete a series of papers constituting the Plan B project. It is the purpose of POLS 5690, Capstone in Public Management, to be a framework within which students initiate and substantially complete their Plan B projects.

Following the completion of all other requirements, the M.P.A. student is required to pass a comprehensive oral examination covering the information contained within his/her program of study as well as a defense of the Plan B projects. The oral examination is also conducted within the framework of the POLS 5690 Capstone course.

Significant administrative experience is required of all M.P.A. graduates. If the M.P.A. student has little or no administrative experience an internship is required and will be included as 3 hours of the required elective credits.

Students entering the M.P.A. Program are expected to possess basic computer literacy, and to have access to a computer for such purposes as communicating with professors via e-mail, receiving M.P.A. Program memos, conducting research on the Web, retrieving articles from course documents libraries, working on course projects, and for conducting interactive/electronic class discussion.

Students must maintain a graduate GPA of 3.0.

Students must complete the CAPP program in lieu of a program of study.

Master of Public Administration/Juris Doctor

See the M.P.A. Director and/or the College of Law for information.

Students must be accepted to both programs.

Political Science (POLS)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. American and Wyoming Government. 3. [V◀▶V] Introduction to the Constitutions and governmental processes of the U.S. and Wyoming. (Offered each semester)

1100. Wyoming Government. 1. [(none)◀▶V] Introduction to the Constitution and governmental process of Wyoming. Intended for students who have earned credit for American Government at an out-of-state college or by Advance Placement but have not fulfilled the Wyoming Constitution requirement of University Studies.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1111. Issues in Political Science. 1-3 (Max. 3). [I,L◀▶(none)] Introduces students to Political Science through a study of a contemporary issue or problem from the perspectives of the various subfields.

1200. Non-Western Political Cultures. 3. [CS,G◀▶(none)] Gives students appreciation of non-western political cultures and how these cultures have created different political institutions and practices. Non-Western nations of Asia, Africa, and the Middle East are used as case studies. Cross listed with INST 1200. (Offered each semester)

1250. Introduction to Comparative Government. 3. How do foreign states deal with the numerous challenges to their stability? Do institutions affect a state's approach to solving different problems? How do these different approaches affect policy? This course introduces students to different styles of governance and compare countries from around the world with reference to their political ideology. Cross listed with INST 1250.

2000. Current Issues in American Government. 3. [CS◀▶(none)] Examines current political topics in the U.S. Focuses on key public policy problems, policy-making process and the final policy choice. Students must keep abreast of political events on daily basis and apply basic concepts in American government to current affairs. *Prerequisite:* POLS 1000.

2070. Politics of State and Local Government. 3. Studies politics, organizations, structures and processes of American state and local governments. *Prerequisite:* POLS 1000.

2200. Politics of Europe and the European Union. 3. [(none)◀▶COM2] Examines formal and informal aspects of politics in European countries and the European Union.

2290. Governments and Politics of Latin America. 3. Studies chief cultural and historical factors influencing Latin American political process. Surveys major institutions and political patterns of the region.

2300. World Politics in the Post-Cold War Era. 3. [G◀▶(none)] Examines changes that have taken place since the end of the Cold War in perspectives of major world powers, global and regional power balances, patterns of conflict and cooperation and the structure of the world system. Focuses on what these changes portend for the future. Cross listed with INST 2300.

2310. Introduction to International Relations. 3. [G◀▶(none)] Analyzes the nature of international relations, emphasizing various methods of explaining and interpreting the international behavior of nation-states. Illustrates contemporary problems in world politics. Cross listed with INST 2310. (Normally offered once a year)

2330. Environmental Ethics. 3. Introduces students to ethical theory in environmental problem cases, and to philosophical issues in environmental philosophy. Ethical theories include natural law, utilitarianism, deontological and rights-based theories, relativism. Topics may include: conservation/preservation, resource management, pollution, overpopulation, factory farming, Leopold's land ethic, deep ecology, holism, eco-feminism. Cross listed with PHIL 2330.

2410. Introduction to Public Administration. 3. Deals with executive branches of governments in the U.S.: national, state and local. Considers organizational, political and policy-making aspects of each. Discusses administration in other forms of government, such as interstate compacts and regional agreements. *Prerequisite:* POLS 1000.

2420. Women and Politics. 3. Describes and compares status and political activity of women in America with those of women and men in other societies in order to explore causes, methods and results of political involvement by women. Cross listed with WMST 2420. *Prerequisite:* POLS 1000.

2430. Parties, Interest Groups and Elections. 3. [CS◀▶(none)] Studies nature and functions of political organizations in American democracy. Discusses origins and evolution of American parties, causes of interest group development, political socialization, political participation and voting behavior, as well as activities of interest groups within American society and political system. Emphasizes current trends regarding role of parties versus interest groups. *Prerequisite:* POLS 1000.

2450. Politics and Media. 3. Examines the media's coverage of current events, governmental institutions and electoral campaigns. Discusses effect of media on individuals' opinions and behavior. *Prerequisite:* POLS 1000.

2460. Introduction to Political Philosophy. 3. Surveys history of Western political thought including study of concepts and approaches to political philosophy. (Offered once a year)

2490. Topics In:__. 1-3 (Max. 6). Accommodates various specialized subjects not offered as regular courses. *Prerequisite:* POLS 1000.

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with CLAS/HIST 3050. *Prerequisite:* WB.

3100 [2100]. Politics and the Judicial Process. 3. Analyzes courts and their personnel in the American political system, including examination of functions of courts, characteristics of judicial process, approaches to the study of judicial behavior, and role of courts as policy makers. *Prerequisite:* POLS 1000.

3200. Comparative Political Cultures. 3. Histories and experiences of various societies have shaped their values, norms, beliefs, expectations and attitudes. Explore how the beliefs, values and lifestyles of various societies shape peoples' views of their place in the politics of the state and of the state's place in their daily lives. Cross listed with INST 3200. *Prerequisites*: 9 hours of INST or POLS.

3220. Government and Politics of Russia and FSU. 3. Examines the political, economic and identity transitions of Russia and other states of the former Soviet Union during the post-communist era. Explores how current challenges relate to past Soviet practices.

3270. Governments and Politics of the Middle East. 3. Acquaints students with basic political, social and economic institutions of Middle Eastern countries. Emphasizes post-World War I developments, contemporary issues and problems. Special attention is given to politics of major nations in the Middle East such as Turkey, Iran, Israel, Egypt, Saudi Arabia, Iraq and Syria.

3300. Model United Nations. 1-3 (Max. 6). Focuses on the United Nations (UN) system and multilateral diplomacy to prepare students to participate in a Model UN simulation. Students learn to evaluate the UN system, learn strategies to address international problems, and develop skills to effectively represent a country in a role-playing exercise. *Prerequisite:* 9 hours of POLS or INST.

3520. Voting and Participation in America. 3. Examines the ways citizens participate in government, including campaigning, donating money, and voting. Topics include mobilization by parties and campaigns, social and demographic differences in participation, explanations of voting behavior, civic responsibility, and the role of participation in a democracy. *Prerequisite:* POLS 1000.

3550. Political Communication. 3. Examines the intersection of politics and communication. For example, may cover politics and media, interpersonal political discussion, organizational and governmental political communication, political campaigns, politics and technology, etc. Moreover, it may cover the effects of political communication on individuals' opinions and behavior. Cross listed with COJO 3550. Prerequisites: COJO 1000, COJO 1040, or POLS 1000.

3600. American Political Thought. 3. [WB◀▶(none)] Examines key primary sources and traditions from the founding to present. *Prerequisites:* POLS 1000.

3610. Classics in Environmental Thought. 3. Surveys classic texts in environmental thought from the nineteenth century through the present. *Prerequisite:* POLS 1000.

3620. Environmental Justice. 3. Examines core philosophical understandings of justice and applies them to the environment through a variety of case studies, analytical essays and monographs. Cross listed with ENR 3620. *Prerequisite:* POLS 1000.

3680 [2020]. Introduction to Empirical Political Analysis. 3. [(none)◀▶COM2] Introduces students to concepts, approaches and methodologies for empirical analysis of political problems. Students gain practical experience in communicating and presenting statistical analysis of of political data generated through surveys and other research techniques. *Prerequisites:* STAT 2050, 2070 or equivalent.

4013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Dual listed with POLS 5013; cross listed with GEOG 4013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science.

4051 [4050]. Environmental Politics. 3. [WC◀▶(none)] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, ENR, GEOG and REWM 4051. Dual listed with POLS 5051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with AMST/ENR/GEOG/REWM 4052. *Prerequisite:* POLS 1000.

4090. Anglo-American Jurisprudence. 3. Considers topics, such as functions of law in a democratic society; historical origins and growth of the common law as contrasted to the civil (code) law systems; and principal theories of nature and functions of law which have influenced development of English and American legal institutions. Dual listed with POLS 5090. *Prerequisite:* 9 hours of political science or philosophy.

4100. Constitutional Law: Institutional Powers. 3. Encompasses case-study analysis of judicial decisions and policies affecting constitutional interrelationships among the three branches of federal government, federal-state relations, as well as powers of the states and federal government in the area of social and economic regulatory laws. Dual listed with POLS 5100. *Prerequisites:* POLS 1000, POLS 3100 recommended.

4110. Constitutional Law: Civil Liberties and Rights. 3. Encompasses case-study analysis of judicial decisions and policies of the constitutional interpretation of the 1st Amendment (freedom of speech, press, association and religion), privacy rights, the rights of the criminally accused, and civil rights (racial and gender equality). Dual listed with POLS 5110; cross listed with CRMJ 4110. *Prerequisites:* POLS 1000, POLS 3100 recommended.

4220. European Union. 3. Examines the European Union's history, institutional structures, and policy areas and explores the positive and negative effects of European integration. Dual listed with POLS 5220. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

4230. Governments and Politics of Asia. 3. Studies political systems of East Asia. Analyzes impact of social and economic factors upon political institutions. Dual listed with POLS 5230. *Prerequisite:* 9 hours of political science or international studies.

4240. Culture, Society, and Political Economy in East Asia. 3. Discusses how culture, history, social systems and political institutions of East Asian nations have contributed to their political economy of rapid industrialization and social transformation. Dual listed with POLS 5240. *Prerequisite:* one course in global studies; two courses in political science, international studies, history or sociology.

4255. Politics of Developing Nations. 3. An analysis of the processes of political, economic and social change in the non-Western world. Dual listed with POLS 5255. Cross listed with INST 4255. *Prerequisites:* 9 hours of political science or international studies.

4260. Democratization and Regime Change. 3. Examines the theoretical/empirical research on causes of democratic transition and consolidation, including new waves of democratization and prospects for democratization in other contexts. Focus is given to a variety of theoretical/methodological perspectives such as the structural, strategic, social/cultural, institutional, and economic approaches. Dual listed with POLS 5260; cross listed with INST 4260. *Prerequisites:* 9 hours of political science or international studies.

4290. Inter-American Relations. 3. Surveys inter-American system and idea of hemispheric unity. Analyzes major issues confronting inter-American community. Dual listed with POLS 5290. Cross listed with INST 4290. *Prerequisite:* 9 hours of political science or international studies including POLS 2310.

4300. The World System. 3. Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with POLS 5300. Cross listed with INST/SOC 4300. *Prerequisite:* SOC 1000 or ANTH 1100 or equivalent political science, international studies, or social science course.

4330. American Foreign Relations. 3. Analyzes American foreign policy decision-making process and selected contemporary foreign policy problems. Stresses political and institutional factors, along with analysis of policy options. Dual listed with POLS 5330. Cross listed with INST 4330. *Prerequisite:* 9 hours of political science or international studies including POLS 2310.

4340. International Organizations. 3. Encompasses development of world organizations, such as League of Nations, United Nations and its affiliate bodies. Also studies regional organizations and private international bodies. Dual listed with POLS 5340. Cross listed with INST 4340. *Prerequisite:* 9 hours of political science or international studies including POLS 2310.

4350. Sustainable Development and Global Policy. 3. Considers in-depth meaning of "sustainable development" and trade-offs necessary to achieve it. Considers this issue from global perspective through application of theories in economics, political science, international relations, technology studies and ethics. Dual listed with POLS 5350. *Prerequisite:* 9 hours of political science, international studies, or economics.

4360. International Peace and Conflict. 3. Why do nations go to war, engage in atrocities such as genocide, or move toward peace following conflict? Examines underlying processes behind both conflict and peace in the international system, including sources of conflict and ways conflicts might be moved toward sustainable peace. Dual listed with POLS 5360; cross listed with INST 4360. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

4375. Transitional Justice. 3. Mechanisms provide accountability for gross human rights violations and acts of mass atrocity within nations. Case studies are used to examine types of transitional justice interventions; tensions between demands of justice at local, national, and international levels; and transitional justice's role in post-conflict peace-building and reconciliation. Dual listed with POLS 5375; cross listed with INST 4375. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

4400. Black Politics, 1867 to the Present. 3. Afro-American participation in partisan electoral politics in the United States from Reconstruction to the current presidential election. Cross listed with AAST 4400. *Prerequisites:* AAST 1000, any AASAT 2000-level course, or POLS 1000 and junior/senior standing.

4420. Seminar in Public Administration. 3 (Max. 6). Includes reading and research in selected public administration topics. Dual listed with POLS 5420. *Prerequisites:* 9 hours of political science and consent of instructor.

4430. United States Presidency. 3. Analyzes office of president, its roles, development, relationships with other governmental agencies and problems in the contemporary world. Dual listed with POLS 5430. *Prerequisite:* 9 hours of political science.

4435. Presidential Elections. 3. Examines the process of electing the U.S. president. Topics include the roles of presidential primaries, caucuses, and conventions; campaign strategies; media coverage; citizen participation; the electoral college; and reforms. Dual listed with POLS 5435. *Prerequisite:* POLS 1000.

4455. Energy Security. 3. Evaluates the geopolitical and socioeconomic issues surrounding the roots of energy insecurity and the global challenge to provide adequate, affordable, and accessible energy. Topics of study include the questions of energy nationalism, climate security, import dependence and transportation insecurities, the future of fossil fuels and alternative energies. Dual listed with POLS 5455. Cross listed with INST 4455. *Prerequisites:* 9 hours of INST or POLS, including INST/POLS 2310.

4510. Seminar in Political Behavior. 3 (Max. 6). Examines behavior of participants in political systems with special emphasis on demographic and other variables and their influence. *Prerequisites:* 9 hours of political science and consent of instructor.

4520. Public Opinion. 3. Deals with natures of a public in democracy and means of forming and manipulating public opinion. Emphasizes role of public opinion as essential ingredient of the policy-making process in popular government. Dual listed with POLS 5520. *Prerequisite:* 9 hours of political science.

4530. U.S. Congress. 3. Analyzes aspects of the U.S. Congress, including election of congressmen, legislative process, congressional-presidential relations, and the influence of political parties, interest groups, and constituents on the legislative process. Dual listed with POLS 5530. *Prerequisite:* POLS 1000.

4550. Internship in Government. 1-6 (Max. 6). Integrates practical political experience with academic knowledge. Students are expected to participate in specifically assigned duties and observe broader activities of the sponsoring organization; then, reflect upon this participation and observation in the form of written assignments. Internship credit can be earned for work in political campaigns, Wyoming Legislature or government services. Offered for S/U only. *Prerequisite:* 9 hours of political science.

4560. Washington Semester Program. 15. Provides students with paid internships in Washington, D.C., in either congressional offices or federal agencies. Selection into the program is very competitive and is made the semester prior to service. Offered for S/U only. *Prerequisites:* POLS 1000 and 6 additional hours of political science courses.

4600. Political Violence. 3. Examines causes and consequences of violence both among individuals and among nations. Dual listed with POLS 5600; cross listed with CRMJ 4600. *Prerequisites:* POLS 1000 or SOC 1000. (Normally offered every other year)

4640. Political Philosophy: Ancient and Medieval. 3. Surveys political philosophy from Classical Greek period to Machiavelli. Dual listed with POLS 5640. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

4650. Political Philosophy: Modern. 3. Surveys political philosophy from Machiavelli to present. Dual listed with POLS 5650. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

4660. Political Philosophy: Contemporary. 3. Examines central developments in political philosophy that guide action in today's world. Dual listed with POLS 5660. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

4685. Program Evaluation and Policy Analysis. 3. Explores techniques for analyzing and evaluating public policy choices and impacts. Dual listed with POLS 5685. *Prerequisites:* STAT 2050, 2070 or equivalent and an introductory research methods course in a social science or related discipline.

4700. Readings in Political Science. 1-3 (Max. 6). Outlines special programs of readings in government and politics to meet needs of individual students. *Prerequisite:* 9 hours of political science.

4710. Topics in _____. 1-3 (Max. 9). Accommodates various specialized subjects not offered as regular courses. *Prerequisites:* POLS 1000 and 3 additional hours of political science.

4720. Workshop in Practical Politics. 1-3 (Max. 6). Familiarizes or strengthens participants in techniques of political effectiveness. Includes political organization, campaigning and persuasion. Guest speakers include public officials and experts in the field of practical politics. *Prerequisite:* 9 hours of political science.

4810. Seminar in Political Philosophy. 3 (Max. 6). [(none)◀▶COM3] Seminar in Political Philosophy; Encompasses reading and research on selected problems in political philosophy. Dual listed with POLS 5810. *Prerequisite:* consent of instructor.

4840. Seminar in Public Law. 3 (Max. 6). [(none)◀▶COM3] Includes reading and research on selected problems in public law. *Prerequisite:* POLS 1000, 3100 and consent of instructor.

4850. Seminar in American Politics and Institutions. 3 (Max. 6). [(none)◀▶COM3] Includes reading and research on selected U.S. government and politics problems. Dual listed with POLS 5850. *Prerequisite:* consent of instructor.

4865. [4900] Seminar in International Relations Theories. 3 (Max. 6). Examines theoretical issues in the study of international politics by analyzing major theoretical schools of thought in the study of international relations such as realism, constructivism, and theories of foreign policy. Dual listed with POLS 5865. *Prerequisites:* 9 hours of political science or international studies including POLS 2310 and consent of instructor.

4870. Seminar in International Relations. 3 (Max. 6). [(none)◀▶COM3] Encompasses reading and research in international law and politics. Dual listed with POLS 5870. *Prerequisites:* 9 hours of political science or international studies including POLS 2310 and consent of instructor.

4875 [4910]. Seminar in Comparative Foreign Policy Analysis. 3 (Max. 6). Overviews theories and approaches to cross-national analysis of foreign policy. Examines foreign policies of advanced industrial democracies, Russia and various Third World nations. Emphasizes foreign policy decision making processes in non-American settings. Dual

listed with POLS 5875. *Prerequisites:* 9 hours of political science or international studies including POLS 2310 and consent of instructor.

4890. Seminar in Comparative Government and Politics. 3 (Max. 6). [WC,G◀▶(none)] Researches selected topics in comparative government and politics. Dual listed with POLS 5890. *Prerequisite:* 9 hours of political science or international studies and consent of instructor.

5000. Survey of Public Administration. 3. Designed to introduce the beginning graduate student to the study and practice of public administration at all levels of government. Attention is also directed to specific functions and processes such as intergovernmental relations, budgeting, personnel, and regulation. *Prerequisite:* graduate status and consent of instructor.

5013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Cross listed with POLS 4013 and dual listed with GEOG 4013/5013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science.

5051. Environmental Politics. 3. Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Dual listed with POLS 4051; cross listed with AMST/ENR/GEOG/REWM 4051. *Prerequisite:* POLS 1000.

5060. American Intergovernmental Relations. 3. Theory and practice of American federalism. *Prerequisite:* POLS 5000.

5080. Organizational Development. 3. Exposed to psychological concepts as they apply to organizations. Topics include organizational culture, motivations affecting a person's behavior in the workplace, personal interactions within organizations, and resolution of personal conflicts within the workplace. *Prerequisite:* POLS 5000.

5090. Anglo-American Jurisprudence. 3. Considers topics, such as functions of law in a democratic society; historical origins and growth of the common law as contrasted to the civil (code) law systems; and principal theories of nature and functions of law which have influenced development of English and American legal institutions. Dual listed with PHIL/POLS 4090. *Prerequisite:* 9 hours of political science.

5100. Constitutional Law: Institutional Powers. 3. Encompasses case-study analysis of judicial decisions and policies affecting constitutional interrelationships among the three branches of federal government, federal-state relations, as well as powers of the states and federal government in the area of social and economic regulatory laws. Dual listed with POLS 4100. *Prerequisites:* 9 hours of Political Science, POLS 3100 recommended.

5110. Constitutional Law: Civil Liberties and Civil Rights. 3. Encompasses case-study analysis of judicial decisions and policies of the constitutional interpretation of the 1st Amendment (freedom of speech, press, association and religion), privacy rights, the rights of the criminally accused, and civil rights (racial and gender equality). Dual listed with POLS 4110. *Prerequisites:* POLS 1000, POLS 3100 recommended.

5210. Seminar in Human Security. 3-6 (Max. 6). A broad interdisciplinary approach to the study of human security within the field of international studies and global politics in order to explore the theories and processes that explain past and emerging patterns of behavior in the international system, as well as key aspects of local to global policymaking. Dual listed with INST 5210.

5220. European Union. 3. Examines the European Union's history, institutional structures, and policy areas and explores the positive and negative effects of European integration. Dual listed with POLS 4220. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

5230. Governments and Politics Of Asia. 3. Studies political systems of East Asia. Analyzes impact of social and economic factors upon political institutions. Dual listed with POLS 4230. *Prerequisite:* 9 hours of political science or international studies.

5240. Culture, Society, and Political Economy in East Asia. 3. Discusses how culture, history, social systems, and political institutions of East Asian nations have contributed to their political economy of rapid industrialization and social transformation. Dual listed with POLS 4240. *Prerequisite:* one course in global studies; two courses in political science, international studies, history or sociology.

5255. Politics of Developing Nations. 3. An analysis of the processes of political, economic and social change in the non-Western world. Dual listed with POLS 4255. Cross listed with INST 5255. *Prerequisites:* 9 hours of political science or international studies.

5290. Inter-American Relations. 3. A survey of the inter-American system and the idea of hemispheric unity, followed by an analysis of the major issues confronting the inter-American community. Dual listed with POLS 4290. *Prerequisite:* 9 hours of political science or international studies, including POLS 2310.

5300. The World System. 3. Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with POLS 4300. Cross listed with INST/SOC 5300. *Prerequisite:* SOC 1000 or ANTH 1100 or equivalent political science, international studies, or social science course.

5330. American Foreign Relations. 3. Analyzes American foreign policy decision-making process and selected contemporary foreign policy problems. Stresses political and institutional factors along with analysis of policy options. Dual listed with POLS 4330. Cross listed with INST 5330. *Prerequisite:* 9 hours of political science or international studies including POLS 2310.

5340. International Organizations. 3. Encompasses development of world organizations such as League of Nations, United Nations and its affiliate bodies. Also studies regional organizations and private international bodies. Dual listed with POLS 4340. *Prerequisite:* 9 hours of political science including POLS 2310.

5350. Sustainable Development and Global Policy. 3. Considers in-depth meaning of "sustainable development" and trade-offs necessary to achieve it. Considers this issue from global perspective through application of theories in economics, political science, international relations, technology studies and ethics. Dual listed with POLS 4350. *Prerequisite:* 9 hours of political science or economics.

5360. International Peace and Conflict. 3. Why do nations go to war, engage in atrocities such as genocide, or move toward peace following conflict? Examines underlying processes behind both conflict and peace in the international system, including sources of conflict and ways conflicts might be moved toward sustainable peace. Dual listed with POLS 4360; cross listed with INST 5360. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

5375. Transitional Justice. 3. Mechanisms provide accountability for gross human rights violations and acts of mass atrocity within nations. Case studies are used to examine types of transitional justice interventions; tensions between demands of justice at local, national, and international levels; and transitional justice's role in post-conflict peace-building and reconciliation. Dual listed with POLS 4375;

cross listed with INST 5375. *Prerequisites:* 9 hours of political science or international studies including POLS 2310.

5400. Public Personnel Management. 3. Designed to integrate information about the political environment of personnel administration with problem solving exercises in such specific areas as job analysis, affirmative action, and flextime. A number of topics including the evolution of the civil service, the rights and responsibilities of governmental employees, the functions of public personnel management, and collective bargaining processes are also covered. *Prerequisite:* POLS 5000.

5410. Administrative Behavior and Theory of Organization. 3. An advanced course in the theory of organization and the workings of public agencies. *Prerequisite:* POLS 5000.

5420. Seminar In Public Administration. 3 (Max. 6). A reading and research course in selected topics in public administration. Dual listed with POLS 4420. *Prerequisites:* POLS 2410 and consent of instructor.

5430. United States Presidency. 3. Analyzes the office of the president, its roles, development, relationships with other governmental agencies, and problems in the contemporary world. Dual listed with POLS 4430. *Prerequisite:* 9 hours of political science.

5435. Presidential Elections. 3. Examines the process of electing the U.S. president. Topics include the roles of presidential primaries, caucuses, and conventions; campaign strategies; media coverage; citizen participation; the electoral college; and reforms. Dual listed with POLS 4435. *Prerequisite:* POLS 1000.

5440. Principles and Processes of Government Budgeting. 3. Analyzes the principles, processes and politics of the budgetary process in the U.S. It examines the various theories of budgetary decision-making, the politics of budgeting and budgetary reforms. *Prerequisite:* POLS 5000 and graduate standing.

5450. Administrative Regulation. 3. Significant points of contact between government and business are stressed. Government activities designed to regulate and aid such economic interests as business, labor, agriculture, and consumers are dealt with at length. *Prerequisite:* POLS 5000.

5455. Energy Security. 3. Evaluates the geopolitical and socioeconomic issues surrounding the roots of energy insecurity and the global challenge to provide adequate, affordable, and accessible energy. Topics of study include the questions of energy nationalism, climate security, import dependence and transportation insecurities, the future of fossil fuels and alternative energies. Dual listed with POLS 4455. Cross listed with INST 5455. *Prerequisites:* 9 hours of INST or POLS, including INST/POLS 2310.

5460. Public Administration and Law. 3. Focuses on various facets of the relationship between American public administration and law. Emphasis is placed on the emerging body of administrative law as a context for jurisprudential reasoning in administrative decision making. *Prerequisite:* POLS 5000.

5470. E-Government. 3. Introduces the technology of electronic government by delving into the issues surrounding the usage of web-based service delivery systems and other technological innovations, including how public administrators can better use technological systems and communication with users and IT providers. *Prerequisite:* POLS 5000.

5480. Ethics In Government. 3. The student is introduced to the ethical nature and dilemmas of public administration in American constitutional government. Such topics are addressed as source of ethical obligation, role of loyalty, application of moral philosophy, constitutional theory and ethical obligation, relation of theory and practice, and methods of ethical reflection. *Prerequisite:* POLS 5000.

5500. Internship in Public Administration. 1-6 (Max. 6). Educationally-oriented assignments for work in selected public agencies, with tutorial types of supervision. Offered S/U only. *Prerequisite:* consent of instructor.

5510. Public Policy and Program Management. 3. An overview of governmental policy making processes in the U.S. Attention is then shifted to the uses of applied policy analysis. Students are required to participate in a project which employs a systems approach to deal with managerial problems within a public sector or nonprofit organization. *Prerequisite:* POLS 5000.

5520. Public Opinion. 3. Deals with natures of a public in a democracy and means of forming and manipulating public opinion. Emphasizes the role of public opinion as an essential ingredient of the policy-making process in popular government. Dual listed with POLS 4520. *Prerequisite:* 9 hours of political science.

5530. U.S. Congress. 3. Analyze aspects of the U.S. Congress, including election of congressmen, legislative process, congressional-presidential relations, and the influence of political parties, interest groups, and constituents on the legislative process. *Prerequisite:* 9 hours of political science.

5540. Public Policy Perspectives. 3. Acquaints students with the underlying structure and dynamics of public policy formulation, implementation, and evaluation at the state, local, and federal levels. Drawing on a number of analytic approaches, the course seeks to understand this complex political phenomenon in the context of the institutions that drive it. *Prerequisite:* graduate standing.

5560. Public Administration in Literature and Film. 3. Examines the ways novelists and directors have viewed public administration, the accuracy of portrayals, how views have changed, how novelists and directors have helped create and disparage the rise of the administrative state, and types of administrative arrangements favored. *Prerequisite:* POLS 5000.

5570. Graduate Readings. 1-3 (Max. 9). Special programs of readings of government and politics will be outlined to meet needs of individual students. *Prerequisite:* graduate standing or consent of instructor.

5600. Political Violence. 3. Examines causes and consequences of violence both among individuals and among nations. Dual listed with POLS 4600. *Prerequisites:* POLS 1000 or SOC 1000.

5640. Political Philosophy: Ancient and Medieval. 3. Surveys political philosophy from Classical Greek period to Machiavelli. Dual listed with POLS 4640. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

5650. Political Philosophy: Modern. 3. Surveys political philosophy from Machiavelli to present. Dual listed with POLS 4650. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

5660. Political Philosophy: Contemporary. 3. Examines central developments in political philosophy that guide action in today's world. Dual listed with POLS 4660. *Prerequisite:* POLS 1000; POLS 2460 or 3600 recommended.

5680. Research Methods for Political Science. 3. Introduction to methodology of empirical analysis appropriate for political science and public policy, including introduction to the philosophy of science, research designs, hypothesis formation, measurement, and data collection. *Prerequisite:* STAT 2050, 2070, 5070 or equivalent.

5681. Methods of Political Analysis. 3. Introduction to methods of analysis focusing on understanding the strengths and weaknesses of each method and practical issues arising during the analysis stage of research. Covers quantitative analysis through multiple regression, case study analysis, and archival/historical analysis. *Prerequisite:* STAT 2050, 2070, 5070 or equivalent.

5684. Empirical Analysis for Public Administration. 3. Designed for students in public administration to train them to make decisions based on empirical evidence in policy

and management. Course draws concepts from system analysis, management science, operations research, and social science methodology to provide an understanding of various policy analysis and program management techniques across many applications. *Prerequisite:* POLS 5000.

5685. Program Evaluation and Policy Analysis. 3. Explores techniques for analyzing and evaluating public policy choices and impacts. Dual listed with POLS 4685. *Prerequisites:* STAT 5070 or equivalent and an introductory research methods course in social science or related discipline.

5690. Capstone in Public Management. 3. Integrates theories and concepts introduced in core and option-core courses, and emphasizes students' application of them to various administrative settings. *Prerequisite:* completion of all other core and option core requirements in the MPA Program.

5710. Topics In Political Science. 1-3 (Max. 9). Intended to accommodate various specialized subjects not offered as regular courses. *Prerequisite:* graduate standing.

5810. Seminar in Political Philosophy. 3. Encompasses reading and research on selected problems in political philosophy. Dual listed with POLS 4810. *Prerequisite:* consent of instructor.

5850. Seminar in American Politics and Institutions. 3. Includes reading and research on selected U.S. government and politics problems. Dual listed with POLS 4850. *Prerequisite:* consent of instructor.

5865. Seminar in International Relations Theory. 3. Examines theoretical issues in the study of international politics by analyzing major theoretical schools of thought in the study of international relations such as realism, idealism, constructivism, and theories of foreign policy. Dual listed with POLS 4865. *Prerequisite:* 9 hours of political science or international studies including POLS 2310 and consent of instructor.

5870. Seminar in International Relations. 3. Encompasses reading and research in international law and politics. Dual listed with POLS 4870. *Prerequisite:* 9 hours of Political Science or International Studies including POLS 2310 and consent of instructor.

5875. Seminar in Comparison Foreign Policy Analysis. 3. Overviews theories and approaches to cross-national analysis of foreign policy. Examines foreign policies of advanced industrial democracies, Russia, and various Third World nations. Emphasizes foreign policy decision making processes in non-American settings. Dual listed with POLS 4875. *Prerequisite:* 9 hours of political science or international studies including POLS 2310 and consent of instructor.

5890. Seminar in Comparative Government and Politics. 3. Researches selected topics in comparative government and politics. Dual listed with POLS 4890. *Prerequisite:* 9 hours of political science or international studies and consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Psychology

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Department Chair: Karen Bartsch Estes

Professors:

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Associate Professors:

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SEAN M. McCREA, B.A. Bucknell University 1996; Ph.D. Indiana University 2002; Associate Professor of Psychology 2013, 2009.

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BENJAMIN M. WILKOWSKI, B.A. Ohio University 2002; M.S. North Dakota State University 2005; Ph.D. 2008; Associate Professor of Psychology 2014, 2008.

Assistant Professors:

JOSHUA D. CLAPP, B.A. University of Wyoming 2003; M.A. State University of New York at Buffalo 2008; Ph.D. 2012; Assistant Professor of Psychology 2012.

MEREDITH E. MINEAR, B.S. University of Illinois at Urbana-Champaign 1994; Ph.D. University of Michigan 2004; Assistant Professor of Psychology 2013.

Academic Professional Lecturer:

TARA K. CLAPP, B.A. State University of New York at Buffalo 2005; M.S. Niagara University 2010; Assistant Academic Professional Lecturer in Psychology 2012.

SCOTT FRENG, B.S. Black Hills State University 1995; M.A. University of South Dakota 1998; Ph.D. University of Nebraska - Lincoln 2001; Senior Lecturer in Psychology 2013, 2003.

MARIA I. KUZNETSOVA, B.A. Syktyvkar State University-Russia 2000; M.S. University of South Carolina-Aiken 2005; Ph.D. Virginia Commonwealth University 2011; Assistant Academic Professional Lecturer in Psychology 2011.

Professor Emeritus

George Blau, Charles J. Ksir, Karen B. Nicholas

The Department of Psychology offers coursework at several levels:

1. Introductory courses for students in other programs who wish an elementary knowledge of psychology.
2. Courses supportive of work in other majors.
3. An undergraduate major that is sufficiently flexible to allow students to prepare for graduate programs in psychology, professional schools (e.g. law, medicine) or for employment after graduation.
4. Graduate course work leading to the Ph.D. in clinical psychology, social psychology, cognition/cognitive development, or psychology and law.

Facilities are available for course work and laboratory experiences in areas of psychology such as cognition, personality, social, biological psychology, cognitive development, and psychology and law.

Students who wish to increase chances of employment related to their undergraduate majors should consult an adviser concerning areas of specialization within psychology.

Students planning graduate work in psychology should consult with their faculty adviser concerning career choices and development.

Learning Outcomes

We expect that our Psychology graduating students will have:

1. a basic knowledge of psychology and related fields.
2. the ability to evaluate the assumptions, purposes, methods, and results of psychological research and scholarship.
3. skills in teamwork, leadership, writing, speaking and listening, especially concerning psychology-related topics.

Credit by Examination

Credit by examination will be allowed only for PSYC 1000. The examination accepted is the College Level Examination Program (CLEP); the passing score is 50.

Advanced Placement

The psychology department will accept a score of 4 on the AP exam for credit in PSYC 1000, effective Fall 2015.

Undergraduate Major

A major requires a minimum of 33 semester hours and may not exceed 60 hours in psychology. Of these, 18 hours must be at the 3000 level or above. These upper-division courses must also be taken from at least two different members of the psychology department faculty listed in this *Catalog*.

Students must complete the following courses:
PSYC 1000 General Psychology
PSYC 2000 Research Psychological Methods

Four of five cores:
Biological, PSYC 2210 Drugs and Behavior **or** PSYC 2080 Biological Psychology
Developmental, PSYC 2300 Developmental Psychology
Clinical, PSYC 2340 Abnormal Psychology
Social, PSYC 2380 Social Psychology
Cognitive, PSYC 3120 Cognitive Psychology

Additionally **one** of the following restricted enrollment (seminar or writing intensive) courses is required: PSYC 4060, 4150, 4220, 4250, 4320, 4350, 4380, 4390, 4400, 4740, 4860.

Also required are 6 hours of anthropology, communication/journalism, criminal justice, economics, political science, or sociology; LIFE 1003 or 1010; and STAT 2050 or 2070.

One approved 3-4 credit hour STEM course: CHEM 1000, CHEM 1020, COSC 1010, COSC 1100, KIN/ZOO 2040, KIN/ZOO 2041, LIFE 2002, LIFE 2022, LIFE 2023, LIFE 2050, MATH 1050, MATH 1405, MATH 2200, MICR/MOLB 2021, PHYS 1050, PHYS 1110, STAT 2000, STAT 3050, or ZOO 3600.

For graduation, students must receive a C or better grade in all courses taken to satisfy department requirements.

Psychology courses taken 15 or more years ago will not be used to satisfy degree requirements.

Undergraduate Minor

A minor in psychology requires 18 semester hours in psychology. These must include PSYC 1000 or equivalent and 9 hours at the 3000- level or above, with a grade of C or better.

Students seeking a minor in A&S must have 12 hours exclusive to the minor and not used in the major.

Graduate Study

The Department of Psychology offers the doctor of philosophy in psychology with programs in clinical (APA accredited) psychology, social psychology, cognition/cognitive development, and psychology and law.

Program Specific Admission Requirements

The deadline for receipt of all application materials is January 15.

We only admit students one time per year.

Our graduate students begin their programs of study in the fall semester.

Application materials include the application, one to two page personal statement, official undergraduate and graduate (if applicable) transcripts, official GRE scores (general and Advanced Psychology subject), and three letters of recommendation. An application fee of $50 is required.

Applications are evaluated based on the applicants' academic qualifications (e.g., GRE scores, undergraduate GPA) and interests. Particular attention is paid to the goodness of fit between the applicant's expressed interests and the particular strengths and offerings of our program.

Our program does not employ a set of formal "cut-offs" with regard to any of the quantitative application elements (e.g., GRE scores or undergraduate/graduate GPA). Often a strong record in one area may make up for a weakness in another area. Applicants interested in information on the qualifications of admitted students should consult the student summary data (www.uwyo.edu/psychology).

Program Specific Graduate Assistantships

Applicants are considered for graduate assistantships at the time of admission. Graduate students typically receive some departmental financial support for the first four years.

Program Specific Degree Requirements

Master's Programs
Plan A (thesis)

In addition to the general requirements specified in this *Catalog*, the following are required: (1) successful completion and oral defense of a thesis; (2) PSYC 5060. Statistical Methods in Psychology – 3 hours or STAT 5050. Statistical Methods in Biological Science – 3 hours; PSYC 5300. Applied Multivariate

Analysis – 3 hours or STAT 5055. Statistical Methods for Biologists II – 3 hours; PSYC 5520. Research Design in Psychology – 3 hours; (3) at least 9 hours in 5000-level courses exclusive of those listed above and exclusive of research and thesis research credit.

A minimum of 30 semester hours is required (26 coursework hours and 4 thesis hours).

Doctoral Programs

Doctor of Philosophy in Clinical Psychology

Students complete a four-year, on-campus sequence of required courses covering core areas of psychology and clinical competency. In addition, the following are required: successful completion of a thesis, a preliminary comprehensive examination, a dissertation, two summer clerkships, and a full year APA accredited internship.

Doctor of Philosophy in Social Psychology, Cognition/Cognitive Development, or Psychology and Law

Students complete course requirements in topics designated as core areas of psychology, a preliminary comprehensive examination, and a research-based dissertation.

Psychology (PSYC)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. General Psychology. 3. [CS◀▶H] Surveys the field of psychology through lectures, class discussion and assigned readings. Includes development of behavior, physiological mechanisms of behavior, perception, motivation and emotion, learning, intelligence, individuality and personality and mental health.

1001. Issues in Psychology. 1. [I,L◀▶(none)] Students debate and analyze controversial topics confronting psychologists, thereby gaining a better understanding of the varieties of work done by psychologists, as well as a better understanding of the methods psychologists use to advance the state of knowledge in the field. *Prerequisite:* PSYC 1000 or concurrent enrollment.

2000. Research Psychological Methods. 4. [WB◀▶(none)] Introduces some of the methods of investigating psychological questions. Exposure to various research strategies ranging from observational to experimental, using representative laboratory exercises, lectures, readings, films and demonstrations. Requires written and oral reports. May be used to satisfy department's written and oral communication requirement for majors. Laboratory two hours per week. *Prerequisites:* PSYC 1000, ENGL WA, STAT 2050 or 2070.

2080. Biological Psychology. 3. Introduces biological bases of behavior. Includes ethology and comparative behavior, psychobiological development, physiological and sensory mechanisms of behavior, and evolution and behavioral genetics. Presents basic structural and functional properties of the nervous system. *Prerequisites:* PSYC 1000 and general biology. (Normally offered fall semester)

2210. Drugs and Behavior. 3. Surveys drugs which affect behavior, emphasizing both psychotherapeutic agents and drugs with abuse potential. Includes brief introduction to the chemistry of the brain and how drugs may have their effects. Behavioral, social, historical and medical aspects of each major class of psychoactive drugs are discussed. *Prerequisite:* PSYC 1000.

2220 [2200]. Infant Development. 3. Examines aspects of development of the human organism in the first three years of life. Examines theories, research and issues relating to infant development. Includes motor, perceptual, physical, cognitive, emotional and social development. *Prerequisite:* PSYC 1000.

2300. Developmental Psychology. 3. Introduces psychological development, including age-related changes in thinking, emotion, and behavior. Major theories, methodologies, and empirical discoveries are surveyed in an exploration of developments beginning with conception, with emphasis on social, affective, and cognitive developments in childhood and infancy and their implications for policy and practice. *Prerequisite:* PSYC 1000. (Normally offered spring semester)

2340 [4340]. Abnormal Psychology. 3. Provides a general overview of abnormal behavior, emphasizing types, etiology and treatment methods. *Prerequisite:* PSYC 1000. (Normally offered spring semester)

2380 [4755]. Social Psychology. 3. Examines how peoples' thoughts, feelings, and behaviors are influenced by the presence of others. Course will cover a broad range of theories and research in social psychology. *Prerequisite:* PSYC 1000. (Normally offered fall semester)

3120 [4120]. Cognitive Psychology. 3. Deals with higher mental processes that are primarily unique to human beings from theoretical and research orientations. Emphasizes interrelationships between various cognitive processes and continuity of those processes with perceptual and non-cognitive activities. Discusses how information is processed and remembered. *Prerequisite:* 6 hours in psychology including PSYC 1000. (Normally offered spring semester)

3150. Moral Development. 3. Students explore the vast psychological literature on moral development in affect, cognition and behavior from infancy to adulthood. Topics covered include major developmental theories, research methodologies, current scientific knowledge and its relationship to issues of cultural diversity, social policy and education. *Prerequisite:* PSYC 1000, junior/senior standing or consent of the instructor.

3160 [4160]. Learning and Behavior. 3. Learning focuses on how our experiences affect how we think, feel, and behave. Reviews major theoretical approaches to learning which derive from animal and human research. Discusses applications of learning principles to understanding current behavior, teaching and maintaining new behavior, and eliminating unwanted behavior. *Prerequisite:* 6 hours in psychology.

3250. Health Psychology. 3. Provides overview of growing partnership between psychology and health care, including history of psychology in health care; theoretical foundations of health and illness; intervention and research techniques; stress and high risk behaviors (e.g., substance abuse, eating behaviors, AIDS); psychology's contribution to improving outcomes and quality of life in chronic and life-threatening behaviors. Cross listed with NURS 3250. *Prerequisite:* PSYC 1000.

3300. Gender Development. 3. Examines the development of gender roles and sex differences. Incorporates developmental, clinical and social psychological perspectives. Includes examination of biological, social and cultural factors on gender development; conceptualizations of masculinity, femininity and androgyny; differences in play behavior in boys and girls; evaluation of psychological measurement and research regarding gender development and sex differences. Cross listed with WMST 3300. *Prerequisite:* PSYC 2300 or 4300 or FCSC 2121 or EDST 2450.

4060. History and Systems of Psychology. 3. Deals with history of the ideas that led to present science of psychology. Emphasizes the origins of modern psychology within the context of 19th century science. Discusses philosophical origins of modern psychology. *Prerequisite:* 9 hours in psychology.

4070. Motivation. 3. Studies motivation concerning both humans and non-human animals, emphasizing humans. Discusses the physiological basis of motivation in some detail. Considers emotion as primarily a motivational

state. Covers psychodynamic and personality factors with regard to the human. *Prerequisite:* 6 hours in psychology.

4080. Physiological Psychology. 4. [SB◆▸(none)] Examines physiological mechanisms of behavior, strongly emphasizing neural and hormonal processes. Includes fundamentals of neuroanatomy and evolution of the nervous system, basic neurophysiology, sensory and motor processes, as well as the physiology of emotion, motivation, learning and memory. Lecture three hours per week. Laboratory two hours per week. *Prerequisites:* 6 hours in psychology and LIFE 1000, 1003, or 1010 or an introductory zoology course.

4150. Cognitive Development. 3. Examines cognitive development from infancy through adolescence. Explores, through lecture, discussion and projects, major theories and current empirical research on cognitive development, as well as implications for social and educational policies concerning children. *Prerequisite:* 9 hours in psyc., including child psychology course.

4200. Sensation and Perception. 3. Examines behavioral and physiological processes involved in sensation and perception. Discusses each of the sensory systems, emphasizing their physiology and role in perceptual processing. *Prerequisite:* 6 hours in psychology.

4220. Psychopharmacology. 3. [WC◆▸(none)] Studies behavioral and conscious effects of drugs and drug use in treatment of psychological disorders. *Prerequisite:* PSYC 2340. Dual listed with PSYC 5220.

4250. Psychological Aspects of Chronic Illness. 3. Investigates the impact of chronic physical illnesses on diagnosed children and adults, their families, and society. Emphasizes effects of illnesses on psychological adaptation and quality of life. Should be of particular interest to helping professionals and health care workers. *Prerequisites:* PSYC 1000 and 3250.

4300. Adolescent Development. 3. Examines the developmental changes that occur during adolescence. Considers physical and physiological growth; intellectual, cognitive, academic and vocational development, changes in attitudes, interests and activities; and development of interpersonal relationships. *Prerequisite:* PSYC 1000.

4310. Developmental Psychopathology. 3. Provides basic understanding of developmental psychopathology. Examines characteristics, etiology, assessment and treatment of psychological disorders in children including autism, mental retardation, anxiety, depression, attention, learning, and conduct problems. Prerequisite: PSYC 1000 and PSYC 2300 or FCSC 2121 or EDST 2450.

4320. Intellectual Disability. 3. Acquaints students will all aspects of intellectual disability including assessment, diagnosis and classification, etiology, and associated health and mental health difficulties. Prevention, educational and psychological intervention, family adaptation, and community involvement are also addressed. *Prerequisite:* PSYC 1000 and PSYC 2300 or 4300 or FCSC 2121 or EDST 2450.

4350. Psychology of Adulthood. 3. Examines theories and research on psychological development from early adulthood to the end of life, with special emphasis on positive development, successful aging, and methodological issues in the study of adult development. *Prerequisite:* PSYC 1000.

4370. Criminal Psychopathology. 3. Provides an overview of current theories and empirical evidence concerning relationship between psychological disorder and criminal behavior. Examines various clinical syndromes and their role in biological, social and psychological genesis of crime, as well as the concept of criminal responsibility. Cross listed with CRMJ 4370. *Prerequisite:* 6 hours in psychology.

4380. Death and Dying. 3. Designed to provide a comprehensive overview of the field of thanatology. Death is considered from both an individual and sociocultural perspective. Aims to provide solid ground in research, methods, and theory of end-of-life issues and to encourage contemplation of personal and professional applications of death studies. *Prerequisites:* PSYC 1000 and junior/senior standing.

4390 [3390]. Personality Science. 3. Examines the contemporary science in personality psychology, with a focus on the genetic, biological, social, cognitive, and affective variables which interact to influence individual differences and personality coherence. *Prerequisite:* PSYC 1000 and PSYC 2300 or PSYC 2340 or PSYC 2380.

4400. Principles of Psychological Testing. 3. Encompasses basic concepts, principles and procedures of psychological testing, with a lecture, discussion, laboratory project approach. Emphasizes nature and uses of test reliability, validity, norms and transformations, selecting and evaluating tests, test interpretation models and professional ethics in test use. Lecture three hours per week. *Prerequisites:* 12 hours in psychology and STAT 2050 or 2070.

4500. Introduction to Clinical Psychology. 3. Provides students with general introduction to clinical psychology as a subarea of psychology. Deals with the search for, and applications of, psychological principles and methods aimed at assessing and explaining unique or special problems of the individual, group or family, assisting client(s) to function more meaningfully and effectively, and helping to prevent future problems. *Prerequisite:* 12 hours in psychology, including PSYC 2340.

4730. Psychology and Law. 3. Exposes students to the application of psychological principles to problems in law. Emphasizes the American trial system, correction systems and civil commitment. Cross listed with CRMJ 4730. *Prerequisite:* 12 hours in psychology.

4740. Advanced Social Psychology. 3. [WC◆▸(none)] Concentrates on critical assessment of interpersonal behavior. Students are expected to become familiar with data gathering, analysis and reporting procedures commonly used in contemporary social psychology. *Prerequisites:* PSYC 2000 and 2380.

4760. Child Maltreatment. 3. Lecture and seminar. Examines the phenomenon of child abuse and neglect. Includes an overview of attitudes towards and legal definitions of child maltreatment. Explores parental factors, contextual influences and developmental consequences of maltreatment. Relies heavily on current research in child abuse and neglect. Emphasizes policy implications. Cross listed with CRMJ 4760. *Prerequisite:* 6 hours in psychology.

4820. Psychology of Human Sexuality. 3. A clinical-personality orientation to psychological factors in the development and expression of human sexuality. Focuses on the individual: interactions of physiological factors with developmental influences and personality patterns that produce feelings, thoughts and behaviors associated with human sexuality. *Prerequisite:* PSYC 1000 and 2300 or FCSC 2121 or EDST 2450.

4830. Senior Thesis. 3. [WC◆▸(none)] Senior research project under faculty guidance and supervision. Faculty sponsorship must be obtained prior to registration. *Prerequisites:* senior standing, majors only, 27 hours in psychology, PSYC 2000.

4850. Field Work in Psychology. 1-3 (Max. 6). Provides opportunities to experience applied aspects of psychology in external settings through volunteering, teaching, and related activities. Type and location of experience and requirements for earning credit and for grading are determined with a sponsoring faculty person in the psychology department. An acceptable paper based on work completed may also be required. No credit is available for field work prior to registration for this course. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor required in advance.

4855. Undergraduate Research in Psychology. 1-3 (Max. 6). Provides new opportunities to assist in aspects of conducting basic

and applied psychological research with a sponsoring faculty person in the psychology department. Specific research activities and requirements for earning credit and for grading are determined with a sponsoring psychology faculty person. An acceptable paper based on work completed may also be required. No credit is available for research conducted prior to registration for this course. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor required in advance.

4860. Seminar. 1-6 (Max. 6). Small group meetings for extended discussions of particular topics in psychology, generally one topic for the entire semester. Students prepare thorough reports on an aspect of the topic and present this as basis for group discussion. Topics vary from semester to semester. There is no textbook for the seminar, but students are expected to make extensive use of the library. *Prerequisites:* 9 hours in psychology and consent of instructor.

4960. Service-Learning in Psychology. 3. Experience applied aspects of psychology in real world settings through volunteering. Recent research and other materials preparing students for their service will be discussed in class. After the volunteering experience, the students will prepare an academic paper integrating their practical experience with research and theory learned in class. Cross listed with SOWK 4960. *Prerequisites*: PSYC 1000 and consent of instructor required in advance.

5060. Statistical Methods In Psychology. 3. General statistical analyses and their application to psychology. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs will be utilized. Credit cannot be earned in more that one of the following courses: STAT 2020, 3050, 5050, 5060, 5070, 5080. Cross listed with STAT 5060. *Prerequisite:* 1 course in statistics (all introductory courses except 2000).

5095. Statistical Computation In Psychology. 1-3 (Max. 12). Supervised problem-solving practice in statistical analysis is provided with regard to topics corresponding to those covered in a concurrent statistical analysis course. Statistical analysis topics vary. *Prerequisites*: graduate standing and instructor consent.

5115. Interdisciplinary Early Childhood Seminar. 3. Advanced professional course for students interested in current trends and issues in early childhood development. Interdisciplinary in nature, drawing from research in communication disorders, kinesiology and health, elementary and early childhood education and special education, child and family studies, nursing, and psychology. Cross listed with FCSC, EDEC, NURS, HLED, SPPA 5115. *Prerequisite:* graduate status.

5120. Neuropsychology of Human Behavior. 3. Brain mechanisms involved in the expression and control of human behavior will be studied. Findings from classical neuropsychological studies and more recent clinical research investigations will be used in deriving explanations for the structural and physiological basis of normal and abnormal psychological processes. *Prerequisite:* 9 hours in psychology.

5140. Personality Science. 3. Examines contemporary scientific research and theory in personality. Surveys the biological, cognitive, affective, social, and interpersonal determinants of personality function with individual differences. A theoretical framework highlights the dynamic transactions between individuals and the sociocultural environment over the life course. *Prerequisite:* graduate standing in clinical or experimental psychology.

5180. Advanced Developmental Psychology. 3. Provides a graduate-level overview of development psychology, including current theories, issues, and research in both cognitive development and social development. *Prerequisite:* graduate standing.

5210. Advanced Physiological Psychology. 3. Examines the physiological bases of behavior beginning with a treatment of basic neuroanatomy, neurophysiology, and pharmacology. Discussion then proceeds to the physiological correlates of various behavioral states including sleep arousal, sensory processes, motor control, motivational systems, emotions, learning and memory. *Prerequisite:* 30 hours in psychology including PSYC 4080.

5220. Psychopharmacology. 3. Examines clinical psychopharmacology, the science and practice of using drugs to treat psychological disorders. Dual listed PSYC 4220. *Prerequisite:* graduate standing and consent of instructor.

5230. Advanced Cognitive Psychology. 3. Provides the graduate student with an understanding of theoretical and experimental approaches to the study of human cognitive processing. There is an emphasis on critical evaluation of current research in the area. *Prerequisite:* 30 hours in psychology including PSYC 3120.

5270. Behaviorism. 3. Acquaints the graduate student with behaviorist philosophy, the experimental analysis of behavior, and the application of behavioral technology to experimental, educational, and clinical problems. *Prerequisite:* 30 hours in psychology.

5300. Applied Multivariate Anlysis. 3. The application of multivariate statistical methods in behavioral science research. Topics include multivariate regression, canonical correlation, discriminate analysis, factor analysis and multidimension scaling. A wide range of computer assistance is incorporated. Cross listed with STAT 5300. *Prerequisite:* STAT 5050.

5320. Child and Family Therapy. 3. Designed for graduate students in clinical psychology who already possess adequate background knowledge of child psychopathology and diagnostic skills. Emphasis is on theory and techniques of individual psychotherapy with children and on theories of family therapy. *Prerequisite:* PSYC 5500 and consent of instructor.

5330. Introduction To Clinical Practicum. 1. Provides an introduction to psychotherapy and to the Psychology Clinic for first year doctoral students by having them observe a therapy case in the Psychology Clinic and receive instruction from an advanced doctoral student as to therapeutic techniques and client dynamics. *Prerequisite:* admission to the doctoral program in clinical psychology and permission of instructor.

5340. Introduction To Clinical Supervision. 1-4 (Max. 4). Provides an introduction to the supervision of psychotherapy for advanced doctoral students by having them observe a therapy case in the Psychology Clinic with assigned first year doctoral students and then give instruction as to therapeutic techniques used by the therapist and to client dynamics. *Prerequisite:* admission to the doctoral program in clinical psychology and consent of instructor.

5370. Graduate Seminar in Forensic Psychology. 3. To provide graduate level training in forensic psychology for students pursuing careers in psychology, counseling and criminal justice. *Prerequisite:* 16 hours in psychology or consent of instructor.

5375. Psychology/Law Proseminar. 1-10 (Max. 10). The Psychology Law Proseminar exposes students to various areas of psycholegal research. Topics will vary each semester and students will be expected be actively engaged in the proseminar activities. Students will be exposed to theoretical and applied research that has relevance to legal settings. *Prerequisites:* graduate standing in Psychology and permission of instructor.

5380. Theories and Techniques of Psycotherapy. 3. A course for entering clinical doctoral students. Major current psychotherapies are reviewed in terms of theoretical assumptions and related techniques. Required

of first-year students in the program. *Prerequisite:* admission to doctoral program in clinical psychology.

5400. Clinical Assessment I. 3. First semester of a three semester practicum course in psychological assessment at the doctoral level. During the semesters, extensive examination is made regarding the standardization, relevant application, and significant limitations of assessment techniques. A thorough grounding is interpretation, and communication of the results of psychological evaluation both in writing and in consultation with referral sources. Normally taken during the first year of the doctoral program. *Prerequisite:* restricted to doctoral students in clinical psychology.

5410. Clinical Assessment II. 3. Second semester of a full-year practicum course in psychological assessment at the doctoral level. *Prerequisite:* PSYC 5400.

5420. Clinical Assessment III. 3. Presents the clinical psychologist in training with an introduction to the clinical application of neuropsychological principles and various assessment tools. Includes the administration and interpretation of neuropsychological instruments and batteries, as well as the integration of more traditional assessment techniques with neuropsychological testing. *Prerequisite:* admission to the clinical psychology doctoral program and PSYC 5410.

5425. Diagnostic Interviewing. 1. Students review research on diagnostic interviews, practice basic interviewing skills and learn to administer the Structured Clinical Interview for DSM-IV (SCID-I) using training tapes, class discussion and role-play exercises. As time permits, other interviews used to assess personality disorders and specific diagnostic categories will be reviewed. *Prerequisite:* admission to the doctoral program in clinical psychology.

5430. Clinical Neuropsychological Assessment. 3. Present the clinical psychologist in training with an introduction to the clinical application of neuropsychological principles and various tools. Includes the administration and interpretation of neuropsychological instruments and batteries, as well as the integration of more traditional assessment techniques with neuropsychological testing. *Prerequisite:* admission to the clinical doctoral psychology program, PSYC 5400, 5410, and 5120.

5440. Behavior Analysis and Therapy. 3. A seminar in behavior analysis and therapy designed to acquaint the student with literature on radical behaviorism and behavior analysis and to develop skills in the use of techniques based on learning principles. *Prerequisite:* admission to doctoral program in clinical psychology and consent of instructor.

5450. Clinical Practicum. 1-4 (Max. 8). Beginning clinical practicum course providing doctoral students in clinical psychology with supervised experience in individual psychotherapy. Psychodynamic, client-centered, and behavioral techniques are employed. Cases and theoretical issues discussed in weekly seminar. Individual supervision of students by clinical faculty. *Prerequisite:* admission to doctoral program in clinical psychology and consent of instructor.

5460. Advanced Clinical Practicum. 1-12 (Max. 12). Advanced clinical practicum course for students beyond their second year in the doctoral program in clinical psychology. Provides additional supervised experience in individual, family, child, and group therapy, as well as in psychological assessment. Experiences include case conceptualization, case management, and provision of direct services. *Prerequisite:* admission to doctoral program in clinical psychology, PSYC 5450, and consent of instructor.

5470. Empirically Supported Psychotherapies. 3. Students become familiar with the efficacy and effectiveness of important state-of-the-art treatments with a focus on treatments of mood and anxiety disorders. Course goals include gaining a critical understanding of the issues involved in identifying psychological treatments that work. *Prerequisite:* PSYC 5380; PSYC 5510.

5500. Psychopathology I. 3. Students will obtain research-based knowledge in developmental psychopathology via lectures, discussions, and student presentations. This course will cover disorders that usually begin in childhood and how these disorders manifest across the lifespan. The course will also cover disorders that begin later and how these disorders manifest in children and adolescents.

5510. Psychopathology II. 3. Students will obtain research-based knowledge of both descriptive and explanatory adult psychopathology. In addition to learning how adult mental disorders present, students will acquire a framework for understanding the multiple variables that interact over the lifespan to influence adult psychopathology.

5515. Introduction to Scientist/Practitioner Training. 2. Acquaints first-year clinical doctoral students with the science-practitioner model for the practice of clinical psychology. Emphasis is on integrating science and practice. Focus is also on the crucial role of the scientist-practitioner in our emerging behavioral healthcare system. *Prerequisite:* entry into Clinical Doctoral Program.

5520. Introduction To Research. 3. Introduction to problems and issues in research methodology. Ongoing research directed by various faculty are used as paradigms for conceptualization of research problems. Students critically evaluate projects presented and begin planning for research leading to theses and dissertations. *Prerequisite:* graduate status in psychology.

5530. Ethical Issues in the Practice of Psychology. 1 (Max 2). Informs and sensitizes the student to ethical issues, precedents, practices, and legal issue in the practice of psychology and in research. *Prerequisite:* graduate standing in psychology.

5550. Clinical Seminar. 1-3 (Max. 18). Graduate level seminar in clinical psychology, the topic of which will vary from semester to semester. Emphasis is on providing students with an in-depth analysis of some specific area of clinical psychology. *Prerequisite:* admission to the doctoral program in clinical psychology.

5630. Clinical Supervised Practicum I. 2. The first semester of a one year practicum in clinical supervision for doctoral students in clinical psychology. Students supervise at least one 2nd or 3rd year clinical doctoral student, attend supervision team meetings, and may conduct group supervision and/or see clients as determined by team leader. *Prerequisites:* enrollment in doctoral program in clinical psychology.

5640. Practicum in Clinical Supervision II. 2. The second semester of a one year practicum in clinical supervision for doctoral students in clinical psychology. Students supervise at least one 2nd or 3rd year clinical doctoral student, attend supervision team meetings, and may conduct group supervision and/or see clients as determined by team leader. *Prerequisite:* enrollment in doctoral program in clinical psychology.

5650. Theories of Social Psychology. 3. Designed to give the student a thorough understanding of the theories and methodologies of contemporary Social Psychology. *Prerequisite:* 16 hours in psychology including PSYC 2380.

5670. Group Theory and Process in Psychotherapy. 3. Theory and practice of group psychotherapy. Enrollment requires that students be willing to learn from both objective research of experts and their own subjective experiences in the training-group lab experience. *Prerequisite:* consent of instructor.

5685. Neurophysiology. 4. Designed to investigate the structure and function of nervous systems, drawing information from both verte-

brate and invertebrate organisms. Topics such as sensory systems, motor coordination and central integrative mechanisms will be covered in addition to the basic neurophysiology of nerve cells. The laboratory complements the lecture sequence. *Prerequisite:* one course in physiology, chemistry, physics.

5720. Advanced Social Development. 3. Provides a graduate-level introduction to theory and empirical research on social development. Topics include emotional development, attachment, socialization, moral development, aggression, and social context. *Prerequisite:* graduate standing.

5740. Internship in Clinical Psychology 1. (Max. 3). Full-year, 40 hours per week assignment to a mental health or related agency having an established internship program. This placement must be approved by the Department of Psychology and include: (a) adequate supervision of the intern and (b) didactic and other educational experiences that supplement practicum work. Registration for fall, spring, and summer terms is required. *Prerequisite:* Completion of preliminary examination and dissertation proposal, department approval.

5760. Graduate Seminar. 1-10 (Max. 18). Topic varies from semester to semester. Emphasis is upon the preparation of reports on special topics in psychology and the presentation and discussion of these reports in the seminar situation. *Prerequisite:* 6 hours in psychology and consent of instructor.

5775. Developmental Psychology Seminar. 1-3 (Max. 18). Graduate level seminar in developmental psychology, the topic of which will vary from semester to semester. Emphasis is on providing student with an in-depth analysis of some specific area of developmental psychology. *Prerequisite:* consent of instructor.

5780. Advanced Cognitive Development. 3. Provides a comprehensive account of current views of cognitive development. Emphasis is given to alternative theoretical explanations for findings from empirical research. *Prerequisite:* graduate standing.

5785. Social Psychology Seminar. 1-3 (Max. 18). Graduate level seminar in social psychology, the topic of which will vary from semester to semester. Emphasis is on providing students with an in-depth analysis of some specific area of social psychology. *Prerequisite:* permission of instructor.

5790. Clerkship in Clinical Psychology. 1-3 (Max. 9). Provides practical clinical and administrative experience in institutional and community settings. Experience includes psychological assessment, group and individual therapy activities, participation in clinical and administrative staff conferences, consultation to various departments and agencies within the institutional setting and in the community, training of professionals in psychological concepts and techniques, and participation in research. Experiences are located in various community, county, and state agencies primarily in the Rocky Mountain region. Successful completion of three clerkships is a required part of the doctoral program in clinical psychology. *Prerequisite:* enrollment in doctoral program in clinical psychology and assignment by department.

5800. Research in General Psychology. 1-8 (Max 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5810. Research in Experimental Psychology. 1-8 (Max. 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5820. Research in Social Psychology. 1-8 (Max. 24). *Prerequisites:* consent of instructor and graduate standing in the department.

5830. Research in Clinical Psychology. 1-8 (Max. 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5840. Research in Developmental Psychology. 1-8 (Max. 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5850. Research in Comparative Psychology. 1-8 (Max. 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5860. Research in Physiological Psychology. 1-8 (Max. 24). *Prerequisites:* consent of the instructor and graduate standing in the department.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Students are expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Religious Studies

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MICHAEL C. BROSE, B.S. Seattle Pacific University 1978; M.Sc. University of British Columbia 1985; M.A. University of Washington 1991; Ph.D. University of Pennsylvania 2000; Associate Professor of History 2006, 2000; Adjunct Associate Professor of Religious Studies 2015.

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ERIC W. NYE, B.A. St. Olaf College 1974; M.A. University of Chicago 1976; Ph.D. 1983; Associate Professor of English 1989, 1983; Adjunct Associate Professor of Religious Studies 2015.

SALLY L. PALMER, B.A. The Colorado College 1966; Ph.D. Rutgers University 1971; M.Div. The Iliff School of Theology 1977; Adjunct Lecturer of Religious Studies 2010.

KERRY PIMBLOTT, B.A. Kings College London 2005; Ph.D. University of Illinois at Urbana Champaign 2012; Assistant Professor of African American and Diaspora Studies and History 2014; Adjunct Assistant Professor of Religious Studies 2015.

Professor Emerita:

Gladys M. Crane

Throughout history, religion has played an important role in shaping cultures and societies. Religious beliefs have inspired armies in their wars and leaders in their decisions. Religions have provided the foundation for ethical behavior and in many societies have been the primary source of education. In today's world, religions remain important, influencing our responses to 9/11, the Arab Spring, the Middle East crisis, and other events in regions around the world. Even in our own secular United States, religions and their beliefs play a major role in our debates over public policy.

The Religious Studies department offers a range of courses in the academic study of religions. These courses seek to acquaint students with religious beliefs and behavior, helping them to understand the ability of religions to define the world in which their adherents live and the power religions have to influence the behavior of their followers. Religious Studies courses cover a broad range of religions, both modern and historical. Some courses focus on understanding a single religion in a limited time period, while others compare aspects of different religions. Yet further courses focus on religious expression, studying how religious beliefs are depicted in literature, film, art and music. Many of these courses are offered by the Religious Studies department, while others can be found in various departments, including anthropology, art, English, history and sociology.

Undergraduate Major

A major in Religious Studies requires 33 hours (11 courses).

For students completing their degree under the 2003 University Studies Program:

Two required courses (6 hours):

1) RELI 1000, Introduction to Religion.

2) RELI 4000, Theories of Religion.

Primary Concentration (9 hours):

Students should acquire a focused concentration by taking three courses (1) on a single religion, or (2) on the religions of particular region or culture. Courses may be from a limited time period or spread across history. Students may choose from established concentrations or create their own concentration in consultation with their adviser. [Six hours must be above 3000.]

Secondary Concentration (6 hours):

Students should take two courses in a religion, region, or culture differing significantly from that of the concentration. [Three hours must be above 3000.]

Electives (12 hours):

Four courses in Religious Studies (see note 2 below) chosen in accordance with the student's interests. [Six hours must be above 3000.]

For students completing their degree under the 2015 University Studies Program:

Two required courses (6 hours):

1) RELI 1000, Introduction to Religion.

2) RELI 4000, Theories of Religion.

First Concentration (9 hours):

Students should acquire a focused concentration by taking three courses (1) on a single religion, or (2) on the religions of a particular region or culture. Courses may be from a limited time period or spread across history. Students may choose from established concentrations or create their own concentration in consultation with their adviser. [Six hours must be above 3000-level.]

Second Concentration (9 hours):

Students should take three courses in a religion, region, or culture differing significantly from that of the first concentration. [Six hours must be above 3000-level.]

Electives

Three courses in Religious Studies (see note 2 below) chosen in accordance with the student's interests. [Six hours must be above 3000-level.]

Language

Students should take three semesters of a single foreign language or demonstrate equivalent proficiency. See note 3 below.

For all Religious Studies Majors:

Honors

If a student wishes to pursue an Honors designation in Religious Studies, two additional requirements must be fulfilled.

A) A three-hour Thesis Seminar or Internship, during which a research paper is written, or other suitable research project is carried out.

B) Demonstration of competency in a foreign language equivalent to a fourth-semester college-level course.

Notes:

1. If students majoring in Religious Studies can use its courses to satisfy requirements in a second major or minor, this is permitted.
2. Courses for the major should be drawn from those with a RELI prefix, or from a list of approved courses taught by other departments or programs. See the list of approved courses on the Religious Studies website. In each of the concentrations, only one course may be from outside RELI offerings. Two such courses may be used as electives. Occasionally, courses on religion are taught by outside departments as one-time opportunities. Students may propose these for inclusion in the major to the director of the Religious Studies department.
3. The language requirement may be satisfied with American Sign Language (ASL) or, with the approval of the department, coursework in another form of non-English communication (e.g. computer science, statistics, music composition).

4. All courses must be passed with a grade of C or better.

Undergraduate Minor

The Minor in Religious Studies requires eighteen hours of relevant courses, all with a grade of "C" or higher. These should consist of courses as set out below:

1. RELI 1000, Introduction to Religion
2. RELI 4000, Theories of Religion, a capstone course.
3. Twelve hours of courses focusing on issues in the study of religions, nine of which should be at the 3000 level or higher. See note 2.

Graduate Study

At present, no program for a graduate degree in religious studies is offered; however, some courses may be counted at the graduate level.

Religion (RELI)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Introduction to Religion. 3. [CH,G◀▶H] Introduces world religions and shared characteristics. Draws on various academic approaches to religion study, emphasizing similarities and differences among wide variety of religions.

1100. Worlds of Religion. 3. [I◀▶(none)] Introduces first-year students to a variety of religious views and practices, events and applications to lead students to an understanding of the wide range of possible ways that religions take shape around the world and how they impact views of the arts, science, social justice and ethical norms.

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2040. Religions of the Middle East: Judaism, Christianity and Islam. 3.[CH,G◀▶(none)] Analyzes origins and early years of three major religions that arose in the Middle East: Judaism, Christianity and Islam. Looks at historical development, political and cultural context, and structure of each religion.

2050. Religions of Asia. 3. [CH,G◀▶H] Introduces students to the religions of Asia. Primary focus on Hinduism and Buddhism, but also addresses several smaller religions. Emphasis on beliefs, sacred texts and tales, practices, ethics and worship, as well as historical development and contemporary issues.

2060. Nature and Spirit. 3. Examines classical principles of Christian theology in light of contemporary ecological issues. Focuses on how Christian thinkers have addressed the question of the relationship between humans, God and nature.

2070. Gender and Religion. 3. Aims at understanding how religion constructs and reinforces gender roles in religion and society. Looks at traditional gender roles in Christianity and the transformation they have undergone in the past century or so. Cross listed with WMST 2070.

2080. Holocaust. 3. [CH◀▶(none)] Surveys the destruction of European Jewry, 1933-1945. Cross listed with HIST 2080. *Prerequisite:* HIST 1120.

2110 [1010]. Introduction to the Old Testament. 3. [CH◀▶(none)] Introduces students to the books of the Old Testament and people whose way of life they describe. Pays particular attention to religion of the Israelites, their history and culture. Focuses on different historical circumstances in which the books were written.

2150. New Testament Survey. 3. Introduces academic study of the New Testament. Focuses on questions of history, religious and cultural context, occasion and purpose for writing the different books and theological development of early Christianity.

2175. The Life and Teaching of Jesus. 3. Explores life and teachings of Jesus within religious, cultural and political context of first-century Palestine. Studies Jewish, Greek and Roman influences on Palestine; then, examines effect of those influences on the gospels (both canonical and non-canonical).

2200. Contemporary American Religion. 3. [CH,D◀▶COM2] The U.S. is home to more world religions and to more versions of those religions than any other nation on the planet. This course examines how the U.S. has shaped these religions and the impact these religions have had in turn on U.S. society and culture.

2225. History of Christianity. 3. Traces Christianity from its beginnings to late 20th century. Cross listed with HIST 2225.

2250. American Religious History I (To 1865). 3. [CH,D◀▶(none)] Traces the history of religion in America through the Civil War. We will pay particular attention to the intertwining of religion and colonialism; the tension between emerging Protestant hegemony and religious pluralism; and the roles religion has played in justifying oppression and pursuing liberty in American history. Cross listed with HIST 2250.

2252. American Religious History II (1865-1945). 3. [CH,D◀▶(none)] Traces American religious history from the Civil War through WWII. Focuses on how race/ethnicity, class, gender, and national origin affected religion, and explores how Americans used religion in oppressing and liberating people; marking and erasing difference; and exporting values abroad as well as reforming society at home. Cross listed with HIST 2252.

2255. Introduction to Judaism. 3. Descriptively analyzes Judaism. Initially focuses on history of Judaism from its origins in Ancient Israel to modern period. Then it studies the religion itself, analyzing its beliefs and practices and how they influence Judaism's adherents.

2315. History of Non-Western Religions. 3. [CH,G◀▶H] Introduces students to religions outside the Judeo-Christian realm familiar in the west. Each religion analyzed in its world views, its ways of life, and in its social organization. History of each religion and its changes. Cross listed with HIST 2315.

2320. History of Islam. 3. [CH,G◀▶COM2] Focuses on the origins of Islam and its early formation, its growth and spread across the world, and its intellectual, spiritual and historical character. Time will also be spent on the formation of Islam in the modern world and how that impacts the views and actions of its members. Cross listed with HIST 2320.

2330. Islam in the Modern World. 3. [(none)◀▶H] How does Islam interact with Modernity? This course extends beyond the news to study contemporary trends and movements among the world's Muslims. Includes a general introduction to the history and religion of Islam, and discusses contemporary Islamic topics, reflecting current issues, instructor research and student choices.

2410. Varieties of Non-Belief in the Western World. 3. [CH◀▶(none)] A broad, chronological survey of different types of non-belief, primarily from the Renaissance onwards. It examines critiques by philosophers, politicians, poets, and novelists aiming to understand their objections to religion and analyzing how these objections shaped the modern religious landscape and the way we understand religion itself.

2450. Traditional African Religion. 3. [CH,G◀▶COM2] Surveys traditional African religions, both ancient and contemporary. Cross listed with AAST 2450.

2500. Special Topics in Religion. 1-3 (Max. 6). Permits occasional investigation of different subjects in academic study of religion.

3090. Middle East and Isreal in Film. 3. [(none)◀▶H] Focus on film representations of Isreal, the Arab world, Turkey and Iran. Studies religion and society, common human

aspirations, modalities of social and other conflicts through screening of feature and short films and discusses issues raised by historical, political, social, cultural and religious tensions and considerations in this region. *Prerequisite:* WA or COM1.

3110. Bible and Archaeology. 3. An archaeological survey illuminating the historical, theological, and cultural landscape of ancient Near East and the Mediterranean world. Examines how archaeology contributes to the understanding of the peoples, texts and religious movements of the Old Testament/Hebrew Bible and the New Testament. *Prerequisites:* RELI 1000 or RELI 2110 or RELI 2150 or ANTH 1300 or ANTH 1450.

3150. Feminist Christian Thought. 3. In recent decades Christianity has undergone important changes with regard to the place of women in the church. Addresses historical and theological discussions that have accompanied those changes. Also addresses how feminism and religion affect one's belief system. Cross listed with WMST 3150. *Prerequisites:* junior standing and at least one course in women's studies or religious studies.

3180. Drama and Religion. 3. Drama and religion seek to communicate ideas about the ultimate meaning of human life. Both influence and are influenced by the culture from which they developed. Examines plays that are influenced by the Bible, Greek plays whose concepts have influenced Christianity over the centuries, and modern plays that address religious issues. Cross listed with THEA 3180. *Prerequisite:* junior standing.

3200. Religion and American Culture. 3. Explores the role of religion in the history of American culture. It considers how developments in American religious history have reflected larger trends in American society, and how those developments have in turn helped shape American society and culture. *Prerequisite:* one lower-level course in religious studies, American history, or American studies.

3220. History of the Modern Middle East. 3. [G◀▶(none)] Surveys the Middle East from 1700 to the present. Emphasizes the demise of the Ottoman Empire, the rise of domination by European colonial powers, transformations in political, social, religious and cultural life, the rise of nationalist movements, the influence of oil, the growth of Islamist political groups and the Israeli-Palestinian conflict. Cross listed with HIST 3220. *Prerequisite:* 6 hours in history, religious studies or international studies.

3225. Apocalypse: The History of the End. 3. The apocalyptic End of Time has become the subject of much speculation, especially since the beginning of the new millennium. Analyzes such speculation as a religious phenomenon in both ancient and modern religions, and attempts to understand its social, cultural and personal impacts. *Prerequisite:* junior standing.

3230. Early Christianity. 3. Considers the development of the Christian religion from a small Jewish sect to its place as the official religion of the Roman Empire and beyond. It examines the development of creeds, doctrines and institutions, placing them within their historical context. *Prerequisite:* RELI 1000, RELI/HIST 2225, or HIST 2113.

3235. Medieval Christianity. 3. Traces the development of 'Christendom' in Europe between about 500 - 1500 CE, concentrating on the Latin West. It examines the growth of Christian institutions and practices, the Church's role as sole governing entity, along with conflicts with secular governments as they developed in later centuries. Cross listed with HIST 3235. *Prerequisites:* RELI/HIST 2225, HIST 1110, or RELI 1000.

3240. Reformation and Enlightenment Christianity. 3. The years between about 1500 and 1800 saw the permanent dismantling of Christianity in the West as a unified force, as Protestantism brought new ways of viewing the relationship between God and humanity. Once the fragmentation began, it accelerated rapidly as Enlightenment thinking challenged Christianity in new and complex ways. Cross listed with: HIST 3240. *Prerequisites:* RELI 1000, RELI/HIST 2225.

3245. Christianity Since Darwin. 3. [(none)◀▶COM2] Christianity has faced many challenges since the mid-nineteenth century, including the thought of Darwin, Marx and Freud, to name a few. Christianity has faced those challenges in various ways and its practitioners continue to re-examine its understandings of a vastly changed and continually changing world. *Prerequisites:* COM1, and RELI 1000 or RELI/HIST 2225 or HIST 1120 or consent of instructor.

3260. African Spirits in the New World. 3. [CH,G◀▶(none)] Begins with Yoruba roots in Africa and travels with the African Diaspora focusing on spirit possession in Haitian Vodou, Cuban Santeria, Jamaican Revival Zion, Jamaican Rastafarianism, Brazilian Candomblé, and "Black Church" in the United States using ethnography and postcolonial theory of religious studies. Cross listed with AAST 3260. *Prerequisites:* AAST 1000 or any AAST 2000 level course or RELI 1000.

3275. World Christianities. 3. [CH,G◀▶(none)] Examines the development of Christianity primarily in Africa, Asia and South America. Cross listed with HIST 3275. *Prerequisites:* WB and CH.

3320. Eastern Thought. 3. Surveys some of the major concepts in Zen, Hinduism, Buddhism, Taoism and Confucianism. Cross listed with PHIL 3320. *Prerequisite:* 3 hours of philosophy.

3340. Mysticism, Yoga, and Enlightenment in the East. 3. Explores Hindu and Buddhist concepts of enlightenment and the means for reaching them through mysticism and yoga. Study the texts and beliefs and their translation into practice. *Prerequisites:* WB and CH.

3344. The Divine Personality in Eastern Religions. 3. Explores divine personality characteristics envisioned in Hinduism and Buddhism and the understandings of human nature, values, and beliefs. How should humans imitate the gods? *Prerequisites:* WB and CH.

3350. Religion and Globalization in India. 3. Learn about religious pluralism in India. In particular, how globalization has impacted the ways people from many different religions, caste, class, and educational backgrounds, ethnicities, and regions experience and practice their religions in 21st century India. *Prerequisites:* RELI 1000 or RELI 2050.

3400. Religion in the American West. 3. [CH,D◀▶(none)] Considers the religious history of the American West from Pre-Columbian times to the present, paying special attention to the ways the West affects religious belief and practice. Themes of contact and conflict will be particularly important in our study, as will the changing perceptions of the West. *Prerequisite:* USP WB course.

4000. Theories of Religion. 3. [WC◀▶COM3] Investigates different theories proposed to explain religion and methods used to investigate them. Pays primary attention to influential thinkers and theorists of the past century. *Prerequisite:* RELI 1000, and 12 additional hours in Religious Studies, at least 6 of which must be at the 3000-level or above, junior standing.

4090. Film and Religion. 3. Movies use religion to convey messages; they debate religious issues and use religion to debate non-religious issues. This course analyzes how film makers use religion and religious themes to transform religions into advocates for social issues and to shape religion's role in society. Popular films drawn from many genres. Cross listed with ENGL 4090. *Prerequisite:* 6 hours of 2000-level or higher literature courses or religion courses.

4100. African American Religious Culture. 3. [WC,D◆▶(none)] This mid-level writing-intensive seminar is a comparative study of African American religious celebration, primarily in the context of Afro-Christianity, but touching on Islam, Candomblé, "Voodoo," Santeria, and Rastafarianism. Cross listed with AAST 4100. *Prerequisite:* WB and one of the following: AAST 1000 or any AAST 2000-level course or RELI 1000.

4113. Medieval Religious Dissent. 3. Religious dissent in the Middle Ages included what might be called heresy, but also encompasses such marginal groups as Jews and witches. Examines development of orthodoxy and persecution of religious diversity between eleventh and 16th centuries within the historical context of the times. Cross listed with HIST 4113. *Prerequisite:* HIST 1110, 4100 or 4110.

4150. Christians, Jews and Muslims in Iberia. 3. Focuses on how, from the Middle Ages to the 20th century, these three religions have interacted and influenced each other and Iberian culture in general. Readings from numerous figures, from Maimonides to Goytisolo. *Prerequisite:* junior/senior standing. No knowledge of Spanish or Portuguese is required.

4160. Moses, Jesus, and Muhammad. 3. [CH◆▶(none)] Examines the biographies of Moses, Jesus and Muhammad found in works of history, in sacred literature, in hagiography, ritual and popular culture. Demonstrates strategies used to recover their historical personalities and how they are portrayed in multiple religious traditions, offering insights into how each have shaped our world. *Prerequisite:* RELI 1000 or junior standing.

4174. Judaism from Ezra to Jesus. 3. This course focuses on the religious and historical development of Judaism during the centuries between the end of the Old Testament and the New Testament, studying the arrival of Greek and then Roman culture and the changes Judaism underwent during that time that endure today. Cross listed with HIST 4174. *Prerequisites:* WB or COM2, and RELI 1000 or RELI 2110.

4175. Judaism at the Dawn of Christianity. 3. Judaism is the only Mediterranean religion that was practiced in the ancient world as well as in Late Antiquity and beyond. This course helps students analyze how Judaism was able to change and adapt at key moments to provide its adherents with an active, living religion that addressed their needs. Cross listed with HIST 4175. *Prerequisites:* RELI 1000 or RELI 2110, and junior standing.

4190. Women and the Bible. 3. Explores depictions, roles and statuses of women found in the Bible, both Old and New Testaments. Introduces ways biblical portraits of women have been used in recent centuries to develop theologies of, by and for women. Cross listed with WMST 4190. *Prerequisite:* junior standing or permission of instructor.

4260. Judaism in the Modern World. 3. Studies Jews and Judaism from pre-modern period to present. Traces migration of Jews from Europe to the USA and Israel, while examining radical changes that transform the religion. *Prerequisite:* junior standing.

4310. Seminar in Asian Religions. 3 (Max. 9). Students will be introduced to a number of indigenous and analytical frameworks and interdisciplinary theories and methods in the examination of a specialized topic in the study of Asian religions. Specific focus of the course varies by semester. *Prerequisite:* RELI 2050 or junior standing.

4335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with HIST 4335 and WMST 4335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

4400. Internship in Religious Studies. 1-4 (Max. 4). Application of the academic discipline of religious studies to work outside the university classroom. Students must meet with the Religious Studies internship director in advance to identify the internship's components and grading criteria. Internships requiring a faith commitment on the intern's part are not eligible for credit. Not to be used for graduate credit. *Prerequisites:* 12 hours of religious studies, including RELI 1000 and RELI 4000 or its equivalent; advanced standing as a religious studies minor; consent of internship director.

4500. Special Topics in Religious Studies. 1-3 (Max. 12). Presents from semester to semester a variety of important topics in the academic study of religion. *Prerequisite:* RELI 1000.

4635. Religious Studies Departmental Honors. 0. Satisfactory completion of this course indicates that Religious Studies Departmental Honors have been conferred on the student. Offered Satisfactory/Unsatisfactory only. *Prerequisites:* Consent of Religious Studies thesis chairperson; demonstration of competency in a foreign language equivalent to a fourth-semester college level or concurrent enrollment in a fourth-semester foreign language course.

4900. Independent Study in Religion. 1-3 (Max. 6). Primarily for juniors and seniors who can benefit from independent study of topics in religious studies not covered in course offerings. Guidance provided by faculty member in the appropriate field. *Prerequisites:* 9 hours in religious studies and consent of instructor.

4930. Thesis. 0-6 (max. 9). Directed research and writing supervision of Religious Studies thesis chairperson. Results in production of Religious Studies thesis. *Prerequisites:* Successful completion of or concurrent enrollment in RELI 4000, advanced undergraduate status in good academic standing, consent of Religious Studies thesis chairperson and department chair.

4961. Domestic Field Course. 1-6 (Max. 12). This course takes students away from campus to other locations in the United States to study religion on site in its geographic and cultural context. Destination and specific content varies, but the course always requires attention to the religious, racial, ethnic, and cultural diversity of religion in the United States. *Prerequisites:* Junior standing, WA or COM1.

Science and Mathematics Teaching Center (SMTC)

453 Wyoming Hall, 766-6381
FAX: (307) 766-3792
Web site: smtc.uwyo.edu
Director: Jacqueline Leonard
Program Coordinator: Sylvia Parker

The Science and Mathematics Teaching Center (SMTC) is an intercollegiate, interdisciplinary program committed to excellence in science, mathematics, and technology education. Governed jointly by the Colleges of Education and Arts & Sciences, the SMTC, in cooperation with the Wyoming Department of Education and the Professional Teaching Standards Board (PTSB), serves as a science and mathematics education resource and professional development center for the state. The affiliate faculty for SMTC is comprised of faculty members from the College of Education, the College of Arts and Sciences, the College of Agriculture and Natural Resources, and the College of Engineering and Applied Science.

The SMTC provides extensive off-campus professional development that serves Wyoming communities, administrators, teachers, students and school districts. SMTC in-service and extension courses, workshops, institutes and conferences are provided with the principal purpose of improving science and mathematics teaching in Wyoming.

The SMTC offers two graduate degree program options: the Master of Science in Natural Science in Middle Level Math or Middle Level Science, designed for elementary, middle, and general science and mathematics teachers; and the Master of Science in Natural Science (Natural Science Education), designed for students that are completing the first year of their graduate program at Teton Science School.

Please see the SMTC section under the College of Education in this *Catalog* for course and graduate program information.

Sociology

406 Ross Hall, 766-3342
FAX: (307) 766-3812
Web site: www.uwyo.edu/Sociology
Department Head: Donna Barnes

Professors:
DONNA A. BARNES, B.A. Louisiana State University 1975; M.A. University of Texas 1978; Ph.D. 1982; Professor of Sociology 2011, 1991.
MALCOLM D. HOLMES, B.A. University of Texas at El Paso 1974; M.A. 1976; Ph.D. University of Texas at Austin 1982; Professor of Sociology 1999, 1991.
RICHARD S. MACHALEK, B.S. Texas A&M University 1969; M.A. University of Texas 1972; Ph.D. 1975; Professor of Sociology 1988.

Associate Professor:
ANNA ZAJACOVA, B.A. Hunter College (CUNY) 1999; M.S. Rutgers 2004; Ph.D. Princeton University 2006; Associate Professor of Sociology 2014, 2009.

Assistant Professors:
SHIRI NOY, B.A. McGill University 2005; M.A. Indiana University 2007; Ph.D. 2013; Assistant Professor of Sociology 2013.
MATTHEW A. PAINTER II, B.A. Kansas State University 2003; M.A. Ohio State University 2005; Ph.D. 2010; Assistant Professor of Sociology 2010.

Adjunct Professors:
Anatchkova, Inman

Professors Emeriti
David Ashley, Audie Blevins, Gary Hampe, Quee-Young Kim

Sociology is the scientific study of group life and the investigation of the social causes and consequences of human behavior. This discipline occupies a central position in the social sciences and covers the full scope of social behaviors from intimate interactions between individuals to relationships among entire societies. Most importantly, sociology invites students to analyze those features of social existence that we are most likely to take for granted. As such, sociological training imparts critical and analytical skills of great value in virtually all aspects of modern life.

Much of the applied knowledge employed in diverse fields such as communications, social work, business management, family life, health care, urban planning, government, education, religion and the administration of justice derives from basic sociological research. Consequently, sociological training provides an excellent background for occupations connected with these fields. In addition, an undergraduate degree in sociology prepares many students for advanced study in law, education, business, public administration, social work, pastoral work, health care and other professions.

The department provides a comprehensive sociology education both for students who elect to terminate their formal education with the B.A. and for those who plan to pursue advanced degrees in sociology or a related social science. Fundamentally, however, the department aspires to prepare students for informed participation in an increasingly complex world.

Undergraduate Major

In addition to University and College requirements, the following are minimum requirements for the undergraduate major in sociology leading to the Bachelor of Arts degree.

Thirty-five credit hours are required to earn a major in sociology. These courses are listed below. This includes 14 hours of required Foundation Courses, 12 hours of Core Courses, and 9 hours of sociology elective courses. Of the 12 hours of required Core Courses, students must take one course each from any 4 of the 5 Core Course areas identified below. Grades of "C" or better must be earned in all 35 hours of coursework in order to be counted toward the major.

Foundation Courses

SOC	1000	3
SOC	2070	4
SOC	3090	4
SOC	3900	3
	Total Hrs	***14***

Core Courses:

Complete four courses, one each in any four of the following five areas:

Area A: Society and Inequality

SOC	2350	3
SOC	3500	3
SOC	4050	3
SOC	4160	3

Area B: Social Organization and Processes

SOC	4020	3
SOC	4500	3
SOC	4650	3
SOC	4805	3

Area C: Social Institutions

SOC	3200	3
SOC	3605	3
SOC	3880	3
SOC	3140	3
SOC	4350	3

Area D: Individual and Society

SOC	2400	3
SOC	3110	3
SOC	3150	3
SOC	3400	3

Area E: Global Comparative Sociology

SOC	3000	3
SOC	4110	3
SOC	4300	3
SOC	4370	3
	Total Required Hrs.	***12***

Elective courses:

Complete 9 additional hours of sociology courses. Electives may be used either to develop additional expertise in an area of interest or to broaden the student's sociological training.

Total Elective Hrs. 9

Undergraduate Minor

The sociology minor requires a total of 18 sociology credits including SOC 1000. At least 9 of these 18 hours must be upper-division sociology credits.

Only grades of C or better can be counted toward the minor. Also, A&S students seeking a minor must have 12 credit hours exclusive to the minor and not counted toward their major.

Honors in Sociology

Sociology majors with a 3.5 overall GPA, a 3.5 GPA in sociology courses and one 5000-level sociology course graduate with honors in sociology. The department also nominates students for membership in *Alpha Kappa Delta*, the international honorary society for sociology. Selection is based on academic excellence.

Graduate Study

The Department of Sociology offers programs leading to the master of arts degree in sociology under Plan A.

Program Specific Admission Requirements

Admission based on the university minimum requirements.

Program Specific Graduate Assistantships

Graduate education allows students to acquire both teaching and research experience. Assistantships are available, upon application, to many incoming students and continued support is contingent on adequate progress in the program.

Program Specific Degree Requirements

Master of Arts in Sociology
Plan A (thesis)

To graduate with a master's degree in sociology, the student must complete a minimum of 26 hours of coursework.

The student is required to take Advanced Social Theory (SOC 5000), Statistical Methods for the Social Sciences (SOC 5070 - no other statistics course can be substituted), and Advanced Social Research Methods (SOC 5100).

The student must also take three elective sociology courses, as well as three additional elective courses that may be outside of the department. In addition, all graduate students must complete a thesis.

Credit for Practicum in College Teaching (SOC 5900) may not be included in the minimum number of course hours.

A minimum GPA of 3.0 is required for satisfactory progress in the program and graduation. Students must earn a grade of "B" or better in required classes.

Students whose undergraduate training in sociology does not include the prerequisites for the required graduate courses may correct the deficiencies by taking such undergraduate courses early in the graduate program. However, such work does not count toward graduation requirements.

Students also are required to write a master's thesis for which they receive a minimum of four hours of credit (SOC 5960). Before undertaking the thesis work, students must write and defend their thesis prospectus before a select faculty committee.

The department emphasizes both research skills that prepare the student for immediate job placement and broad academic work facilitating entrance to doctoral programs.

Sociology (SOC)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Sociological Principles. 3. [CS◀▶H] Provides a survey of the discipline and foundation for other sociology courses. Explores major areas of interest — ranging from small groups and families to bureaucracies and social movements. Introduces significant concepts and theories, along with tools of social research. Gives attention to contemporary American society, as well as comparative and historical material.

1100. Social Problems and Issues. 3. [I,L◀▶(none)] Explores various approaches to defining and identifying social problems and applies basic sociological concepts and methods to analysis of selected social problems and issues.

1350. American Indians in Contemporary Society. 3. [CS,D◀▶(none)] Survey lecture course. Examines social and cultural issues and concerns of American Indians both on and off the reservations. Additionally, the status of American Indian people within the dominant society and culture are explored. Cross listed with AIST 1350.

2070 [2000]. Introductory Statistics for the Social Sciences. 4. [QB◀▶(none)] Presents central ideas of descriptive statistics and statistical inference, as applied to questions in social sciences. Includes graphs, averages, sampling, estimation, hypothesis-testing and relationships between variables. Introduces associated computer skills. Credit cannot be earned in more than one of STAT 2010, 2050, 2070, 4220, 5520. Cross listed with STAT 2070. *Prerequisites:* MATH 1000, 1400 or equivalent.

2350. Race and Ethnic Relations. 3. [D◀▶(none)] Examines social relations among majority and minority groups by devoting particular attention to race and ethnic relations in the U.S. Encompasses sociological approach to this topic, which emphasizes power structures, economic relationships and cultural traditions historically and today. Devotes attention to social psychological issues, such as prejudice, and social structural issues, such as class inequality. *Prerequisite:* SOC 1000.

2400 [3300]. Criminology. 3. Generally introduces the nature of crime, statistics on crime, types of criminal behavior and explanations of crime. Cross listed with CRMJ 2400. *Prerequisite:* SOC 1000 or equivalent.

2890. Special Topics. 3. Introduces students to some of the unique sociological interests of our faculty and instructors that fall outside of topics covered in our regular course curriculum.

3000 [2100]. Social Change. 3. [G◀▶(none)] Studies causes, processes and consequences of structural transformations in historical and comparative perspective. Reviews and assesses forces that account for sociological changes. Explores social change globally as well as in the U.S. Cross listed with INST 3000. Prerequisite: SOC 1000.

3100. Chinese Society. 3. [G◀▶(none)] Reviews origins and consequences of Chinese revolution in comparative and cultural perspectives. Discusses influence of historical traditions and social structure on individual lives and behavioral patterns. Cross listed with INST 3100. *Prerequisite:* SOC 1000.

3110 [2110]. Self and Society. 3. Considers social behavior at the micro level, emphasizing the influence of society on the individual's thoughts, emotions and behaviors. Topics such as the development of the self over the life course, the self in social interaction, and the role of attitudes and emotions in social interaction are discussed. *Prerequisite:* SOC 1000 or PSYC 1000.

3140. [4100, 4140] Sociology of the Family. 3. Two major themes of the course are change experienced by the family institution and the centrality of the family in America today. Subjects that are covered include: A brief history of the family in the U.S., kinship, family structure, mate-selection, marriage, divorce and socialization. *Prerequisite:* SOC 1000.

3150. Collective Behavior and Social Movements. 3. Analyzes and explains fads, fashions, rumors, riots and mass behavior in light of theoretical frameworks. Studies social movements including blacks, women, labor, religions and students. Assesses meaning of contemporary revolutionary movements in Third World countries against sociological interpretations of historic French, Russian and Chinese Revolutions. *Prerequisite:* SOC 1000 or equivalent.

3200. Sociology of Religion. 3. Introduces various ways sociologists interpret religion. Explores the nature of relationships between religion and society. *Prerequisite:* SOC 1000 or equivalent.

3400 [4200]. Deviant Behavior. 3. Examines theory and research relevant to understanding deviant behavior in general and specific types of individual and subcultural deviancy. Cross listed with CRMJ 3400. *Prerequisite:* SOC 1000 or equivalent.

3500. Sociology of Gender. 3. Explores gender through a cultural and structural approach. The cultural approach emphasizes the variability in social expectations for men and women across time and place; the structural approach analyzes the effect of social institutions such as family, government, education, and the economy of gender. *Prerequisites:* SOC 1000 and junior or senior standing.

3550. Medical Sociology. 3. Considers sociological contributions to diagnosis and treatment of illness. Studies social organization of health professions and agencies. *Prerequisite:* SOC 1000 or equivalent.

3605. Sociology of Education. 3. An introductory overview of the principal areas of inquiry in the field. Students learn relevant theories and concepts, principal methodological approaches as well as important current issues in education. Comparative analysis may focus on historical comparisons, national/global comparisons, U.S. regional, and/or variant educational systems at the local level. *Prerequisite:* SOC 1000 or equivalent.

3880. Political Sociology. 3. Study of political theory, political organization, political mobilization, the state, nation-building, national identity, post-nationalism, the relationship between the state and markets, historic formation of the nation-state, and the changing role of the state in a global context. *Prerequisite:* SOC 1000, and junior/senior standing.

3900 [3700]. Sociological Theory. 3. Examines the emergence and development of sociological theory in the writings of thinkers such as Marx, Durkheim, and Weber. Explores continuities and discontinuities between the classical period of sociological theory and contemporary schools such as functionalism, conflict theory, neo-Marxian theories, symbolic interactionism, phenomenonlogy, and rational choice/exchange theory. *Prerequisite:* Nine credit hours of sociology.

3950. Environmental Sociology. 3. Explores how ecology, technology, politics, economics, and culture intersect. By analyzing key contemporary environmental debates, students will develop an understanding of sociological analyses, and the impact of social life on our environment, as well as the effect of the environment on social life. Topics covered include: the environmental movement; sustainable development; developing nations and their environment; capitalism and technology; and environmental justice. Cross listed with ENR 3950. *Prerequisite:* SOC 1000.

4020 [4560]. Sociology of Work. 3. Examines social organization of work—especially in response to change in technology, demands for equal opportunity, size and goals of firms and desires for meaningful work. Historically and comparatively analyzes work-life experiences shaping of labor markets and role of collective action. Explores impact of the labor process on distribution of society's material and symbolic rewards. Dual listed with SOC 5020. *Prerequisite:* SOC 1000, MGT 3210 or ECON 1010.

4050 [4000]. Social Inequality. 3. Focuses on the structure and consequences of unequal access to political, economic and social benefits in the U.S. and the world. Critically examines institutional arrangements that perpetuate and are supported by inequality and stratification, as well as patterns of social mobility. Dual listed with SOC 5050. *Prerequisites*: SOC 1000 and junior standing.

4095 [3090]. Sociological Research Methods. 4. [WC◀▶COM3] Examine the design and conduct of social research. Students will complete a research prospectus, including formulating a sociological research question, developing hypotheses, conducting a literature review, surveying prospective data, speculating about potential findings, and discussing implications. This course satisfies the USP 2015 Communication 3 and USP 2003 WC requirements. *Prerequisites:* STAT/SOC 2070, junior standing in sociology major, completion of WB/COM2, and SOC 3900.

4110. Sociology of International Development. 3. [WC,G◀▶COM3] Surveys development studies and rural change, including case studies of deliberate change efforts toward industrialization. Includes peasant modes of food production, daily life in subsistence, agriculture, shifts to commercial agriculture and global economy, ethical and critical issues of induced change and different approaches to development process and outcomes. Cross listed with INST 4110. *Prerequisites:* SOC 1000 or ANTH 1200; SOC 3000 recommended.

4160 [4150]. Sociology of Aging. 3. The process of aging from the individual to the societal level is the focus of the course. Consequences of this process such as the increase in the number of elderly, retirement and health are examined from the major social institutions, the relationships between these institutions and American society as a whole. Dual listed with SOC 5160. *Prerequisite:* 6 hours of sociology (including SOC 1000) and at least junior standing.

4300. The World System. 3. Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with SOC 5300. Cross listed with POLS/INST 4300. *Prerequisite:* SOC 1000 or ANTH 1200 or equivalent political science, international studies, or social science course. (Normally offered once a year)

4350. Sociology of Law. 3. A consideration of sociological concepts such as inequality, stratification, social control and social change in an analysis of the law and legal institutions. Topics include: the role of the police, lawyers, judges, and juries; race, sex, age, and sexuality discrimination and civil rights; free speech, and toxic torts. Cross listed with CRMJ 4350; dual listed with SOC 5350.
Prerequisites: SOC 1000 and upper division status.

4370. Global Political Economy. 3. [G◀▶(none)] Examines the interaction of politics and the economy at the global level. Evaluates how political and economic decisions of one country or groups of countries affect institutions and life circumstances in others. Assesses the causes of consequences of globalization as rooted in political economy. Cross listed with INST 4370. *Prerequisites:* SOC 1000 and junior standing or SOC 3000.

4440. Deviance and Social Control. 3. In-depth examination of theory and research on the social construction and social control of deviance. Dual listed with SOC 5440. *Prerequisite:* 9 hours of SOC courses and upper division standing.

4500. Sociology of Organizations. 3. Complex organizations have been described as the dominant feature of modern societies. Organized on the basis of bureaucratic modes of administration, they dominate contemporary societal institutions, such as the economy, the polity, education, religion, and the military. This course investigates basic structures and processes of all types of complex organizations. *Prerequisites:* 6 hours of SOC including SOC 1000 and junior/senior or graduate student standing.

4650. Urban Sociology. 3. Considers growth of metropolis and its impact upon modern life. Dual listed with SOC 5650. *Prerequisite:* SOC 1000 and junior standing. (Offered based on sufficient demand and resources)

4680. Shanghai: Past & Present. 3. [CS,G◀▶(none)] Lectures, fieldtrips, and other cultural activities are all incorporated into the curriculum to help students learn

about the political, economic and cultural development in 21st century China. Cross listed with INST 4680.

4700. Science and Modern Society. 3. Leads students to consider how science is a social phenomenon in its practice and in its knowledge by examining the history, culture and methods in science. *Prerequisite:* 6 hours of social science.

4805. Principles of Population. 3. Considers population structure and demographic transition, with applications to topics such as global population growth, population aging, health, family, migration, urbanization, environment. Dual listed with SOC 5805. Prerequisites: SOC 1000 or equivalent and SOC 2070 or STAT 2070 or equivalent.

4850. Conference. 1-6 (Max. 6). Considers topics of current sociological interest in consultation with a faculty member. *Prerequisites:* senior standing and 15 hours of sociology.

4890. Special Topics in____. 1-3 (Max. 6). Accommodates seminar series and/or course offering by visiting faculty whose subject matter is not included in other courses. *Prerequisites:* junior standing and consent of department.

4900. Seminar. 3-6 (Max. 6). Considers special topics of current sociological interest. May be repeated for maximum of 6 hours credit when topic of seminar is different. *Prerequisite:* consent of instructor.

4970. Sociology Internship. 3. Students gain practical experience in the application of principles learned in sociology courses. Students work with the internship coordinator to select a site and faculty supervisor; intern approximately six hours per week in the host organization; and complete readings and written assignments which reflect the student's work. Satisfactory/Unsatisfactory Only. *Prerequisites:* sociology major or minor with a minimum of junior standing and the completion of SOC 1000, and two additional sociology courses.

5000. Advanced Sociological Theory. 3. A consideration of the nature of theory and the major theoretical perspectives in sociology. Prerequisite: SOC 3900 or equivalent.

5020. Sociology of Work. 3. Examines social organization of work-especially in response to change in technology, demands for equal opportunity, size and goals of firms and desires for meaningful work. Historically and comparatively analyzes work-life experiences shaping of labor markets and role of collective action. Explores impact of the labor process on distribution of society's material and symbolic rewards. Dual listed with SOC 4020. *Prerequisite:* SOC 1000, MGT 3210 or ECON 1010.

5050 [4000]. Social Inequality. 3. Focuses on the structure and consequences of unequal access to political, economic and social benefits in the U.S. and the world. Critically examines institutional arrangements that perpetuate and are supported by inequality and stratification, as well as patterns of social mobility. Dual listed with SOC 4050.

5070. Statistical Methods for the Social Sciences. 3. General statistical analyses and their application to the social sciences. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs are utilized. Credit cannot be earned in more than one of the following courses: STAT 2110, 3050, 5050, 5060, 5070, 5080. Cross listed with STAT 5070. *Prerequisite:* one course in statistics (all introductory courses except STAT 2000).

5100. Advanced Social Research Methods. 3. In-depth survey of research concepts and methods with emphasis on application that culminates in the designing and execution of a research project by the student. *Prerequisite:* SOC 5070 or equivalent.

5140. The Family. 3. Two major themes of the course are change experienced by the family institution and the centrality of the family in America today. Subjects that are covered include: A brief history of the family in the United States, kinship, family structure, mate-selection, marriage, divorce, and socialization. Dual listed with SOC 4140. *Prerequisite:* 6 hours in sociology including SOC 1000 and at least junior standing.

5160. Sociology of Aging. 3. The process of aging from the individual to the societal level is the focus of the course. Consequences of this process such as the increase in the number of elderly, retirement and health are examined for the major social institutions, the relationships between these institutions and American society as a whole. Dual listed with SOC 4160. *Prerequisite:* 6 hours of sociology including SOC 1000 and at least junior standing.

5200. Conference. 1-8 (Max. 8). Consideration of topics of current sociological interest in consultation with a member of the faculty. *Prerequisite:* consent of instructor.

5250. Seminar. 3 (Max. 12). Consideration of topics of sociological interest in the content of a graduate seminar. Cannot be dual-listed with any course below the 5000 level. May be repeated for credit when the topic of the seminar is different. *Prerequisite:* consent of instructor.

5300. The World System. 3. Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with SOC 4300 Cross listed with POLS/INST 5300. *Prerequisite:* SOC 1000 or ANTH 1200 or equivalent political science, international studies, or social science course.

5350. Sociology of Law. 3. A consideration of sociological concepts such as inequality, stratification, social control and social change in an analysis of the law and legal institutions. Topics include: the role of the police, lawyers, judges, and juries; race, sex, age, and sexuality discrimination and civil rights; free speech, and toxic torts. Cross listed with CRMJ 4350; dual listed with SOC 4350.

5440. Deviance and Social Control. 3. In-depth examination of theory and research on the social construction and social control of deviance. Dual listed with SOC 4440. *Prerequisite:* graduate standing.

5540. Stratification and Inequality. 3. In-depth survey of sociological theory and research on substantive issues such as social class structure, racial/ethnic relations, and gender stratification. *Prerequisite:* graduate standing.

5650. Urban Sociology. 3. Considers growth of metropolis and its impact on modern life. Dual listed with SOC 4650. *Prerequisite:* SOC 1000 or equivalent.

5805. Principles of Population. 3. Considers population structure and demographic transition, with applications to topics such as global population growth, population aging, health, family, migration, urbanization, environment. Dual listed with SOC 4805. Prerequisites: SOC 1000 or equivalent and SOC 2070 or STAT 2070 or equivalent.

5900. Practicum in College Teaching. 1-3 (Max. 3). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 12). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). The course is designed to provide an enrichment experience in a variety of topics. Note: Credit in this course may not be included in a graduate program of study for degree purposes. Offered S/U only. *Prerequisite:* graduate standing.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5990. Internship. 1-12 (Max. 24). *Prerequisite:* graduate standing.

Department of Statistics

327 Ross Hall, 766-4229
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Web site: www.uwyo.edu/stats
Department Head: Ken Gerow

Professors:

RICHARD ANDERSON-SPRECHER, B.A. Carleton College 1974; M.A. University of Minnesota 1976; Ph.D. University of Iowa 1990; Professor of Statistics 2006, 1990.

STEPHEN L. BIEBER, B.S. University of California-Davis 1971; M.A. University of California-Berkeley 1977; Ph.D. 1979; Professor of Statistics 1990, 1979.

KENNETH G. GEROW, B.S. University of Guelph, Canada 1981; M.Sc. 1984; Ph.D. Cornell University 1992; Professor of Statistics 2007, 1993.

BURKE GRANDJEAN, B.A. Rice University 1971; M.A. University of Texas-Austin 1973; Ph.D. 1976; Professor of Statistics and Sociology 1990; Executive Director, WYSAC 2004.

TIMOTHY J. ROBINSON, B.S. James Madison University 1989; M.S. Virginia Polytechnic Institute and State University 1994; Ph.D. 1997; Professor of Statistics 2012.

Associate Professors:

SNEHALATA V. HUZURBAZAR, B.A. Grinnell College 1984; M.A. Vanderbilt University 1988; Ph.D. Colorado State University 1992; Associate Professor of Statistics 2001, 1995.

SHAUN S. WULFF, B.S. Montana State University 1991; M.S. 1994; Ph.D. Oregon State University 1999; Associate Professor of Statistics 2005, 1999.

Academic Professional Lecturer

Scott Crawford, B.S. Southern Utah University 2004; M.S. Brigham Young University 2006; Ph.D. Texas A&M University 2012; Academic Professional Lecturer 2012.

Adjunct Professors:

Legg, L. McDonald, T. McDonald, Manly, Nychka, Sain

Emeriti Faculty:

Robert S. Cochran

The curriculum in statistics includes a firm foundation in mathematics and computer science, in addition to course work in statistical theory and methodology. Statistics majors are also required to obtain a minor in an area of application. The nature of statistical work is to design and analyze research projects through the application of the principles of mathematics, computer science, and statistics. The student who wishes to make valid inferences from empirical data will find the field of statistics fascinating and rewarding.

The study of statistics as a separate professional field is comparatively recent. The wide demand for graduates with special training in research and development techniques has fostered development of statistical curricula in colleges and universities. A pioneer in this field, the University of Wyoming is one of the few schools in the nation where a coordinated undergraduate training program in statistics is available.

We expect that students graduating with a statistics degree will be able to: 1) recognize the importance of variation and uncertainty in the world, 2) understand how statistics improves decisions when faced with uncertainty, 3) become proficient with a broad range of statistical tools, 4) develop critical thinking skills that enable application of statistics in new and unusual settings, and 5) communicate effectively. With these skills, graduates will be able to work effectively as statistical professionals and, if desired, successfully pursue further training at the master's and doctorate levels.

Graduates with statistical training are employed in a broad spectrum of areas which include the business world, the sciences (social, biological, physical and health), as well as engineering and education. For this reason, an area of application is required of each student.

The statistics department also offers graduate programs leading to a minor in statistics, and to a Master of Science (Plan A, Plan B), and Doctor of Philosophy in statistics.

Undergraduate Major

In addition to university and college requirements, requirements for statistics majors include:

A. Statistics ..... at least 30
2010/2050/2070/4220 3-4
2110/3050/5050/5060/5070/5080 3
4015, 4025, 4255, 4265 12
Optional from 4045, 4070, 4115, 4155, 4300, 4350, 4360, 4370, 4460, 4880, 5320 9
Senior thesis 4870 3

B. Mathematics 2200, 2205, 2210, 2250 15

C. Computer science 1010 and 1030 6

D. Electives—chosen so that at least 42 hours are at the 3000/4000/5000 level

Total hours: at least 120

Typical Freshman Year for Statistics Majors

Freshman Year: Fall

ECON	1010	3
ENGL	1010	3
MATH	2200	4
POLS	1000	3
Biological, physical or earth science		4
Physical Activity and Health requirement		1
	Total Hrs.	***18***

Freshman Year: Spring

ECON	1020	3
University Studies		3
MATH	2205	4
STAT 2010/2050/2070/4220		3-4
Biological, physical, or earth science		4
	Total Hrs.	***17-18***

Note: For several entry level courses such as STAT 2010, 2050, 2070 and 4220, a student cannot receive credit for more than one of these courses. The same is true for the second courses 2110, 3050 and 5050, 5060, 5070, 5080.

Statistics Minor

The following courses are required for a statistics minor:

MATH	1400	3
STAT	2010/2050/2070/4220	3-4
STAT	3050	3

And 9 additional hours from the following:

STAT	4015	3
STAT	4025	3
STAT	4045	3
STAT	4070	3
STAT	4115	3
STAT	4155	3
STAT	4255	3
STAT	4265	3
STAT	4350	3
STAT	4360	3
STAT	4370	3
STAT	4300	3
STAT	5320	3
	Total Hrs.	***18-19***

Graduate Study

The Department of Statistics offers graduate programs leading to a minor in statistics, to a master of science in statistics (Plan B Option 2), to a master of science in applied statistics (Plan B Option 1), and to a doctor of philosophy in statistics. Students wishing to pursue a master of science in statistics with a thesis option

(Plan B), should contact the department directly. The minor is designed to enhance the M.S. or Ph.D. program of any student enrolled in one of the graduate programs at the University of Wyoming. All of these programs emphasize the understanding and application of a broad variety of statistical methods on real projects. Students will be provided with numerous opportunities to perform analyses and communicate findings. The M.S. and Ph.D. programs in statistics are grounded in statistical theory.

Program Specific Admission Requirements

The prerequisite for admission to graduate study is an undergraduate degree from an accredited institution, including work in mathematics through calculus III, Linear Algebra and at least one second-level class in statistical methods. Prospective students are encouraged to have had Math Analysis and upper level introduction to probability and mathematical statistics. Test scores from the GRE and TOEFL exams are required. The minimum score for the TOEFL is 600 (100 Internet-based Test) or for IELTS minimum score is 6.0. Students who do not have prerequisites in mathematics and statistics may make up this deficiency at the beginning of their graduate program; however, such work does not count toward graduation requirements.

Program Specific Degree Requirements

Minor

Twelve hours at the 4000 or 5000 level with the exception of STAT 4220, 5000, and 5185.

Master's Program
Plan B (Option 1)
Master of Science in Applied Statistics

Profile

The Master's Program in Applied Statistics will give the student an extensive and broad background in statistical methods, data analysis, and written and oral presentation skills. This degree is a terminal experience in graduate statistical education and should not be viewed as preparatory for entrance into a Ph.D. program in statistics. Graduates will have the necessary background to work as data management specialists, statistical analysts, and as project managers within a wide range of research organizations.

Coursework

In addition to the general requirements of the university all candidates for the MS (Plan B – Option 1) degree must successfully take and complete:

Required: 22 credit hours
- STAT 5015 Regression Analysis
- STAT 5025 Design and Analysis of Experiments
- STAT 5155 Fundamentals of Sampling
- STAT 5255 Mathematical Theory of Probability
- STAT 5265 Introduction to the Theory of Statistics
- STAT 5380 Bayesian Data Analysis
- STAT 5470 Data Analysis

Electives: a minimum of 15 credit hours in other acceptable graduate courses. Acceptable courses include statistics courses numbered 5000 or higher, excepting 5000, 5050, 5060, 5070, 5080, and 5185.

Total: 37 credit hours

Graduation Requirements: (1) successful completion of coursework and (2) a data analysis project (Plan B paper)

Plan B (Option 2)
Master of Science in Statistics

Profile

The Master's Program in Statistics will give the student a solid background in statistical theory and in statistical methods, and in technical reading and writing skills. Graduates will have the necessary background to further pursue the Ph.D. degree, to work in industrial or research organizations, or to teach in community college level institutions or as academic professionals in four-year-college and universities.

Coursework

In addition to the general requirements of the university all candidates for the MS (Plan B – Option 2) degree must successfully take and complete:

Required: 18 credit hours
- STAT 5210 Statistical Methods 1
- STAT 5220 Statistical Methods 2
- STAT 5380 Bayesian Data Analysis
- STAT 5510 Distribution Theory
- STAT 5520 Inference I

One course from the following: 3-4 credit hours
- STAT 5025 Design and Analysis of Experiments
- STAT 5230 Statistical Methods 3

Electives: a minimum of 15 credit hours in other acceptable graduate courses. Acceptable courses include statistics courses numbered 5000 or higher, excepting 5000, 5050, 5060, 5070, 5080, and 5185.

Total: 36-37 Credit Hours

Graduation Requirements: successful completion of coursework and a passing grade on a two-day qualifying examination (Plan B paper)

Doctoral Program
Program for a Doctor of Philosophy in Statistics

Profile

The Ph.D. Program in Statistics will give the student a solid background in statistical theory and in statistical methods, in technical reading and writing skills, and in conducting independent research. Most graduates from our doctoral program have been employed as tenure-track faculty at other universities; however, they also will have the necessary background to work as lead researchers in industrial and research organizations.

Coursework

In addition to the general requirements of the university all candidates for the PhD degree must successfully take and complete:

Required: 46 credit hours
- STAT 5210 Statistical Methods 1
- STAT 5220 Statistical Methods 2
- STAT 5230 Statistical Methods 3
- STAT 5380 Bayesian Data Analysis
- STAT 5510 Distribution Theory
- STAT 5520 Inference I
- STAT 5530 Inference II
- STAT 5540 Large Sample Theory
- STAT 5620 Theory of Linear Models
- STAT 5630 Multivariate Analysis
- STAT 5660 Computational Statistics
- STAT 5670 Mixed Models
- STAT 5680 Bayesian Statistics
- STAT 5810 Seminar (3 hours; 3 presentations)

Substitutions in the list of required courses are acceptable if listed courses are unavailable and the substitution is approved by the statistics department. The remaining 26 hours of doctoral work are typically filled in part by other graduate level statistics and mathematics courses. Students who enter the program lacking a course in Mathematical Analysis or the equivalent should take MATH 4200 in their first year. MATH 4200 may be counted as part of the doctoral degree program.

Graduation Requirements

1) At the end of the first year in the doctoral program each student must take a comprehensive qualifying examination. If needed a student may retake this examination. A passing grade on this examination is mandatory for continuance in the doctoral program. 2) After completing this examination a student with the assistance of her/his adviser will be expected to form a doctoral committee. This committee will determine which courses are to be included in the Graduate Level Statistics electives, and will set the conditions of and conduct the preliminary examination. A passing grade on this examination is mandatory for official admittance into the doctoral program. 3) The student must write and successfully defend a dissertation research project. The specific conditions of the dissertation project are to be determined by each student's doctoral committee, but should consist of original research suitable for publication.

Statistics (STAT)

A computerized prerequisite check is run prior to the start of the fall and spring semesters. Students who are pre-registered for a 2000-level STAT course but have not satisfied the prerequisites at the time of the check will be automatically dropped from the course.

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2000. Statistics and the World. 3. [QB◀▶(none)] Discusses statistical reasoning and methods as related to today's society. Emphasizes ideas rather than specific techniques. Focuses on real examples of the use (and misuse) of statistics. Includes sampling, experimentation, descriptive statistics, elementary probability and statistical inference. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2010. Statistical Concepts for Business and Management Science. 4. [QB◀▶(none)] Provides majors in various departments of the College of Business with training in basic statistical concepts, emphasizing application to business problems. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* grade of C or better in MATH 1400.

2050. Fundamentals of Statistics. 4. [QB◀▶Q] Presents central ideas and fundamental techniques of statistical inference on applications in the biological sciences. Includes probability models and inferences for means, variances and parameters of discrete distributions. Introduces statistical computer packages in biweekly labs. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2070. Introductory Statistics for the Social Sciences. 4. [QB◀▶Q] Presents central ideas of descriptive statistics and statistical inference, as applied to questions in social sciences. Includes graphs, averages, sampling, estimation, hypothesis-testing and relationships between variables. Introduces associated computer skills. Credit cannot be earned in more than one of STAT 2010, 2050, 2070, 4220, 5000. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2110. Statistical Methods for Business and Management Science. 3. Provides majors in various departments of the College of Business with training in use of statistical analysis techniques as they apply to business problems. Credit cannot be earned in more than one of the following: STAT 2110, 3050 and 5050, 5060, 5070, 5080. *Prerequisite:* STAT 2010.

3050. Statistical Methods - General. 3. Provides undergraduate majors in the Colleges of Arts and Sciences, Agriculture and Education with training in statistical methodology for multiple variable situations. Integrates computer analysis packages such as R MINITAB, SAS and SPSSX into statistical topics. Credit cannot be earned in more than one of the following courses: STAT 2110, 3050 and 5050, 5060, 5070, 5080. *Prerequisite:* STAT 2050, 2070 or equivalent.

4015 [4010, 4410]. Regression Analysis. 3. Contains standard topics, as well as some newer and more unconventional ones. Oriented towards analysts who use computer packages for problem solutions. Includes balance of application and theory. Dual listed with STAT 5015. *Prerequisite:* STAT 3050 or equivalent.

4025 [4020, 4310]. Design and Analysis of Experiments I. 3. Reviews design and analysis of one-factor experiments and introduces multifactor experiments, Latin squares, nested designs and random effects. Includes topics such as polynomial response curves, trend analysis, split plots and incomplete blocks as time permits. Dual listed with STAT 5025. *Prerequisite:* choice of STAT 3050 or equivalent.

4045 [4040]. Categorical Data Analysis. 3. Applied methods for analyzing associations when some or all variables are measured in discrete categories, not continuous scales. Topics include the binomial, multinomial, and Poisson probability models, parameter estimation and hypothesis-testing about proportions, measures of association and tests for contingency tables, logistic regression, and log-linear models. Dual listed with STAT 5045. *Prerequisite:* STAT 2110, 3050, 5050, 5060, 5070 or 5080.

4070. Causal Models. 3. Applications of least-squares and iterative maximum-likelihood methods for drawing cause and effect conclusions from nonexperimental data. Topics include regression-based path analysis, reciprocal causation, confirmatory factor analysis, measurement error, and structural equation models with unmeasured (latent) variables. Cross listed with SOC 4070. *Prerequisite:* one of STAT 3050, 4015, 5050, 5060, 5070, 5080 or equivalent (regression methods).

4115 [4110]. Time Series Analysis and Forecasting. 3. An applied introduction to time series and forecasting. Brief coverage of time series regression, decomposition methods, and smoothing will lead into a more detailed coverage of Box-Jenkins (ARIMA) modeling. Computer analyses using MINITAB and SAS will be an important part of the course. Cross listed with ECON 4115; dual listed with STAT 5115. *Prerequisites:* STAT 3050 or equivalent; STAT 4015/5015 recommended.

4155 [4150]. Fundamentals of Sampling. 3. Develops methodology of simple random sampling, stratified sampling, and multistage sampling. Provides applications related to physical, social, and biological sciences. Discusses single and two-variable estimation techniques. Presents estimation based on subsamples from subpopulations. Dual listed with STAT 5155. *Prerequisite:* choice of STAT 2010, 2050, 2070 or equivalent.

4220 [4020]. Basic Engineering Statistics. 3. Introduces probability models, properties of distributions, statistical inference and development of statistical models for physical and engineering sciences. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* MATH 2205, 2355 or equivalent.

4255 [4250]. Mathematical Theory of Probability. 3. Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Dual listed with STAT 5255; cross listed with MATH 4255. *Prerequisite:* grade of C or better in MATH 2210. (Offered fall semester)

4265 [4260, 4010]. Introduction to the Theory of Statistics. 3. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis

testing. Dual listed with STAT 5265; cross listed with MATH 4265. *Prerequisite:* STAT/MATH 4255.

4300. Applied Multivariate Analysis. 3. The application of multivariate statistical methods in behavioral science research. Topics include: multivariate regression, canonical correlation, discriminate analysis, factor analysis and multidimensional scaling. A wide range of computer assistance is incorporated. Dual listed with STAT 5300. *Prerequisite:* STAT 3050 or equivalent.

4350. Survey Construction and Analysis. 3. Examines the issues surrounding the construction (item wording, test theory, and numerical scales), assessment (sampling and psychometrics), and analysis (item analysis, qualitative data analysis, and factor analysis) of survey instruments. Roughly a third of the course is devoted to each of these areas. Dual listed with STAT 5350. *Prerequisite:* STAT 3050.

4360. Spatial Statistics. 3. Emphasis is on a generalized linear model approach to the modeling of continuous data, placing model building and the various kriging methods into a single conceptual framework. Dual listed with STAT 5360. *Prerequisite:* STAT 4015.

4370. Survival Analysis. 3. Introduction to the modeling of time to event data as it arises in epidemiological and medical research. Topics include parametric and non-parametric estimation for censored data without covariates, and for data with covariates, the proportional hazards regression model, additive hazards regression model and parametric regression models. Dual listed with STAT 5370. *Prerequisites:* STAT 4015 and 4025.

4460. Statistical Software [5480]. 1. An introduction to the various statistical software programs currently in use at the University of Wyoming. Topics will include the structure of each language, I/O, programming the basic statistical applications, and a comparison of the other languages. *Prerequisite:* 9 hours in statistics beyond introductory.

4870. Senior Thesis. 3. Encompasses senior thesis research project under faculty member guidance and supervision. Faculty sponsorship must be obtained prior to registration. *Prerequisites:* 18 hours in statistics and senior standing.

4880 [4790]. Problems in Statistics. 1-4 (Max. 9). Encourages individual initiative on part of students who work on extending their knowledge through library research. *Prerequisites:* senior standing, 8 hours in statistics and consent of instructor.

5000. Statistical Analysis for Research Workers. 3. Covers basic concepts of data collection and statistical inference. The material applies to experimental work when one or two samples have been drawn and one variable has been measured, rather than sophisticated mathematical development, a conceptual statistical approach is utilized in presenting material. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* graduate standing.

5015. Regression Analysis. 3. Contains standard topics, as well as some newer and more unconventional ones. Oriented towards analysts who use computer packages for problem solutions. Includes balance of application and theory. Dual listed with STAT 4015. *Prerequisite:* STAT 3050 or equivalent.

5025. Design and Analysis of Experiments I. 3. Reviews design and analysis of one-factor experiments and introduces multifactor experiments, Latin squares, nested designs, and random effects. Includes topics such as polynomial response curves, trend analysis, split plots and incomplete blocks as time permits. Dual listed with STAT 4025. *Prerequisite:* STAT 3050 or equivalent.

5045. Categorical Data Analysis. 3. Applied methods for analyzing associations when some or all variables are measured in discrete categories, not continuous scales. Topics include the binomial, multinomial, and Poisson probability models, parameter estimation and hypothesis-testing about proportions, measures of association and tests for contingency tables, logistic regression, and log-linear models. Dual listed with STAT 4045. *Prerequisite:* two courses in statistics.

5050. Statistical Methods for the Biological Science. 3. General statistical analyses and their application to the biological and behavioral sciences. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs will be utilized. Credit cannot be earned in more than one of the following courses: STAT 3050, 5050, 5060, 5070. Cross listed with ZOO 5050. *Prerequisite:* one course in statistics (all introductory courses except 2000).

5055. Statistical Methods for the Biological Sciences II. 3. The statistical toolkit (regression and ANOVA-driven) of methods applicable to the biological and behavioral sciences will be extended to include multiple logistic regression, power and sample size considerations, and computer-intensive methods such as bootstrapping and randomization tests, which will considerably expand the repertoire of methods that a person could use. *Prerequisite:* STAT 5050 or equivalent.

5060. Statistical Methods In Psychology. 3. General statistical analyses and their application to psychology. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs will be utilized. Credit cannot be earned in more that one of the following courses: STAT 2110, 3050, 5050, 5060, 5070, 5080. Cross listed with PSYC 5060. *Prerequisite:* one course in statistics (all introductory courses except 2000).

5070. Statistical Methods for the Social Sciences. 3. General statistical analyses and their application to the social sciences. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs will be utilized. Credit cannot be earned in more that one of the following courses: STAT 2110, 3050, 5050, 5060, 5070. Cross listed with SOC 5070. *Prerequisite:* one course in statistics (all introductory courses except STAT 2000).

5080. Statistical Methods for the Agricultural and Natural Resource Sciences. 3. Brief review of statistical principles. Use of SAS programming. Numerous analysis of variance techniques along with commonly-used experimental designs. Multiple mean comparison, linear contrasts, power of F test, simple linear regression, polynomial regression, analysis of covariance, and some categorical data techniques for students in the agriculture and natural resources sciences. Credit cannot be earned in more that one of the following courses: STAT 2110, 3050, 5050, 5060, 5070, 5080. Cross listed with ENTO 5080. *Prerequisite:* STAT 2050 or equivalent.

5115. Time Series Analysis and Forecasting. 3. An applied introduction to time series and forecasting. Brief coverage of time series regression, decomposition methods, and smoothing will lead into a more detailed coverage of Box-Jenkins (ARIMA) modeling. Computer analysis using MINITAB and SAS will be an important part of the course. Dual listed with STAT 4115; cross listed with ECON 5115. *Prerequisites:* STAT 3050 or equivalent; STAT 4015/5015 recommended.

5155. Fundamentals of Sampling. 3. Develops methodology of simple random sampling, stratified sampling, and multistage samples.

Provides applications related to physical, social, and biological sciences. Discusses single and two-variable estimation techniques. Presents estimation based on subsamples from subpopulations. Dual listed with STAT 4155. *Prerequisite:* STAT 2070 or equivalent.

5185. Analysis of Data. 3. Focuses on data collection, analysis, interpretation, and communication, using contexts relevant to everyday situations. Topics chosen integrate well with the concerns of middle-level teachers and connect with such curriculum areas as health, science, and social studies. This course is not a research methods course. Cross listed with NASC 5180. *Prerequisites:* graduate standing in either degree or non-degree seeking status, and acceptance into the Middle-level mathematics program.

5210. Statistical Methods I. 3. Introduction and Overview of Statistical Methods aimed at preparing students for Regression, Design, Linear Models and generalized linear models courses at the graduate level. Students also get an introduction to programming in R/S-Plus and SAS. *Prerequisite:* concurrent registration in STAT 5510, will form the basis of the 1st semester in the grad school.

5220. Statistical Methods II. 3. Introduction and Overview of Statistical Methods aimed at preparing students for advanced topics courses in Statistics. Also included is an introduction to programming in SAS and R/Splus. *Prerequisites:* STAT 5210 and concurrent registration in STAT 5520.

5230. Statistic Methods III. 4. Continuation of topics in Statistical Methods from 5220; aimed at preparing students for advanced topics courses in Statistics. *Prerequisites:* STAT 5220 and 5520.

5255. Mathematical Theory of Probability. 3. Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence and conditional probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Dual listed with STAT 4255; cross listed with MATH 5255. *Prerequisite:* grade of C or better in MATH 2210 or 2355.

5265. Introduction to the Theory of Statistics. 3. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis testing. Dual listed with STAT 4265; cross listed with MATH 5265. *Prerequisites:* STAT 4255/5255.

5300. Applied Multivariate Analysis. 3. The application of multivariate statistical methods in behavioral science research. Topics include: multivariate regression, canonical correlation, discriminate analysis, factor analysis and multivariate regression, canonical correlation, discriminate analysis, factor analysis and multidimensional scaling. A wide range of computer assistance is incorporated. Dual listed with STAT 4300. *Prerequisite:* STAT 5050, 5060, 5070, 5080.

5320. Design and Analysis of Experiments II. 3. Linear models included analysis of variance, analysis of covariance, and regression within its general framework. This is a basic course in the applications of these models containing the standard topics as well as some newer and more unconventional ones. The course is oriented toward the professional statistician who will be involved in the design and analysis of experiments. Extensive use is made of SAS and BMDP in the course. *Prerequisite:* STAT 4025 or 5225.

5350. Survey Construction and Analysis. 3. Examines the issues surrounding the construction (item wording, test theory, and numerical scales), assessment (sampling and psychometrics), and analysis (tem analysis, qualitative data analysis, and factor analysis) of survey instruments. Roughly a third of the course is devoted to each of these areas. Dual listed with STAT 4350. Prerequisite: STAT 3050.

5360. Spatial Statistics. 3. Emphasis is on a generalized linear model approach to the modeling of continuous data, placing model building and the various kriging methods into a single conceptual framework. Dual listed with STAT 4360. *Prerequisite:* STAT 4015.

5370. Survival Analysis. 3. Introduction to the modeling of time to event data as it arises in epidemiological and medical research. Topics include parametric and non-parametric estimation for censored data without covariates, and for data with covariates, the proportional hazards regression model, additive hazards regression model and parametric regression models. Dual listed with STAT 4370. *Prerequisites:* STAT 4015, 4025 and 4265.

5380. Bayesian Data Analysis. 3. Bayesian statistical methods for analyzing various kinds of data. Topics include basic Bayesian ideas and model formulation (priors, posteriors, likelihoods), single- and multiple-parameter models, hierarchical models, generalized linear models, multivariate models, survival models and an introduction to computation methods. *Prerequisites:* at least 2 semesters of calculus and one semester of statistics at or beyond the 4000 level.

5420. Linear Models. 3. An introduction to the theory of basic statistical linear models. Topics include: special matrix theory for statistics, multivariate normal distributions, distributions of quadratic forms, as well as estimation and hypothesis testing in the full rank and less than full rank models. *Prerequisite:* STAT 4015, 4025, 4265 and MATH 2250.

5430. Geostatistical Sampling and Ore Reserves Estimation. 3. Designed to provide general geostatistical analyses and their applications for spatial random variables and functions. Topics covered include variogram, cross validation, kriging, cokriging, sampling strategies, and both non-conditional and conditional simulations. Several geostatistics packages will be used to analyze real field data and students are encouraged to use their own data for practicing geostatistical applications. Examples are taken from geohydrology, soil science, crop science, mining, and various environmental studies. Cross listed with SOIL/GEOL 5430. *Prerequisite:* STAT 4015.

5450. Biological Sampling and Estimation of Animal Abundance. 3. A quantitative treatment of techniques useful in the biological sampling and estimation of animal abundance. Included are mark release methods, catch-effort methods, change in ratio methods, mortality and survival estimation, transect and quadrat sampling. *Prerequisite:* ZOO 4400.

5470. Data Analysis. 3. This course is designed to develop the skill of analyzing data sets using methods of classic statistical analysis, such as analysis of variance, regression, discrete models, descriptive analysis, non-parametrics, and multivariate methods. The focus will be on understanding the various models and methods, computer assisted data analysis, and communication of results (oral and written). *Prerequisite:* 12 graduate level hours in statistics (excluding STAT 5000).

5490. Statistical Consulting. 1. An introduction to the art and practice of statistical consulting. Topics include active listening, ascertaining client knowledge level and ability, determining appropriate methods of analysis given limitations, and organizing and managing a consulting session. *Prerequisite:* graduate standing in statistics, 15 hours in statistics.

5510. Distribution Theory. 4. Topics covered include probability theory, conditional probability, random variables, special distribution functions, functions of random variables, expectation, random samples, and limiting distributions. *Prerequisite:* MATH 2210, 3000 or MATH/STAT 4265.

5520. Inference I. 4. Topics covered include Properties of a random sample, Sufficiency principle, Likelihood principle, point estimation (mle, mom, Bayes estimators, etc. and methods for evaluating estimators), some interval estimation. *Prerequisite:* STAT 5510.

5530. Inference II. 3. Topics covered include methods used in Bayesian, Likelihood, Frequentist inference; some methods for robust inference and some large sample theory as needed. *Prerequisite:* STAT 5520.

5540. Large Sample Theory. 3. Treats various limiting techniques which can be used to predict the behavior of statistics computed from large data sets. The characteristic function is used in deriving the law of large numbers and various forms of the central limit theorem, including the multivariate normal case. The central and noncentral chi-square distributions are derived as the probability law for certain statistics in the limit. Other topics discussed include modes of probabilistic convergence, speed of convergence, and large sample approximation procedures. *Prerequisite:* STAT 5510.

5615. Time Series Analysis II. 3. A treatment of theory and application of ARIMA modeling of times series. Frequency domain analysis is also introduced. Additional topics will be selected from intervention analysis, transfer function (ARMAX) models, outlier analysis, vector ARIMA models, ARCH, GARCH, and state-space models, according to the interests and abilities of the class. *Prerequisites:* STAT 4015/5015, 4115 and 4265/5265.

5620. Theory of Linear Models. 3. A theoretical approach to estimation and testing in the general linear model. Topics include: special linear algebra results for statistics, parameterizations, estimability, least squares, best linear unbiased estimation, and testing linear hypotheses. *Prerequisite:* STAT 5630, 5520, MATH 4500.

5630. Multivariate Analysis. 3. The subject matter includes derivation of multi-variate normal distributions, the Wishart, and related sampling distributions, multivariate estimation, confidence regions, and hypothesis testing are covered including topics as Hotelling's T squared, profile analysis, discriminate analysis, factor analysis, and cluster analysis. *Prerequisite:* STAT 4265, MATH 2250.

5640. Generalized Linear Models (GLIM). 3. This class of models based on exponential family distributions provides a unifying framework for linear normal models, models for categorical data and for survival analysis. Modeling and inference relies on familiarity with exponential family distributions, maximum likelihood inference and likelihood ratio tests. *Prerequisite:* STAT 5520 and STAT 5420.

5650. Theory of Sampling. 3. Consists of the theory of simple random sampling, stratified sampling, multistage sampling, and regression and ratio estimation. Recent developments in sampling are presented. *Prerequisite:* STAT 4265, STAT 4155/5155.

5660. Computationally Intensive Methods in Statistics. 3. Advanced statistical inference often relies on methods which are computationally intensive. The basic methods include Newton-Raphson; the EM algorithm; bootstrap and other resampling procedures; kernel density estimators; Laplace's method, importance sampling and MCMC, and saddlepoint and Edgeworth approximations. *Prerequisite:* STAT 5520.

5670. Mixed Models. 3. An advanced treatment of models with fixed and random effects. Topics include: model definitions, least- squares, analysis of variance techniques, likelihood procedures, and computational applications. *Prerequisite:* STAT 5620.

5680. Advanced Bayesian Statistics. 3. Philosophical principles underlying Bayesian and non-Bayesian statistics. Decision theoretic foundations of Bayesian statistics including loss functions, minimaxity, and admissibility. Construction of conjugate prior distributions and non-informative prior distributions. Bayesian point estimation, hypothesis tests and credible sets. Computational tools for Bayesian problems including Markov chain Monte Carlo (McMC) and other methods for approximating posterior distributions with some emphasis on implementation via a programming language or statistical computing software. As time and interest permit: the normal linear model, non-normal models, hierarchical models, Bayesian model averaging, other topics. *Prerequisites:* STAT 5380; 5420 and 5520.

5810. Seminar. 1-2 (Max. 4). Research results are presented by statistics majors. (Faculty also present papers). *Prerequisite:* graduate status in statistics.

5820. Teaching of Statistics. 1 - 2. (Max 2). The following topics are presented and discussed: traditional and innovative teaching methods, assessment methods, the purpose of lectures and laboratories, in-class activities, projects, mathematics versus statistics, computer assistance, math anxiety, and group and one-on-one interaction guidelines. *Prerequisite:* consent of instructor.

5880. Advanced Problems. 1-8 (Max. 8). Intended to develop the graduate student's ability to expand his theoretical knowledge by using library materials and working under close supervision of a faculty member who is an expert in the area of study. *Prerequisite:* 12 hours in statistics and consent of instructor.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate status.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Graduate level course designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Graduate level course designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.

5990. Internship. 1-12 (Max 24). *Prerequisite:* graduate standing.

Theatre and Dance

205 Buchanan Center for the Performing Arts, 766-2198
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Web site: uwyo.edu/thd/
Department Head: Leigh Selting

Professors:

WILLIAM MISSOURI DOWNS, B.S. Northern Michigan University 1977; M.F.A. University of Illinois 1980; M.F.A. University of California-Los Angeles 1988; Professor of Theatre and Dance 2004, 1994.

LEE HODGSON, B.A. University of Wyoming 1977; M.A. 1980; M.F.A. California Institute of the Arts 1983; Professor of Theatre and Dance 2000, 1987.

MARSHA F. KNIGHT, B.F.A. University of Utah 1979; M.F.A. 1983; Professor of Theatre and Dance 1998, 1984.

LEIGH SELTING, B.A. University of Nebraska at Kearney 1983; M.F.A. University of Idaho 1985; Professor of Theatre and Dance 1999, 1989.

LOU ANNE WRIGHT, B.A. California State University-Northridge 1990; M.F.A. National Theatre Conservatory 1993; Professor of Theatre and Dance 2007, 1994.

Associate Professors:
CECILIA ARAGÓN, B.S. McMurry University 1991; M.A. University of New Mexico 1996; Ph.D. Arizona State University 2003; Associate Professor of Theatre and Dance 2011, 2005.
JENNIFER DECKERT, B.F.A. University of Utah 2003; M.F.A. 2005; Associate Professor of Theatre and Dance 2013, 2007.
CASEY KEARNS, B.A. Chadron State College; M.F.A. University of Kansas; Associate Professor of Theatre and Dance 2011, 2005.
MARGARET WILSON, B.A. University of Wyoming 1981; M.S. 1987; Ph.D. Texas Woman's University 2007; Associate Professor of Theatre and Dance 2008, 2005.

Assistant Professors:
SHARON HUIZINGA, B.A. University of Wyoming 1998; M.F.A. University of British Columbia 2012; Assistant Professor of Theatre and Dance 2013.
KEVIN INOUYE, B.A. Earlham College 1998; M.F.A. Virginia Commonwealth University 2012; Assistant Professor of Theatre and Dance 2014.

Adjunct Professor:
Neil F. Humphrey

Degrees Offered

The Department of Theatre and Dance offers curricula leading to the B.A. degree and the Bachelor of Fine Arts and courses which fulfill a part of University Studies and various colleges' requirements, including the College of Arts and Sciences.

Curricula

Students may not take a course for S/U credit to satisfy course requirements in the major. This does not apply to courses offered for S/U only. Requirements for students majoring in the areas of the department are indicated below.

Theatre

The study of theatre provides students with a broad understanding of the art of theatre appropriate to theatre's position as a fine art in a liberal arts college. The study of theatre is considered to provide a basis for more specialized theatre study in a graduate or professional school. The liberal arts education in theatre together with extensive experience in the production program also provides the foundation for a professional career in theatre, motion pictures, or television drama for those individuals with special desires and abilities. Secondary teaching certification in theatre can be obtained through this program of study.

Dance

The dance concentration within the Department of Theatre and Dance is designed to provide students with a broad foundation in the humanities and specific emphasis in performance and production aspects of dance. Students pursuing this course of study will have opportunities to attain technical competency in ballet and/or modern dance, to perform in yearly dance productions, to obtain practical experience in the fundamentals of teaching dance and to gain experience in technical theatre as an aid to dance production. The program seeks to provide a comprehensive view of dance as an artistically expressive medium, as well as a creative and recreational tool to human expression.

Students completing this program will qualify for more advanced private instruction as well as advanced academic instruction.

All dance students are matriculated into the BA degree. Students wishing to apply for the BFA in Dance Performance or BFA in Dance Science do so the second semester of their freshman year.

Programs

B.A. with Theatre Concentration

These are the required courses for a B.A. with Theatre Concentration:
Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2220	3
THEA	2800	3
THEA	3730	3
THEA	3740	3
THEA	3810	3
THEA	3820	3
THEA	4820	3
THEA	4930	3
THEA	4940	3

Theatre majors are limited to no more than 50 credits in the major field of which a minimum of 15 must be at the 4000-level.

B.A. with Dance Concentration

These are the required courses for a B.A. with Dance Concentration:
Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1021	1
THEA	1040	0.5
THEA	1200	3
THEA	1405	1
THEA	1420	1
THEA	1440	1
THEA	1450	1
THEA	2040	0.5
THEA	2050	1
THEA	2200	3
THEA	2480	1
THEA	3021	1
THEA	3100	3
THEA	3410	1
THEA	3420	1
THEA	3430	1
THEA	3440	1
THEA	3480	1
THEA	4010	4
THEA	4030	4
Plus 8 credits in any combination of 4010 and 4030		
THEA	4200	3
THEA	4250	2
THEA	4260	2
THEA	4880	1
BIOL	1010	4
HLED	1221	2
ZOO	2040	4

Bachelor of Fine Arts

This degree program in theatre and dance permits 60-70 credits in the major field. It is designed primarily for students who seek additional professional training in theatre and dance or who wish to enter M.F.A. graduate programs.

Students seeking the professional degree will be expected to meet degree requirements as specified by the College of Arts and Sciences. Students may substitute advanced theatre and dance courses for university electives.

For other requirements consult with the Department of Theatre and Dance.

Bachelor of Fine Arts
Theatre/English Concentration

This degree program permits a total of 60-70 credits in the major. It is designed primarily for those desiring to pursue professional education courses and certification to programs.

These are the required courses for a B.F.A. with Theatre/English Concentration:
Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2220	3
THEA	2800	3
THEA	3730	3
THEA	3740	3
THEA	3810	3
THEA	3820	3
THEA	4820	3
THEA	4830	3
THEA	4930	3
THEA	4940	3
ENGL	2000	6
ENGL	4000	9
ENGL	4110 or 4120	3

Bachelor of Fine Arts
Acting Concentration
(Preprofessional)

This degree program permits a total of 60-70 credits in the major. It is designed primarily for those desiring to pursue additional pre-professional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

These are the required courses for a B.F.A. with Acting Concentration:
Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	1700	2
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2160	2
THEA	2170	3
THEA	2220	3
THEA	3720	2
THEA	3730	3
THEA	3740	3
THEA	3750	3
THEA	3790	3
THEA	3950	3
THEA	4710	3
THEA	4720	3
THEA	4730	2
THEA	4820	3
THEA	4930	3
THEA	4940	3

and three hours from the following:

THEA	1410	1
THEA	1430	1
THEA	1450	1
THEA	1480	1

Bachelor of Fine Arts
Dance Performance Concentration
(Preprofessional)

This program permits a total of 71-74 credits in the major. It is designed primarily for students in dance who wish to pursue additional preprofessional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

The BFA in Dance Performance is a professionally oriented degree for students interested in a career of performing or choreographing In addition to specific course work, BFA students complete a senior project which provides summation and synthesis to their training. Admission to the BFA is by application only. Students will be required to submit an application no sooner than spring of their freshman year and interview during the end of the spring semester. All students admitted to the BFA program are considered on provisional status in their first year in the program, and are evaluated on a yearly basis on maintaining a 3.0 GPA in dance required courses, demonstrating appropriate progress in artistic and technical growth and active participation in the Department of Theatre and Dance productions and research. Students wishing to apply for the BFA in Dance Performance do so the second semester of their freshman year.

These are the required courses for a B.F.A. with Dance Performance Concentration:
Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1021	1
THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	1405	1
THEA	1420	1
THEA	1440	1
THEA	1450	1
THEA	2040	0.5
THEA	2050	1
THEA	2160 or	2
THEA	2800 or	3
THEA	3820	1
THEA	2200	3
THEA	2450	1
THEA	2480	1
THEA	3021	1
THEA	3100	3
THEA	3410	1
THEA	3420	1
THEA	3430	1
THEA	3440	1
THEA	3480	1
THEA	3490	1
THEA	4001	2
THEA	4010	4
THEA	4030	4

(Additional 8 credits in any combination of 4010 and 4030)

THEA	4200	3
THEA	4250	2
THEA	4260	2
THEA	4700	1
THEA	4880	1
THEA	4880	1
THEA	4950	3
	or	
THEA	4990	2
THEA	4990	1-3
	or	
AS	4990	1-3

The following courses outside the department are also required:

BIOL	1010	4
HLED	1221	2
ZOO	2040	4

Bachelor of Fine Arts
Dance Science Concentration
(Preprofessional)

This program permits a total of 78 credits in the major. It is designed primarily for students in dance who wish to pursue additional preprofessional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

The BFA in Dance Science is a professionally oriented degree for students interested in a career of dance research and wish to pursue some aspect of the science field in relation to dance. In addition to specific course work, BFA students complete a senior project which provides summation and synthesis to their training. Admission to the BFA is by application only. Students will be required to submit

an application no sooner than spring of their freshman year and interview during the end of the spring semester. All students admitted to the BFA program are considered on provisional status in their first year in the program, and are evaluated on a yearly basis on maintaining a 3.0 GPA in dance required courses, demonstrating appropriate progress in artistic and technical growth and active participation in the Department of Theatre and Dance productions and research. Students wishing to apply for the BFA in Dance Science do so the second semester of their freshman year.

These are the required courses for a B.F.A. with Dance Science Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1021	1
THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	1405	1
THEA	1420	1
THEA	1440	1
THEA	1450	1
THEA	2040	0.5
THEA	2050	1
THEA	2200	3
THEA	2480	1
THEA	3021	1
THEA	3100	3
THEA	3410	1
THEA	3420	1
THEA	3430	1
THEA	3440	1
THEA	3480	1
THEA	4010	4
THEA	4030	4

(Additional 8 credits in any combination of 4010 and 4030)

THEA	4200	3
THEA	4250	2
THEA	4260	2
THEA	4700	1
THEA	4880	1
THEA	4990	*3

*This includes 1 credit of Independent Study Research Methods and 2 credits in Senior Research Project

The following courses outside the department are also required:

BIOL	1010	4
KIN	3050	2
ZOO	2040	4
PSYC	1000	4
FCSC	1140 or	2
FCSC	1141	3
KIN	2030 or	3
KIN	3034	3
KIN	3037 or	3
KIN	3038	3

Additional upper-division required course work (minimum 6 hours from the following courses):

KIN	3021	4
KIN	3040	3
KIN	3042	3
FCSC	3145	3
FCSC	4147	3
PSYC	3120	3
PSYC	3250	3
PSYC	4070	3

Bachelor of Fine Arts

Design/Technical Concentration (Preprofessional)

Students in the B.F.A. degree program who are completing the Design/Technical concentration will have the option of petitioning for permission to serve on the production staff of a departmental production as a designer or technician. Ordinarily, the petition would be submitted to the departmental faculty during the student's junior year and the project would be completed during the student's senior year. This project would be done under THEA 4880 or 4990 for 1 to 3 hours of credit.

These are the required courses for a B.F.A. with Design/Technical Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2145	3
THEA	2150	3
THEA	2220	3
THEA	2250	3
THEA	2800	3
THEA	2810	3
THEA	2990	3
THEA	3790	3
THEA	3810	3
THEA	3820	3
THEA	3850	2
THEA	4930	3
THEA	4940	3
THEA	4990	3
ART	1005	3

Plus 2 of the following 3 courses:

THEA	3805	3
THEA	4810	3
THEA	4850	3

Recommended Electives:

THEA	2160	2
THEA	4820	3
ART	2010	3
ART	2020	3

Bachelor of Fine Arts

Theatre and Dance (Musical Theatre Performance Concentration)

The following are the required courses for a Bachelor of Fine Arts in Performance (Musical Theatre):

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	1300	4
THEA	1360	3
THEA	1700	2
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2160	2
THEA	2170	3
THEA	2220	3
THEA	2340	6
THEA	3720	2
THEA	3730	3
THEA	3740	3
THEA	3790	3
THEA	3950	3
THEA	4330	3
THEA	4710	3
THEA	4720	3
THEA	4820	3
THEA	4940	3

Plus 3 hours from the following:

THEA	1410	1
THEA	1430	1
THEA	1450	1
THEA	1480	1

Plus two additional dance courses in an area of choice.

Minor Programs

The following courses are required for a minor in Theatre:

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2220	3
THEA	2800 or	3
THEA	3810 or	3
THEA	3820	3

Plus 3 hours of electives in Theatre and Dance (must be 4000 level or above)

The following courses are required for a minor in Dance:

THEA	1040	0.5
THEA	1410	1
THEA	1420	1
THEA	1430	1
THEA	1440	1
THEA	1480	1
THEA	2040	0.5
THEA	2200	3
THEA	3410	1
THEA	3420	1
THEA	3430	1
THEA	3440	1
THEA	4010	2
THEA	4030	2
THEA	4250	2

Plus 3 hours of electives in Theatre and Dance (must be 4000 level or above)

Scholarships

A number of scholarships are available to interested majors in theatre or within the dance option. The University Theatre also maintains a summer company. Applications should be sent to the Department of Theatre and Dance, Dept. 3951, 1000 E. University Ave., Laramie, WY 82071.

Departmental Activities/ Organizations

The department sponsors one of the largest all-student activities on campus. Nearly 250 students take part in its productions each season. All students are eligible to participate in its productions through auditions.

Productions are mounted in the Center for the Fine Arts which includes a flexible proscenium theatre and an experimental-studio theatre complete with scene and costume support facilities.

Auditions, open to all university students, are publicly announced for each production. Qualified students may receive credit in performance and production areas (THEA 2050).

The Wyoming Summer Theatre presents a season of plays of varying types during the summer session. Theatre majors and minors are urged to spend at least one summer working with this group.

Graduate Study

At present, no program for graduate degrees in theatre and dance is offered; however, courses may be counted at the graduate level.

Theatre and Dance (THEA)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1000. Introduction to the Theatre. 3. [CA◀▶H] A broad examination of theatre through the ages. Designed for students with little or no knowledge of theatre history, production, dramatic literature, creativity art, entertainment and censorship from the dawn of history to the 21st century. (Offered both semesters)

1020. Freshman Seminar: Academic and Professional Issues in Theatre. 3. [I,L◀▶(none)] Introduces first year theatre and dance students to the basic skills necessary to engage in intellectual discourse in their fields. It aims to advance students' analytical, research, and writing skills by studying the meaning and aesthetics of the performing arts through special topics and Aristotle's poetics.

1021. Freshman Seminar: Academic and Professional Issues in Dance. 1. [I,L◀▶(none)] Introduces freshman to the discipline of dance and academic study at the University of Wyoming. Key intellectual and literacy concepts will be introduced, including, but not limited to: critical thinking and analysis, knowledge of the discipline, career options, diversity of the discipline, university and region.

1040. Production Crew I. 0.5. Participation in one Departmental production during semester enrolled. Contribute to the preparation and/or actual production of one stage play in the areas(s) of lighting, costume construction, set construction, scenic painting, stage properties, or arts management. Required for all Theatre & Dance freshmen. *Prerequisite:* consent of instructor. (Offered both semesters)

1100. Beginning Acting. 3. [CA◀▶H] Explores inner resources of beginning actor and brings these resources to bear upon the art of creating a believable stage image. (Offered both semesters)

1101. First-Year Seminar. 3. [(none)◀▶FYS]

1200. Introduction to Stage Design. 3. Introduces and explores visual aesthetic principles as they relate to various aspects of stage design. Studio projects in scene, lighting, and costume design supplement lectures. Prerequisite for other design courses. (Normally offered fall semester)

1300. Musical Theatre Workshop. 1 (Max. 16). Workshop production of a Musical or Musical Theatre scenes. (Offered both semesters)

1340. Musical Theatre Class Voice. 3. Group instruction in singing techniques and performance styles associated with Musical Theatre. Includes demonstration, brief lectures, discussion, and active participation through singing, analyzing, movement, and scene preparation.

1360. Fundamentals of Music for Theatre Majors. 3. Basics of music theory to include music notation, rhythm, pitch, scales, key signatures, triads, and basic ear training and keyboard skills, specific to the needs of Musical Theatre. Assumes little or no music theory background.

1405. Introduction to Pilates Training. 1 (Max. 2). An introduction to Pilates based training, including mat work and exercises on the Reformer. *Prerequisite:* consent of instructor.

1410. Ballet I/I. 1. [CA◀▶H] Introduces principles and practices of classical ballet technique.

1420. Ballet I/II. 1. [CA◀▶H] Continues studies in classical ballet technique. *Prerequisite:* THEA 1410. (Offered spring semester)

1430. Modern Dance I/I. 1. [CA◀▶H] Introduces principles and techniques of modern dance.

1440. Modern Dance I/II. 1. [CA◀▶H] Continues studies in modern dance technique. *Prerequisite:* THEA 1430. (Offered spring semester)

1450. Beginning Tap Dance. 1. Explores basic tap techniques and related principles of tap dance composition. (Offered spring semester)

1470. Men's Technique. 1 (Max. 2). Introduces and develops the principles and techniques of movement and dance specific to men.

1480. Beginning Jazz. 1. [(none)◀▶H] Introduces jazz dance. (Offered fall semester)

1700. Voice for the Actor. 2. Introduction to voice work. Emphasizes breath freedom, flexibility and support for the actor. Methodologies studied include: Fitzmaurice Voicework, Linklater and Lessac systems.

2005. Creative Drama in the Classroom. 3. Focuses on K-12 Theatre teaching methods. Students discover teaching methods for integrating improvisation, storytelling, movement/dance, and puppetry into the school curriculum. Students design and implement theatre lessons using these creative drama techniques. To engage real life practice teaching, students are given opportunities to teach creative drama lessons to the class.

2010. Theatrical Backgrounds Drama I. 3. First semester of a two-course series. Introduces dramatic literature through the ages.

2020. Theatrical Backgrounds Drama II. 3. Second semester of a one-year course. Continues THEA 2010. *Prerequisite:* THEA 2010.

2030 [3500]. Beginning Playwriting. 3. Introduces writers to the creative process of playwriting (writing for the stage) or screen-

writing (writing for the movies). Strongly emphasizes character and story development, as well as practical side of the industry. Students write a play or screenplay. *Prerequisites:* WA and THEA 1000, 1100.

2040. Production Crew II. 0.5. Continues the "hands-on" production crew experience provided by Production Crew I. Contribute to a Theatre Department production in the area(s) of lighting, costume construction, set construction, scenic painting, stage properties, stage management, or arts management. Required for all Theatre & Dance majors. *Prerequisite:* THEA 1040.

2050. Theatre Practice. 1-2 (Max. 4). Encompasses individually supervised practical training in performance and production. Offered for S/U only. *Prerequisite:* consent of instructor.

2145. Costume Construction. 3. Teaches the basic skills and terminology that are used in costume construction. Teaches hand and machine sewing focusing on techniques used to stitch historical and modern costumes as well as basic knowledge of fabric.

2150. Drafting for Design. 3. Introduces Design and Technical students to the basics of hand drafting and numerous drafting techniques and conventions. After completing this course, students will be well prepared for scenic and lighting design courses. *Prerequisite:* THEA 1200.

2160. Stage Makeup. 2. Introduction to theatrical makeup with the stage performer in mind. Focus on principles, materials, and techniques; concentrating on problems of designing and executing specific makeup designs and applications for a wide range of ages, types, and styles. (Offered fall semester)

2170. Speech for the Actor. 3. Studies speech techniques, including the International Phonetic Alphabet and Standard American Speech for the Stage. Builds upon the Fitzmaurice-Voicework technique as well as other voice methodologies. *Prerequisites:* THEA 1100 and 1700.

2180. Costume Crafts. 3. Focuses on the area of costume crafts which may include but not limited to dyeing, millinery, masks, fabric painting and distressing, working with a variety of materials. *Prerequisite:* THEA 2145. (Offered spring semester every other year)

2200. Backgrounds of Dance. 3. [CA,G◀▶H] Surveys ethnic and theatrical dance forms from primal society to 20th century. Examines the place of the arts as a reflection of the culture. (Offered fall semester)

2220. Stagecraft. 3. Introduces students to basic stage production practices and techniques, including safe rigging practices, set construction, scenic painting, stage properties, and stage lighting. Students are encouraged to participate in "hands-on" demonstrations during classes. (Offered both semesters)

2240. Stage Production. 3. Introduces students to basic Stage Production techniques in numerous areas, including but not limited to costume construction, property design and construction, scenic painting, upholstery, and lighting instrument repair and maintenance. *Prerequisite:* THEA 2220.

2250. Computer Aided Design I. 3. Introduces students to computer drafting techniques for the Theater using AutoCAD. Students learn the basics of two-dimensional drawing using AutoCAD, and also learn basic drawing standards as they apply to the Theater. *Prerequisites:* THEA 1200, THEA 2150.

2340. Musical Theatre Voice Lesson. 1 (Max. 4). Solo instruction in singing techniques and performance styles associated with Musical Theatre. Includes demonstration, brief lecture, discussion, and active participation through singing, analyzing, movement, and performance.

2400. Vertical Dance I. 1. An introduction to vertical dance including safety issues, beginning rigging and performance. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructors.

2410. Ballet II/I. 1. Continues studies in classical ballet. *Prerequisite:* THEA 1420.

2420. Ballet II/II. 1. Continues studies in classical ballet. *Prerequisite:* THEA 2410.

2430. Modern Dance II/I. 1. Continues studies in modern dance technique. *Prerequisite:* THEA 1440.

2440. Modern Dance II/II. 1. Continues studies in modern dance technique. *Prerequisite:* THEA 2430.

2450. Tap II. 1. Continues studies in techniques and principles of tap dance. *Prerequisite:* THEA 1450. (Offered spring semester in alternate years)

2480. Jazz II. 1. [(none)◀▶H] Continues studies in techniques and principles of jazz dance. *Prerequisite:* THEA 1480. (Offered spring semester)

2800 [3800]. Stage Lighting I. 3. Examines the elemental aspects of stage lighting including equipment, facilities, color, and fundamental electricity. Requires studio work on departmental productions. Intended for majors in the program. *Prerequisite:* THEA 2220. (Normally offered fall semester)

2810. Scenic Painting for the Theatre. 3. Introduces the art of scenic painting by the hands-on use and instruction of a variety of scenic paints, application on select construction materials, the use of unique tools and techniques commonly used to paint scenery for the stage. Safe use and proper handling of such material are addressed. *Prerequisite:* THEA 2220.

2900. Sound Design for Theatre and Dance. 3. Examines the basic aspects of sound design for the theatre, dance, entertainment and film worlds. Topics covered include recording, sampling, live mixing, playback, and non-linear editing through several software packages. *Prerequisite:* THEA 2220.

2990. Period Styles in Design for Theatre. 3. Developed to provide an overview of social cultural, art, architecture, music, fashion, literature, and period styles and décor from antiquity to the modern age of western civilization applicable to theatrical stage design.

3021. Foundations of Dance Pedagogy. 1. Introduces students to basic theories and practices of dance pedagogy. Lecture and discussion will be balanced with peer teaching and coaching, observation of lessons and integration within a dance classroom situation with some teaching responsibilities and development of a portfolio with lessons and resources for teaching. *Prerequisites:* sophomore standing in the department of Theatre and Dance; successful completion of THEA 3420 or THEA 3440.

3100. Kinesiology for Dance. 3. Encompasses seminar in current kinesiology research for dancers. Includes practicum based projects, lectures and supplementary materials. *Prerequisite:* ZOO 2040. (Offered every third semester)

3160. Advanced Stage Makeup. 2. Extension of Stage Makeup, focusing primarily on the development of a life mask and ultimately prosthetics using a variety of mediums. *Prerequisite:* THEA 2160.

3180. Drama and Religion. 3. Drama and religion seek to communicate ideas about the ultimate meaning of human life. Both influence and are influenced by the culture from which they developed. Examines plays that are influenced by the Bible, Greek plays whose concepts have influenced Christianity over the centuries, and modern plays that address religious issues. Cross listed with RELI 3180. *Prerequisite:* junior standing.

3400. Vertical Dance II. 1 (Max. 2). A continuing course in vertical dance emphasizing the math and physics of the rigging; safety and design, choreography and research in the field. *Prerequisites:* completion of THEA 2400 and consent of instructors.

3410. Classical Ballet III/I. 1 (Max. 2). Continued studies in classical ballet technique. Emphasizes improving technical skills and introducing more advanced steps. Includes

research into one discipline of ballet. *Prerequisites:* successful completion of THEA 1420 or its equivalent and consent of instructor.

3420. Classical Ballet III/II. 1 (Max. 2). Continued studies in classical ballet technique. Emphasizes broadening the dancer's movement vocabulary while refining acquired technical skills. Dancers begin work in study of Baroque dance terms. *Prerequisite:* successful completion of THEA 3410 and consent of instructor.

3430. Modern Dance III/I. 1. (Max. 2). Continued studies in modern dance technique. Presents rhythmic analysis, introduction to pre-classic dance forms and historical survey of modern dance. *Prerequisite:* successful completion of THEA 1440 or its equivalent as deemed by instructor.

3440. Modern Dance III/II. 1. (Max. 2). Continued studies of sequential modern dance technique at intermediate level. Introduces Laban effort/shape theory, compositional forms, improvisation and additional rhythmic analysis. *Prerequisite:* THEA 3430 or its equivalent as deemed by instructor.

3480. Jazz III/I. 1 (Max. 2). An intermediate jazz technique class. Students will learn varying styles of jazz dance, ranging from historical to contemporary, and will perform these for evaluation and incorporate them into class compositions. *Prerequisite:* THEA 2480. (Offered fall semester)

3490. Jazz III/II. 1 (Max. 2). An advanced class in jazz technique and performance. Students will learn varying styles of jazz dance, ranging from historical to contemporary, and will perform these for evaluation as well as incorporate them into class compositions. *Prerequisite:* THEA 3480. (Offered spring semester)

3600. Teaching Theatre in Elementary or Secondary School. 3. Focuses on aspects of age appropriate teaching methods, strategies, and curriculum planning for either elementary or secondary education. Additional emphasis include planning a production season, arts management and budgeting, using national and state content and performance standards, assessing student growth, and developing community advocacy plans. *Prerequisite:* THEA 1100.

3650. Theatre for Young Audiences: Plays and Production. 3. Highlights aspects of performance and directing for child audiences. Students will explore the work of outstanding contemporary playwrights who are writing for young audiences, and develop techniques in writing, acting, and directing for and with young people. *Prerequisite:* THEA 1100.

3720. Intro to Stage Combat. 2. The basic techniques used in staging both unarmed stage combat and rapier and dagger fight scenes. Students will experience the process of learning, rehearsing, and performing fight scenes. Includes analysis, discussion, training exercises, and choreographed performance. General curriculum follws that set forth by the Society of American Fight Directors. *Prerequisite:* THEA 1100. (Normally offered fall semester)

3730. Intermediate Acting. 3. Develops the actor's voice and body for characterization and character interaction through performance of scenes. Study of character and scene analysis. *Prerequisites:* THEA 1100. (Normally offered fall semester)

3740. Acting Styles. 3. Focuses on textual analysis of plays from different periods and styles of dramatic literature. Emphasizes vocal and physical interpretation of character as represented in non-realistic styles of drama. *Prerequisites:* THEA 1100 and 3730. (Normally offered alternating spring semesters)

3750. Acting for the Camera. 3. Addresses performance skills required in acting for the camera. Covers various techniques, styles, and skills necessary to be successful in the professional world of film and television as an actor. Students perform scenes for 3-camera and single camera set-ups, and become familiar with rudimentary technical skills as crewmembers for shoots. Lecture and test material cover career opportunities, union affiliations, and current trends in the film and television industry. *Prerequisites:* THEA 1100 and 3730.

3790. Stage Management. 3. Study of the essential elements of supervising theatrical productions. Stresses the art of organizing auditions, casts, crews, rehearsals, and performances while developing a unique professional relationship with directors, designers and actors. Students will work on a live production. *Prerequisites:* THEA 1100, 1200, 2220.

3805. Stage Lighting II. 3. Analyze proposed productions in terms of period, style, theatre limitations and instrumental inventories. Determine appropriate design solutions in written descriptive analyses that result in 2-D drawings of the design. Produce all supporting paperwork including drafting a plan view, section view, instrument schedules, magic sheets and proposed cue lists. *Prerequisites:* THEA 2220, 2800, 2810 and 2900.

3810. Scene Design. 3. Applies graphic design to scenic design commencing in drop point perspective, designer's elevations and scenic design rendering. Requires practical work on theatre productions. *Prerequisite:* THEA 2150. (Normally offered spring semester)

3820 [4840]. Stage Costuming I. 3. A study of basic drawing and rendering skills, and a selective study of historical silhouettes. Objectives include the ability to trust instinct, application of the basic elements of design, applying historical reference and research to a specific character, developing a concept and finally the application of these principles to a final project. *Prerequisite:* THEA 1100. (Normally offered fall semester)

3840. Historical Costumes from the Skin Out. 3. Learning how to replicate period gowns and undergarments prior to the 1920s by draping and flat-patterning techniques. Includes the research and construction of one complete set of period undergarments and gown either as an individual or in a team to be determined by the complexity of the garment and the skill level of the students. *Prerequisite:* FCSC 3174 (4170) or FCSC 3175.

3850. Design and Technology Seminar. 2. Introduces designer/technician to process of preparing successful interview material, including a professionally developed portfolio. Exposes designer/technician to business aspects of the theatre world, including resumes, letters of inquiry and application, contracts, unions and professional organizations, internships, apprenticeships, URTAs and professional design/technical training programs. Culminates in junior End-of-the-Year Evaluations. *Prerequisite:* junior standing in the BFA Program with Design/Technical emphasis.

3890. Lighting CADD. 3. Designed for the advanced lighting student, provides further exploration of the computer technology that has become so critical for modern lighting design. Introduces students to software programs such as VectorWorks, Lightwright, and Photoshop, as well as networking and advanced programming for modern light boards. *Prerequisites:* THEA 2250 and 2800.

3910 [591]. 20th Century Theatre Diversity. 3. Studies plays and production techniques, within the context of historical and sociological events, as developed in the 20th Century that has led to the cultural diversity seen in modern theatre. *Prerequisite:* junior standing. (Normally offered spring semester)

3950. Dialects for the Actor. 3. Introduces the actor to five major dialects for the stage. Examines sensibility, vowel and consonant changes, pitch placement and charting. *Prerequisites:* THEA 1100, 1700, and 2170.

4000. Character Dance. 1. Principles, style and technique of character dance. *Prerequisite:* THEA 3410.

4001. Historical Dance. 1-2 (Max. 2). Historical dance forms in the "Noble Style" dating from the 15th through 18th Centuries. Class

work covers the relationship of musical forms to the specific step vocabulary and dances of each period, deportment, period costume as it relates to movement, social environment, period style with an emphasis on reconstruction of 17th and 18th Century dances from Feuillet notation. *Prerequisite:* THEA 3420.

4010. Advanced Ballet. 2-3 (Max. 18). Encompasses progressive technical training and performance style. *Prerequisite:* THEA 3420.

4030. Advanced Modern Dance. 2-3 (Max. 18). Encompasses progressive technical training and performance style in modern dance techniques. *Prerequisite:* THEA 3440.

4060. English/Theatre Studies in _____. 3. Identical to ENGL 4060. (Normally offered spring semester)

4200. 20th Century Dance. 3. [CA,WC◀▶COM3] Intensely studies dance in 20th Century, emphasizing contemporary movement in modern, ballet, jazz and musical theatre dance. Examines social, political and aesthetic trends influencing dance theory and performance. *Prerequisite:* THEA 2200.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with CLAS/ENGL 4230. *Prerequisite:* 3 hours of classics courses. (Offered in spring in alternate years)

4250. Beginning Dance Composition. 2. Presents and criticizes movement studies based on various approaches to composition. Explores experimentation in choreography. *Prerequisite:* THEA 2420, 2440. (Offered fall semester of alternate years)

4260. Intermediate Dance Composition. 2-3 (Max. 3). *Prerequisites:* THEA 4250 and consent of instructor. (Offered spring semester of alternate years)

4330. History of American Musical Theatre. 3. [WC◀▶COM3] History of the American Musical from its inception to today. Emphasis on developments and literature. *Prerequisites:* THEA 2010, 2020, 6 hours in theatre at the 3000-level. (Normally offered alternating fall semesters)

4500. Advanced Playwriting. 3. An intensive continuation of THEA 3500. Focuses on the creation, analysis and rewriting of play script(s), culminating in a public reading or performance of the script(s). *Prerequisite:* THEA 2030.

4600. Teaching Theatre Artists: Service Learning in the Community. 3. Focus on Service Learning in the Community. Students will have the opportunity to observe various settings in the community of development of theatre program. Some areas of observation and practicum include drama/theatre-in-education, community-issue-focused-theatre, and theatre with special populations, crisis prevention, drama therapy, Preventive Medical Agencies, etc. *Prerequisite:* THEA 1100.

4700. Auditioning and Careers in Dance. 1. Designed for dance majors as a culminating course in preparation for final semester auditions and applications for companies and graduate schools. Through this course, students will set career goals, create an audition portfolio, and gain exposure to the many challenges and opportunities in dance. *Prerequisites:* senior standing, THEA 1021, and one semester of THEA 4010 or 4030.

4710. Advanced Scene Study. 1-3 (Max. 6). Involves intensive work at an advanced level dealing with individual actor's problems through the medium of scene study. *Prerequisite:* THEA 3740. (Normally offered spring semester of alternate years)

4720. Auditioning and Professional Issues. 3. Introduces actors to process of finding, preparing and executing successful audition material, including monologues, songs and dance combinations. Exposes actors to business aspects of the theatre world, including resumes, photos, contracts, unions, internships, apprenticeships, Equity Membership Candidacy programs, URTA's and professional actor training graduate programs. Culminates preparation for final semester auditions for the company/school of choice. *Prerequisites:* THEA 1100, 3730 and 3740. (Normally offered fall semester)

4730. Movement for Actors. 2. An exploration of the underlying physical skills of actors as well as the art of physical acting and nonverbal storytelling. We will be using a mix of Viewpoints, LeCoq, Suzuki, and other practitioners' contributions, including Mask, Mime, Clowning, Devised Theatre and more. *Prerequisite:* THEA 1100 and 3720. (Normally offered alternating spring semesters)

4750. Computer Aided Design II. 3. Gives design and Technical students advanced training in AutoCAD and Softplot. Also explores methods for effectively transferring files and data between these two programs, and incorporating spreadsheet programs such as Microsoft Excel to improve efficiency. *Prerequisites:* THEA 2250, THEA 2800.

4770. Summer Theatre. 1-3 (Max. 6). Offers credit for participation in the Wyoming Summer Theatre program in all phases of production. Offered for S/U only. *Prerequisites:* 12 hours in theatre and consent of instructor. (Offered summer session)

4800. Stage Lighting-Production. 3. Explores design and execution of lighting for theatrical production. Includes practical laboratory work with Theatre & Dance productions. *Prerequisite:* THEA 2800, 2900, and 3805. (Normally offered alternating spring semesters)

4810. Advanced Scenic Design. 3. Explores alternate styles of scenic design in the realization of a design for a complete stage setting. Emphasis in course work will be on creating the portfolio. *Prerequisite:* THEA 3810. (Offered alternating spring semesters)

4820. Directing I. 3. Tools course. Focuses on basic pictorial and blocking skills of the director. Includes in-class exercises that cover structural and character analysis of play scripts, blocking annotation and prompt scripts, developing ground plans, creating compositions with emphasis, focus and balance, and employing movement as a dynamic tool. Requires two outside directing projects with verbal evaluations of all project work. Prerequisites: THEA 2010, 2020, 3730, and 3810. (Normally offered fall semester)

4830. Directing II. 3. Focuses on creative process of developing directorial concepts, establishing the world and style of the play, working with the actor, and functioning as a designer. Includes exercises that analyze different directorial approaches, as well as the audition and casting process. Culminates one-act mounted production performed before invited audience. *Prerequisites:* THEA 4820 and written permission of instructor. (Normally offered alternating spring semesters)

4845. Costume Fit and Alteration. 3. Focuses on fitting modern clothing and historical costumes to individuals. Students learn how to identify fit issues in a fitting, make the proper corrections and fit the garment again. Students use a combination of previously constructed garments and also pattern garments to fit. *Prerequisite:* FCSC 3174 (4170) or FCSC 3175.

4850. Stage Costuming II. 3. Explores costume design, emphasizing various rendering techniques. Emphasis is placed on the portfolio. *Prerequisite:* THEA 3820. (Normally offered spring semester)

4880. Advanced Theatre Practice. 1-2 (Max. 4). Encompasses individual problems in theatre or interpretation. Includes research, writing and practical work. *Prerequisites:* 12 hours in theatre and consent of instructor. (Offered both semesters)

4930. Theatre History I. 3. [WC◀▶COM3] First semester of a one-year series. Surveys theatrical and dramatic practices from origins of Western European theatre to the theatre of the avant-garde. Specifically focuses on the climate

of ideas and theoreticians, theatrical practitioners and audiences. *Prerequisites:* THEA 2010, 2020, 6 hours in theatre at 3000-level. (Normally offered alternating fall semesters)

4940. Theatre History II. 3. Second semester of a one-year series. Continues THEA 4930. *Prerequisite:* THEA 4930. (Normally offered alternating spring semesters)

4950. Senior Thesis. 3. Encompasses senior research project under faculty member guidance and supervision. *Prerequisite:* senior standing.

4960. Senior Project. 1-3 (Max. 3). Exercise in the practical application of production, centered on a UW production, either main stage or studio. It may deal with design in scenery, costumes, properties, sound, makeup, playwriting, technical direction, directing, dance pedagogy, or choreography. The project is intended to be a "real" exercise in theatrical production.

4990. Research in Theatre. 1-3 (Max. 6). *Prerequisite:* 6 hours in area of research and consent of instructor.

Zoology and Physiology

428 Biological Sciences Building, (307)766-4207
FAX: (307)766-5625
Web site: www.uwyo.edu/Zoology
Department Head: Donal Skinner

Professors:

MERAV BEN-DAVID, B.S. Tel Aviv University 1984; M.S. 1988; Ph.D. University of Alaska 1996; Professor of Zoology and Physiology 2010, 2000.

CRAIG W. BENKMAN, B.A. University of California at Berkeley 1978; M.S. Northern Arizona Sate University 1981; Ph.D. State University of New York at Albany 1985; Robert Berry Professor of Ecology, Professor of Zoology and Physiology 2004.

HAROLD L. BERGMAN, B.A. Eastern Michigan University 1968; M.S. 1971; Ph.D. Michigan State University 1973; Director SENR/IENR 1997; Professor of Zoology and Physiology 1984, 1975.

FRANCIS W. FLYNN, B.A. University of Colorado, Boulder 1973; M.A. Northern Arizona University 1977; Ph.D. Kansas State University 1981; Professor of Zoology and Physiology 2001.

WILLIAM A. GERN, B.A. Western State College 1971; M.A. 1973; Ph.D. University of Colorado Boulder 1976; Professor of Zoology and Physiology 1989, 1979.

ROBERT O. HALL JR., B.S. Cornell University 1989; Ph.D. University of Georgia 1996; Professor of Zoology and Physiology 2010, 1998.

PAULA M. LUTZ, B.S. University of Missouri-Rolla 1976; Ph.D. Duke University 1981; Dean, College of Arts and Sciences 2013; Professor of Zoology and Physiology 2013.

CARLOS MARTINEZ del RIO, B.Sc. Universidad Nacional de Mexico 1984; Ph.D. University of Florida 1990; Professor of Zoology and Physiology 2004, 2000.

DAVID B. MCDONALD, A.B. Harvard College 1973; Ph.D. University of Arizona 1987; Professor of Zoology and Physiology 2010, 1996.

FRANK J. RAHEL, B.A. Kenyon College 1974; M.S. University of Wisconsin 1977; Ph.D. 1982; Professor of Zoology and Physiology 1998, 1985.

ROBERT S. SEVILLE, B.S. San Diego State University 1981; M.S. University of Wyoming 1987; Ph.D. 1992; Professor of Zoology and Physiology 2011, 1995.

DONAL C. SKINNER, B.S. Rhodes University 1987, B.S. (Hons.) University of the Witwatersrand 1988; Ph.D. University of Cambridge 1993; Professor of Zoology and Physiology 2012.

Associate Professors:

MICHAEL E. DILLON, B.S. University of Texas, Austin 1998; Ph.D. University of Washington 2005; Associate Professor of Zoology and Physiology 2015, 2009.

JACOB R. GOHEEN, B.S. Kansas State University 1998; M.S. Purdue University 2002; Ph.D. University of New Mexico 2006; Associate Professor of Zoology and Physiology 2015, 2010.

MATTHEW J. KAUFFMAN, B.A. University of Oregon 1992; Ph.D. University of California, Santa Cruz 2003; Associate Professor of Zoology and Physiology 2014, 2006.

JONATHAN F. PRATHER, B.S. University of Virginia 1995; Ph.D. Emory University 2001; Associate Professor of Zoology and Physiology 2015, 2009.

QIAN-QUAN SUN, B.Sc. Shandong Normal University 1990; M.S. 1993; Ph.D. St. Andrews University 1998; Associate Professor of Zoology and Physiology 2010, 2004.

CHARLES J. WOODBURY, B.S. Arizona State University 1982; Ph.D. State University of New York at Stony Brook 1989; Associate Professor of Zoology and Physiology 2008, 2003.

Assistant Professors:

SARAH BENSON-AMRAM, B.A. Cornell University 2001; Ph.D. Dual Degree Michigan State University 2011; Assistant Professor of Zoology and Physiology 2014.

MATTHEW D. CARLING, B.S. University of Michigan 1997; M.S. University of Idaho 2002; Ph.D. Louisiana State University 2008; Assistant Professor of Zoology and Physiology 2011.

ANNA D. CHALFOUN, B.A. Smith College 1995; M.S. University of Missouri-Columbia 2000; Ph.D. University of Montana-Missoula 2006; Assistant Professor of Zoology and Physiology 2011.

BRIAN D. CHERRINGTON, B.A. Washington University 1996; M.S. Colorado State University 2001; Ph.D. 2005; Assistant Professor of Physiology 2011.

HAYLEY C. LANIER, B.S. University of Kansas 2004; Ph.D. University of Alaska, Fairbanks 2010; Assistant Professor of Zoology and Physiology 2013.

AMY M. NAVRATIL, B.S. Colorado State University 1999; Ph.D. 2005; Gardner-Fiske Assistant Professor of Physiology 2011.

KARA PRATT, B.A.S. University of of Delaware; Ph.D. Brandeis University 2004; Assistant Professor of Zoology and Physiology 2011.

STEPHEN W. SANTORO, B.S. University of Wyoming 1994; Ph.D. Scripps Research Institute 1999; Assistant Professor of Zoology and Physiology 2014.

COREY E. TARWATER, B.S. University of California, Davis 1999; M.S. University of Illinois, Urbana-Champaign 2006; Ph.D. 2010; Assistant Professor of Zoology and Physiology 2015.

ANNIKA W. WALTERS, B.A. Princeton University 2002; M.S. Yale University 2006; Ph.D. 2009; Assistant Professor of Zoology and Physiology 2011.

Senior Academic Professional Lecturers:

MARGARET J. FLANIGAN, B.Sc. University of Strathclyde 1984; Ph.D. University of the Witwatersrand 1993; Senior Academic Professional, Zoology and Physiology 2015, 2003.

Senior Academic Professional Research Scientist:

ZHAOJIE ZHANG, B.S. Shandong University 1985; M.S. 1988; Ph.D. University of Oklahoma 1999; Director, Microscopy Core Facility, University of Wyoming 2001; Senior Research Scientist in Zoology and Physiology 2012.

Senior Academic Professional Research Scientist:
AMY C. KRIST, B.A. State University of New York at Potsdam 1991; Ph.D. Indiana University 1998; Senior Research Scientist, Zoology and Physiology 2015, 2004.

Professors Emeritus:
Robert W. Atherton, Steven W. Buskirk, Zoltan M. Fuzessery, Robert P. George, Henry J. Harlow, Wayne A. Hubert, Robert M. Kitchin, J.A. Lillegraven, Frederick G. Lindzey, James R. Lovvorn, Graham Mitchell, James D. Rose, Joan Smith-Sonneborn

Academic Professional Lecturer Emeritus:
Jane Beiswenger

Wyoming Cooperative Fish and Wildlife Research Unit
Unit Leader: Matthew W. Kauffman
Assistant Unit Leader for Fisheries: Annika W. Walters
Assistant Unit Leader for Wildlife: Anna D. Chalfoun

The Department of Zoology and Physiology offers a variety of courses in the biological sciences that encompass many aspects of animal form, function, and biology.

Whether you are interested in the intricacies of cell biology or the complexities of ecosystem functioning and whether you want to become a wildlife biologist or a physician, we offer a major that will suit your needs. Students can choose from four undergraduate degrees: biology, physiology, wildlife and fisheries biology and management, or zoology. Course requirements for each degree are detailed on our website: www.uwyo.edu/zoology.

Undergraduate Degrees

Biology Major

The Biology major is an interdepartmental program that provides a broad education in biological sciences. It enables students to combine courses in biology, botany, zoology, physiology, and other biological sciences to meet the requirements of the major. On completion of the core requirements for the major, specific courses selected to complete the major may vary according to students' interests and are worked out by consultations between student and adviser. The requirements for a bachelor's degree are outlined in the Biology section of this *Catalog* or see the web site at www.uwyo.edu/biology.

Physiology Major

Physiology is the study of how animals work: how they breathe, feed, interact with their environment, and carry out many other activities and functions. Physiology is the knowledge that the health sciences are built on and so is especially important for students who may be thinking of becoming medical practitioners, veterinarians or health care professionals. In addition to the University and College of Arts and Sciences requirements, a degree in physiology typically involves the following courses:

Freshman and Sophomore Years

Students take introductory courses in biology, chemistry, physics, and mathematics as these are essential for understanding physiological processes. Students begin the study of physiology with Human Systems Physiology which focuses on how the cardiovascular and respiratory systems function.

Junior and Senior Years

Students take Integrative Physiology, which is concerned with how the body regulates such functions as reproduction or blood glucose concentrations.

Students can specialize in an area of physiology they find particularly interesting. The department has strong expertise in neuroscience physiology, cell physiology, ecological and comparative physiology. For details, visit our web site.

At the end of this program students will have a thorough knowledge of physiology, will be well prepared to enter health sciences or graduate education, and will have a range of skills attractive to employers.

Wildlife and Fisheries Biology and Management Major

Wildlife and Fisheries Biology and Management is a professional degree designed to prepare students for state, federal, and other positions in resource management and conservation biology. The degree provides students with knowledge of the natural world, understanding of processes governing dynamics of wildlife and fish populations, as well as an appreciation of human-mediated effects on wildlife and fish populations. A student graduating with this degree will be familiar with the theory of resource management as well as with methods used to determine population status, habitat quality, and conservation. In Wyoming the abundance of wild animals and pristine habitats provide a unique natural laboratory for studying the responses of wildlife and fish populations to changing climates and habitats.

In addition to the University and College of Arts and Sciences requirements, a degree in wildlife and fisheries biology and management typically involves the following:

Freshman and Sophomore Years

Students take introductory courses in biology, chemistry, physics, and mathematics as these provide essential tools for understanding ideas and processes in wildlife and fisheries biology and management.

Students begin the study of wildlife and fisheries biology and management by taking courses in resource management, natural history of vertebrates, physiology, genetics, and evolution, as these subjects provide the underlying principles of population dynamics and the mechanisms of evolution.

Junior and Senior Years

Students can elect to concentrate in those areas of wildlife and fisheries biology and management they find most interesting and can specialize in a terrestrial or aquatic option. For details, see our web site.

A student graduating with a degree in WFBM will have comprehensive knowledge of wildlife and fisheries biology and management, will have earned a degree that is compatible with the requirements for professional certification with the American Fisheries Society or the Wildlife Society, and will have a range of knowledge and skills that are valuable to potential employers.

Zoology Major

Zoology is the study of animals: their structure, physiology, development and evolution. One of the enduring fascinations of zoology is that we can learn so much about ourselves and our environment by studying what our fellow creatures do.

In addition to the University and College of Arts and Sciences requirements, a degree in zoology typically involves the following courses:

Freshman and Sophomore Years

Students take introductory courses in biology, chemistry, physics, and mathematics as these provide essential tools for understanding zoological ideas and processes.

Students begin the study of zoology by taking courses in anatomy, physiology, genetics, ecology, and evolution, as these subjects

provide the underlying principles of the mechanisms of evolution, and animal structure, function, and ecology.

Junior and Senior Years

Students take courses in five main areas: invertebrate zoology, ichthyology, herpetology, ornithology, and mammalogy. For details of these and other courses see our web site.

At the end of this program students will have a comprehensive knowledge of zoology, will be well prepared for graduate education, and will be equipped to enter any of the many employment opportunities that are available.

Learning Outcomes for Undergraduates

The learning outcomes that direct the teaching of the department's degrees and which we expect our graduates to have acquired are:

- Competence in basic sciences;
- Competence in the content of the specific courses that constitute the principal knowledge of the degree;
- Ability to comprehend, analyze, and interpret biological data where appropriate; and
- Ability to synthesize information from the biological literature, and communicate it effectively in writing or orally.

Undergraduate Minor

Minors in zoology, physiology, wildlife fisheries biology management, and neuroscience are offered. Contact the department for further information or see the web site www.uwyo.edu/zoology.

Graduate Study

The Department of Zoology and Physiology offers programs leading to the master of science and the doctor of philosophy in zoology and physiology. We also particpate in graduate programs through the Neuroscience Program and the Program in Ecology.

Program Specific Admission Requirements

Admission is open to all students who meet the minimum requirements set forth in the admissions section of this *Catalog*.

Research and teaching assistantships are available for graduate students working toward the M.S. or Ph.D. degrees. Applicants can apply for this financial assistance at the time they apply for admission to graduate standing. Applications must be completed by February 15 in order to be considered for the following academic year.

Information on how to apply to the graduate program in the Department of Zoology and Physiology is detailed on our web site. Begin by identifying a faculty member in our department whose research interests are similar to yours. We will only consider an application if a faculty member has indicated a willingness to serve as the student's adviser. After finding a potential adviser, e-mail a completed departmental application form, a copy of your curriculum vitae, copies of college transcripts, recommendation letters and GRE scores to him or her. Our graduate admissions committee will review all applications and make decisions on admission based on the availability of funding and a commitment from a faculty member to serve as the adviser. Students recommended for admission will then be asked to fill out an application to the University of Wyoming and pay a non-refundable application fee.

Consult the website, www.uwyo.edu/zoology, to find out about faculty research.

Program Specific Degree Requirements

Master's Program
Plan A (thesis)

Includes 26 hours of coursework and 4 hours of thesis research.

Applicants should have at least 20 semester hours of undergraduate work in zoology, physiology, or other areas of the biosciences and have completed introductory courses in mathematics, chemistry, and in at least one other natural or physical science. Early in the second semester the student must file a program of study with the university and have a graduate committee appointed. Plan A candidates shall orally defend the thesis before the graduate committee.

All M.S. candidates will be required to complete credit in two graduate seminars. A student may enroll in more than one of these required seminars during one semester or academic year.

After two semesters in the department, a Plan A master's candidate may request permission from the department's graduate advisery board to proceed directly to the Ph.D. degree; however, such a bypass is granted only by the department head after considering recommendations from the graduate advisery board.

Zoology and physiology may be used as a field by a candidate working for the interdisciplinary master of science in natural science in the College of Arts and Sciences and the College of Education.

Plan B (non-thesis)

Includes 30 hours of coursework.

The program for the Plan B is established by the student and a faculty adviser and must be approved by the department head during the student's second semester or summer session.

The graduate committee will require the candidate to take a written examination. An oral examination may also be required. The final examination is comprehensive, covering all areas of zoology, but emphasizing one major area.

Doctoral Program

This is a 72 hour program.

A Ph.D. applicant must have 20 hours of undergraduate work in zoology, physiology, or other areas of biology and also have completed substantial undergraduate work in other sciences. Under exceptional circumstances, a student with an undergraduate major in a scientific discipline other than biology may be admitted. After the Ph.D. student has completed two semesters of graduate work, s/he must be approved for continued work toward the doctorate by the graduate advisery board. This board can reconsider a candidate thereafter if it so desires.

A graduate committee shall be appointed for the individual student no later than the third semester. After consultation with the student, this committee will prescribe special requirements (courses, minors, research tools, etc.) that must be fulfilled. At this time, the graduate committee shall consult with the candidate on the proposed research and shall identify the subject matter areas to be included in the preliminary examination. The preliminary examination will consist of a written research proposal, its oral defense, and a written and oral preliminary examination. When training outside zoology and physiology is specified by the committee, certification of satisfactory completion of the requirement will be made by the appropriate department.

In addition to the general university requirements for the Ph.D. degree, the department requires the following:

The coursework program should include work in a discipline outside the department, generally in the sense of a minor, to be identified in consultation with the graduate committee.

The preliminary examination consisting of written and oral portions should be taken no later than midterm of the fourth semester in residence. The graduate committee will certify satisfactory performance for the preliminary examination.

The dissertation must be received by each member of the graduate committee three weeks before the final dissertation seminar. As oral defense of the dissertation, the candidate will deliver a formal 50 minute seminar on original research from the dissertation. The seminar will be followed by an examination by the graduate committee.

Some time during their degree program, all Ph.D. candidates will be required to complete credit in three graduate seminars. A student may enroll in more than one of these required seminars during one semester or academic year.

All candidates for the Ph.D. degree shall be required to teach for one semester during their program.

The dissertation may be written in a format suitable for publication in a journal and the usual extensive literature review, description of study sites, technical details, raw data, supporting figures, charts, and photographs should be included in a well-organized appendix. (See also format requirements by the university.)

Zoology (ZOO)

USP Codes are listed in brackets by the 2003 USP code followed by the 2015 USP code (e.g. [QB◀▶Q]).

1101. First-Year Seminar. 3. [(none)◀▶FYS]

2040. Human Anatomy. 3. [SB◀▶(none)] Study of human structure in terms of its microscopic and gross anatomy. Provides students with adequate background to study human physiological function. The corresponding course, to be taken concurrently, is ZOO/KIN 2041. Cross listed with KIN 2040. *Prerequisite:* LIFE 1010.

2041. Human Anatomy Laboratory. 1. [SB◀▶(none)] A laboratory study of human structure in terms of human microscopic and gross anatomy. This laboratory course is designed to provide students with an adequate background to study human physiology and kinesiological function. *Prerequisite:* KIN/ZOO 2040 or concurrent enrollment.

2450. Principles of Fish and Wildlife Management. 3. Emphasizes principles of habitat and population biology and management, human dimensions of wildlife management, as well as law and policy. Cross listed with ENR 2450. *Prerequisites:* LIFE 1010 and 2022. (Offered spring semester)

3010. Vertebrate Anatomy, Embryology, and Histology. 4. Provides a comprehensive overview of vertebrate anatomy. The structural organization, embryological derivation, and histological organization of the major organ systems will be emphasized. The evolution and functional organization of anatomical structure will also be emphasized. Includes laboratory sessions. Fulfills degree requirement in physiology subsection for zoology major. *Prerequisites:* LIFE 2022 or equivalent, and a semester of chemistry.

3021. Physiology of Exercise. 4. Applies physiological principles to human physical activities. Emphasizes interaction of neuromuscular, circulatory and respiratory mechanisms as affecting, and affected by, immediate exercise situation and physical training. Includes laboratory. Cross listed with KIN 3021. *Prerequisites:* QA, KIN/ZOO 2040 and 3115; minimum 2.5 GPA. (Offered fall and spring semesters)

3115. Human Systems Physiology. 4. Covers the fundamental function(s) of the human body systems, from cells and tissues through organs and systems, focusing also on biological communication and homeostasis. Students learn how to interpret physiological data. Includes laboratory and tutorial sessions. Fulfills degree requirement in physiology subsection for zoology major. Cross listed with KIN 3115. *Prerequisites:* At least ((C in CHEM 1020 or CHEM 1050) or B in CHEM 1000) and C in LIFE 1010.

3600. Principles of Animal Behavior. 3. Intensively introduces scientific study of animal behavior. Utilizes evolutionary, ecological and physiological approach. *Prerequisite:* introductory course in zoology, biology or psychology. (Normally offered spring semester)

4100. Scientific Communication. 3. [WC,L◀▶COM3] This course is designed to provide intensive instruction in written, oral, and digital communication for zoology and physiology, biology, and botany majors. The course teaches students to communicate and execute research using practices common in the biological sciences. Cross listed with BOT 4100. *Prerequisites:* COM1, COM2, and concurrent or prior upper division BOT, ZOO, or LIFE course.

4110. HIV/AIDS: The Disease and the Dilemma. 3. Explores the basic biology of the HIV virus, and its effects upon the human body, the magnitude of the global HIV/AIDS pandemic, treatment and prevention of AIDS, and the social, political, economic, and legal issues of HIV/AIDS. *Prerequisite:* LIFE 1003 or LIFE 1010.

4125 [3120]. Integrative Physiology. 4. Examines how functional organ systems are coordinated and integrated to establish and maintain health. It considers, among others, the functions of the endocrine and central nervous systems. Dual listed with ZOO 5125. *Prerequisites:* grade of C or higher in ZOO 3115; and/or a Pharmacy 1 standing.

4190 [4230]. Comparative Environmental Physiology. 4. Studies and interprets principles of physiology which adapt animals to various environmental constraints. Introduces discipline which has risen between traditional fields of physiology and ecology and provides understanding of animal distribution and survival. Fulfills degree requirements in physiology subsection for the zoology major. Dual listed with ZOO 5190. *Prerequisites:* LIFE 2022 and one year of chemistry. (Offered spring semester)

4280. Introduction to Neuroscience. 3. Examines the basic electrical properties of neurons and from there identifies determinants of brain development, how neuronal "circuits" are formed and how these neuronal systems enable the processing of sensory information, coordinated movement, adaptation to the environment, and other complex functions (e.g., sleep, sex). Dual listed with ZOO 5280. *Prerequisite:* ZOO 3115 or equivalent.

4290. Neural Mechanisms Underlying Animal Behavior. 3. Studies ways in which nervous systems of both invertebrates and vertebrates contribute to and control their behavioral repertories. Focuses on aspects of sensory physiology with brief orientation to structure and function of nervous systems. Presents analysis neural control of movement. Includes laboratory demonstrations. *Prerequisite:* ZOO 3115 or equivalent.

4300 [4720]. Wildlife Ecology and Management. 5. Integrates concepts of vertebrate ecology with the art of wildlife management, stressing approaches to deal with the inherent uncertainty of managing populations. Strategies to increase or decrease populations of target species, tools used to determine population status (e.g., viability analysis, monitoring, habitat assessment), and ecosystem management approaches. Laboratory included. Dual listed with ZOO 5300. *Prerequisite:* LIFE 3400. (Offered fall semester)

4310 [4730]. Fisheries Management. 3. Acquaints students with theory and techniques of inland fisheries management. Includes methods of evaluating growth and production, rates of mortality and recruitment and use of yield models in fisheries biology. Includes laboratory and field exercises. Dual listed with ZOO 5310. *Prerequisite:* ZOO 4330. (Normally offered fall semester)

4330 [4750]. Ichthyology. 3. Anatomy, physiology and classification of fishes, emphasizing classification and identification of Wyoming fishes. Includes laboratory. Dual listed with ZOO 5330. *Prerequisite:* LIFE 2022. (Normally offered spring semester)

4340. Developmental Biology and Embryology. 4. Introduces study of vertebrate embryology and cellular differentiation. Includes gametogenesis, fertilization, blastulation and organogenesis, growth and differentiation, teratology, metamorphosis, regeneration and asexual reproduction. Emphasizes mechanisms that create form and regulate cellular differentiation. Dual listed with ZOO 5340. *Prerequisite:* one year of life sciences, one year of chemistry. (Normally offered spring semester)

4350 [4780]. Ornithology. 3. Acquaints students with classification, identification, morphology, distribution, natural history and ecology of the birds of North America. Includes laboratory. Dual listed with ZOO 5350. *Prerequisite:* LIFE 2022. (Offered spring semester)

4370 [4790]. Mammalogy. 3. Studies mammals of the world, emphasizing natural history, distribution, taxonomy, ecology and morphology of mammalian species. Includes laboratory. Dual listed with ZOO 5370. *Prerequisite:* LIFE 2022. (Offered fall semester)

4380. Herpetology. 3. Introduces the ecology, behavior, morphology, evolution, systematics and conservation of reptiles and amphibians. Dual listed with ZOO 5380. *Prerequisite:* LIFE 2022.

4390. Environmental Toxicology. 3. Explores the disciplines of aquatic and wildlife toxicology from environmental, chemical, and regulatory perspectives. Emphasis on standard environmental toxicology testing methods, field studies, statistical analyses, and mechanistic principles, with discussions of contemporary issues in the field. Dual listed with ZOO 5390.

4400. Population Ecology. 3. Explores quantitative ecology of animal populations, emphasizing theoretical and empirical work. Provides modern coverage of principles of population ecology for wildlife majors and others who expect to deal with ecological problems in their careers. Dual listed with ZOO 5400. *Prerequisites:* LIFE 1010, LIFE 3400 and STAT 2050 or consent of instructor. (Offered spring semester)

4415. Behavioral Ecology. 3. Applies empirical and theoretical approaches to ecological and evolutionary underpinnings for behaviors ranging from foraging and predation to social grouping and mating systems. Emphasizes comparative analyses (what phylogenetic patterns exist across diverse species?) as well as genetic/fitness benefits (how do individuals benefit from apparently puzzling behaviors?). Dual listed with ZOO 5415. *Prerequisites:* ZOO 3600 or LIFE 3400 or permission of the instructor. (Offered fall semester)

4420. Conservation Biology. 3. Addresses the broadest environmental issues facing society (habitat loss, invasion, overexploitation) and the mechanisms driving them, with particular attention to the Intermountain West. Through computer exercises, students also learn how to evaluate conservation efforts and make management recommendations. Cross listed with BOT/ENR 4420. *Prerequisites:* LIFE 3400 and one of the following: ENR 3500, STAT 2050, or STAT 2070.

4425. Genetic Markers. 3. Overview of the use of genetic, molecular markers for the analysis of natural populations of plants and animals. Approaches range from individual identification to systematics, with a core focus on populations. Dual listed with ZOO 5425. *Prerequisite:* LIFE 3050.

4430. Limnology Laboratory. 2. Utilizes basic field techniques in limnology. Emphasizes analysis and interpretation of data obtained from field and laboratory exercises. *Prerequisite:* concurrent enrollment in ZOO 4440. (Offered fall semester)

4440. Limnology. 3. Studies ecology of inland waters; biological, chemical and physical features of lakes and streams. *Prerequisites:* LIFE 1010, 3400 and one year of chemistry. (Offered fall semester)

4540. Invertebrate Zoology. 4. Studies major invertebrate phyla of the animal kingdom. Studies each phylum with respect to morphological and taxonomic characteristics; functional and evolutionary relationships; environmental adaptations; life cycles of representative types. Includes laboratory. Dual listed with ZOO 5540. *Prerequisite:* LIFE 2022. (Offered fall semester)

4550. Wetland Ecology. 3. Study of the function of inland and coastal wetlands: hydrology, biogeochemistry, microbial ecology, distribution and production of algae and macrophytes, decomposition, contaminant processing, ecology of invertebrates and vertebrates, and food-web structure. Roles of wetlands in aquatic and terrestrial landscapes, wetland classification schemes, and conservation programs. One-day field trip required. Dual listed with ZOO 5550. *Prerequisites:* LIFE 1010; LIFE 2022 or 2023; CHEM 1030.

4560. Quantitative Conservation Biology. 4. Covers the application of ecology and genetics to conservation biology, emphasizing the use of mathematical analysis and quantitative thinking. Includes mathematical homework, discussion sections, computer labs, and independent student projects. Dual listed with ZOO 5560. *Prerequisite:* approval of instructor.

4670. Cell Physiology. 4. Focuses on the cellular mechanisms, functions, and pathways that define the cell as the fundamental living unit. Topics include metabolism, second messengers, cell ultrastructure, membrane excitability, transport physiology, contractile systems, cell division, and programmed cell death. Dual listed with ZOO 5670. *Prerequisites:* MOLB 3610, LIFE 3600.

4735. [5730] Advanced Topics in Physiology. 1-4 (Max. 12). Designed to cover advanced topics in Physiology for students specializing in Physiology or related fields. Examples of topis include endocrinology, cardiovascular, renal, neurological, respiratory, and metabolic physiology. Integrative topics (e.g. curcadian rhythms, thermal stress) may also be included. Dual listed with ZOO 5735. *Prerequisites:* ZOO 3115 and 4125 or equivalent as approved by the instructor.

4740. Fish Culture and Nutrition. 3. Studies methods in artificial propagation of fishes. Includes spawning, hatchery methods, water quality requirements and nutritional requirements. Includes laboratory. *Prerequisite:* LIFE 2022, CHEM 1020. (Offered fall semester)

4900. Problems. 1-8 (Max. 8). For advanced students. Studies some particular problem or phase of zoology, or presents reviews and discussions of current advancement in zoological investigations. Content is arranged to suit individual needs of students. Satisfactory/Unsatisfactory only. *Prerequisites:* courses necessary to pursue the problem selected; prior written consent of the instructor.

4970. Internship in Wildlife Management. 1 (Max. 1). Provides practical field experience in resource management for undergraduate credit. Satisfactory/unsatisfactory only. *Prerequisite:* consent of instructor.

4971. Internship in Zoology and Physiology. 1-3 (Max. 6). Provides practical experience in selected biological fields by working with a professional to help bridge the gap between academic and the world of work. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

4975. Practicum in Laboratory Instruction. 1-3 (Max. 6). For advanced students. Students will assist GAs and professors in laboratory preparation and demonstration in undergraduate teaching labs. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

5060. Fundamental Concepts in Evolution. 3. Explores fundamental concepts in evolutionary biology including evolutionary ecology, population genetics, and speciation with an emphasis on both theoretical frameworks and practical applications. Discussion included. Cross listed with ECOL/BOT 5060. Prerequisite: graduate student in good standing.

5050. Statistical Methods for the Biological Science. 3. General statistical analyses and their application to the biological and behavioral sciences. Analysis of variance, regression and correlation methods are studied from a data analytic perspective, emphasizing the conceptual understanding of where and when these techniques should be used and the interpretation of their results. Available computer programs will be utilized. Credit cannot be earned in more than one of the following courses: STAT 2020, 3050, 5050, 5060, 5070. Cross listed with STAT 5050. *Prerequisite:* one course in statistics (all introductory courses except 2000).

5100. Structure and Function of the Nervous System. 4. Aimed at understanding the structure and interconnections within the nervous system, and how structure gives rise to the complex functions mediated by the brain. This is an essential feature of neuroscience. Covers gross anatomy of the central and peripheral nervous system, followed by detailed consideration of the divisions of the brain and their functional significance. Cross listed with NEUR 5100. *Prerequisites:* admission to the graduate neuroscience program, or graduate standing in another related program, or permission for undergraduate enrollment following discussion with the instructor.

5125. Integrative Physiology. 4. Examines how functional organ systems are coordinated and integrated to establish and maintain health. Considers, among others, the functions of the endocrine and central nervous systems. Dual listed with ZOO 4125. *Prerequisites:* C Grade or higher in ZOO 3115; and/or a Pharmacy 1 standing; Graduate students must have permission from the instructor.

5190. Comparative Environmental Physiology. 4. Studies and interprets principles of physiology which adapt animals to various environmental constraints. Introduces the discipline which has risen between the traditional fields of physiology and ecology and provides an understanding of animal distribution and survival. Dual listed with ZOO 4190. *Prerequisite:* LIFE 2022 or 2023 and 1 year of chemistry.

5280. Introduction to Neuroscience. 3. Examines the basic properties of neurons and from there identifies determinants of brain development and how neuronal circuits are formed. How neuronal circuits underlie processing sensory information, coordinated movement, complex functions (e.g. sleep, learning) and homeostasis are discussed. Cross listed with NEUR 5280; dual listed with ZOO 4280. *Prerequisite:* ZOO 3115 or equivalent.

5300. Wildlife Ecology and Management. 1-5 (Max. 6). Concepts of vertebrate ecology integrated with the art of wildlife management, stressing approaches to deal with the inherent uncertainty of managing populations. Strategies to increase or decrease populations of target species, tools used to determine population status (e.g. viability analysis, monitoring, habitat assessment), and ecosystem management approaches are discussed. Lab included. Dual listed with ZOO 4300. *Prerequisite:* LIFE 3400.

5310. Fisheries Management. 3. Acquaints students with theory and techniques of inland fisheries management. Includes methods of evaluating growth and recruitment, and the use of yield models in fisheries biology. Laboratory and field exercises included. Dual listed with ZOO 4310. *Prerequisite:* ZOO 4330.

5330. Ichthyology. 3. Studies anatomy, physiology, and classification of fishes, emphasizing classification and identification of Wyoming fish. Includes laboratory. Dual listed with ZOO 4330. *Prerequisite:* LIFE 2022 or 2023.

5340. Developmental Biology and Embryology. 4. Introduces study of vertebrate embryology and cellular differentiation. Includes gametogenesis, fertilization, blastulation and organogenesis, growth and differentiation, teratology, metamorphosis, regeneration, and asexual reproduction. Emphasizes mechanisms that create form and cellular differentiation. Dual listed with ZOO 4340. *Prerequisite:* one year of life science or one year of chemistry.

5350. Ornithology. 3. Acquaints students with classification, identification, morphology, distribution, natural history, and ecology of the birds of North America. Laboratory included. Dual listed with ZOO 4350. *Prerequisite:* LIFE 2022.

5370. Mammalogy. 3. Studies mammals of the world, emphasizing natural history, distribution, taxonomy, ecology, and morphology of mammalian species. Includes laboratory. Dual listed with ZOO 4370. *Prerequisite:* LIFE 2022 or 2023.

5380. Herpetology. 3. Introduces the ecology, behavior, morphology, evolution, systematics and conservation of reptiles and amphibians. Dual listed with ZOO 4380. *Prerequisite:* LIFE 2022.

5390. Environmental Toxicology. 3. Explores the disciplines of aquatic and wildlife toxicology from environmental, chemical, and regulatory perspectives. Emphasis on standard environmental toxicology testing methods, field studies, statistical analysis, and mechanistic principles, with discussions of contemporary issues in the field. Dual listed with ZOO 4390. *Prerequisites:* LIFE 3400, CHEM 1030, or STAT 2050.

5405. Winter Ecology of the Yellowstone Ecosystem. 2. Winter Ecology emphasizes the effects of winter abiotic conditions on organisms and organismal adaptations. Energy flux, snowpack physics, organismal adaptations, avalanche awareness, and the influence of winter on wildlife management are emphasized through lectures and field laboratories. Students will develop an independent research project and present their results. *Prerequisite:* graduate standing.

5400. Population Ecology. 3. Explores quantitative ecology of animal populations, emphasizing theoretical and empirical work. Provides modern coverage of principles of population ecology for wildlife majors and others who expect to deal with ecological problems in their careers. Dual listed with ZOO 4400. *Prerequisites:* LIFE 1010, 3400 and STAT 2050.

5415. Behavioral Ecology. 3. Behavioral ecology applies empirical and theoretical approaches to ecological and evolutionary underpinnings for behaviors ranging from foraging and predation to social grouping and mating systems. Emphasizes comparative analyses (what phylogenetic patterns exist across diverse species?) as well as genetic/fitness benefits (how do individuals benefit from apparently puzzling behaviors?). Dual listed with ZOO 4415. *Prerequisite:* ZOO 3600 or LIFE 3400.

5420. Ecological Inquiry. 3. Addresses basic ecological concepts and natural resource management issues in the Greater Yellowstone Ecosystem (GYE). Emphasis will be placed on developing critical thinking skills and exploring the effects of resource management policy and actions. Course direction will involve moving from a known facts way of thinking in to realm of evaluating effects of human management of the GYE. *Prerequisites:* LIFE 2022, 3400, and graduate standing.

5425. Genetic Markers. 3. Overview of the use of genetic, molecular markers for the analysis of natural populations of plants and

animals. Approaches range from individual identification to systematics, with a core focus on populations. Dual listed with ZOO 4425. *Prerequisite:* LIFE 3050.

5430. Ecology of the Greater Yellowstone Ecosystem. 3. Covers plant and animal community ecology from both a qualitative and quantitative perspective. Topics include: community interaction of plants and animals; community dynamics, succession, and disturbance; basic data collection and statistical analysis of habitat association data; and the effect of abiotic factors on community structure. *Prerequisite:* LIFE 2022, 3400, and graduate standing.

5540. Invertebrate Zoology. 4. Studies invertebrate phyla of the animal kingdom. Studies each phylum with respect to morphological and taxonomic characteristics; functional and evolutionary relationships; environmental adaptations; life cycles of representative types. Includes laboratory. Dual listed with ZOO 4540. *Prerequisite:* LIFE 2022.

5550. Wetland Ecology. 3. Study of the function of inland and coastal wetlands: hydrology, biogeochemistry, microbial ecology, distribution and production of algae and macrophytes, decomposition, contaminant processing, ecology of invertebrates and vertebrates, and food-web structure. Roles of wetlands in aquatic and terrestrial landscapes, wetland classification schemes, and conservation programs. One-day field trip required. Dual listed with ZOO 4550. *Prerequisites:* LIFE 1010; LIFE 2022 or 2023; CHEM 1030.

5560. Quantitative Conservation Biology. 4. Covers the application of ecology and genetics to conservation biology, emphasizing the use of mathematical analysis and quantitative thinking. Includes mathematical homework, discussion sections, computer labs, and independent student projects. Dual listed with ZOO 4460. *Prerequisite:* approval of instructor.

5600. Research in Physiology. 1-16 (Max. 16). Opportunities are available for research in physiology and in animal behavior. Maximum credit not to exceed 8 hours for master's candidates and 16 hours for PhD candidates.

5670. Cell Physiology. 4. Focuses on the cellular mechanisms, functions, and pathways that define the cell as the fundamental living unit. Topics include metabolism, second messengers, cell ultrastructure, membrane excitability, transport physiology, contractile systems, cell division, and programmed cell death. Dual listed with ZOO 4670. *Prerequisite:* LIFE 3600.

5685. Neurophysiology. 3. Designed to investigate the structure and function of nervous systems, drawing information from both vertebrate and invertebrate organisms. Topics such as sensory systems, motor coordination and central integrative mechanisms are covered in addition to the basic neurophysiology of nerve cells. The laboratory complements the lecture sequence. Cross listed with NEUR 5685. *Prerequisite:* one course in physiology, chemistry, physics.

5690. Advanced Animal Behavior. 3. An advanced consideration of research in, and theory of, animal behavior. *Prerequisite:* senior or graduate standing in zoology or psychology.

5715. Seminar in Neuroscience. 2 (Max. 20). A continuing seminar. All students in the graduate neuroscience program are expected to register for this seminar each semester. The interdisciplinary approach to the nervous system is used employing work from physiology, neuroanatomy and neurochemistry, psychology, pharmacology, and biochemistry. Cross listed with NEUR 5715. *Prerequisite:* admission to the graduate neuroscience program or graduate standing.

5725. Transmission Electron Microscopy. 3. With the emphasis on modern techniques, course prepares students via theory and technical experience to use transmission electron microscopy in biological and material science research. An individual research project is required. *Prerequisite:* consent of instructor.

5735. Advanced Topics in Physiology. 1-4 (Max. 12). Designed to cover advanced topics in Physiology for students specializing in Physiology or related fields. Examples of topics include endocrinology, cardiovascular, renal, neurological, respiratory, and metabolic physiology. Integrative topics (e.g. circadian rhythms, thermal stress) may also be included. Dual listed with ZOO 4735. *Prerequisites:* ZOO 3115 and 4125 or equivalent as approved by the instructor.

5740. Biological Confocal Microscopy. 2. With the advances of technology, confocal microscopy is an increasingly important tool for biological research. Teaches students the basic principles of confocal microscopy and its biological applications. This is a hands-on course and students have the chance to practice on a state-of-the-art confocal microscope.

5750. Research: Ecology. 1-16 (Max. 16). A wide variety of biotic communities, both terrestrial and aquatic, occur in Wyoming which afford excellent opportunities for ecological studies with responses of animals to the physical, chemical, and biotic factors of their environment. The research must be conducted under the supervision of a faculty member.

5780. Advanced Limnology. 3. A consideration of recent limnological work, emphasizing its relation and contribution to the development of ecological theory. Laboratory provides training in advanced limnological work. *Prerequisite:* ZOO 4440.

5820. Research in Vertebrate Fauna. 1-16 (Max. 16). Wyoming affords unusual opportunities for the study of a wide variety of vertebrate animals. The taxonomy, distribution, and certain aspects of the life histories of these animals are still inadequately known and afford excellent opportunities for research. Numerous problems concerning the management of our game animals remain to be investigated. The research must be conducted under the supervision of a zoology faculty member.

5840. Advanced Fisheries Management. 3. Familiarizes students in wildlife management and ecology with the advanced methods and techniques in fisheries management. *Prerequisite:* ZOO 4310/5310 and consent of instructor.

5890. Graduate Seminar. 1-4 (Max. 10). Provides an opportunity for graduate students to critically evaluate publications on zoological research. Prerequisite: 20 hours of biological sciences.

5900. Practicum in College Teaching. 1-3 (Max. 3). Work in classroom with a major professor. Expected to give some lectures and gain classroom experience. *Prerequisite:* graduate standing.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5959. Enrichment Studies. 1-3 (Max. 99). Designed to provide an enrichment experience in a variety of topics. Note: credit in this course may not be included in a graduate program of study for degree purposes.

5960. Thesis Research. 1-12 (Max. 24). Designed for students who are involved in research for their thesis project. Also used for students whose coursework is complete and are writing their thesis. *Prerequisite:* enrollment in a graduate degree program.

5980. Dissertation Research. 1-12 (Max. 48). Designed for students who are involved in research for their dissertation project. Also used for students whose coursework is complete and are writing their dissertation. *Prerequisite:* enrollment in a graduate level degree program.

5990. Internship. 1-12 (Max. 12). *Prerequisites:* graduate standing.

Neuroscience (NEUR)

5100. Structure and Function of the Nervous System. 4. Aimed at understanding the structure and interconnections within the nervous system, and how structure gives rise to the complex functions mediated by the brain. This is an essential feature of neuroscience. Covers gross anatomy of the central and peripheral nervous system, followed by detailed consideration of the divisions of the brain and their functional significance. Cross listed with ZOO 5100. *Prerequisites:* admission to the graduate neuroscience program, or graduate standing in another related program, or permission for undergraduate enrollment following discussion with the instructor.

5160. Neurologic diseases: mechanisms and therapeutic approaches. 3. We will use lectures, student presentations and discussions to learn about impacts, molecular mechanisms and prospects for effective therapy of some important neurologic diseases of man and animals. Disorder we will study will include chronic traumatic encephalopathy, Alzheimer's disease, prion diseases, stroke and epilepsy. Cross listed with PATB 5160. *Prerequisite:* Courses in neuroanatomy and biochemistry; graduate level standing.

5280. Introduction to Neuroscience. 3. Examines the basic properties of neurons and from there identifies determinants of brain development and how neuronal circuits are formed. How neuronal circuits underlie processing sensory information, coordinated movement, complex functions (e.g. sleep, learning) and homeostasis are discussed. Cross listed with ZOO 5280. *Prerequisite:* ZOO 3115 or equivalent.

5685. Neurophysiology. 3. Designed to investigate the structure and function of nervous systems, drawing information from both vertebrate and invertebrate organisms. Topics such as sensory systems, motor coordination and central integrative mechanisms will be covered in addition to the basic neurophysiology of nerve cells. Cross listed with ZOO 5685. *Prerequisite:* one course in physiology, chemistry, physics.

5715. Seminar in Neuroscience. 1-2 (Max. 20). A continuing seminar. All students in the graduate neuroscience program are expected to register for this seminar each semester. The interdisciplinary approach to the nervous system is used employing work from physiology, neuroanatomy and neurochemistry, psychology, pharmacology and biochemistry. Cross listed with ZOO 5715. *Prerequisites:* admission to the graduate neuroscience program or graduate standing.

5800. Research in Neuroscience. 1-16 (Max.16). The research must be conducted under the supervision of one of the neuroscience program faculty. Laboratory opportunities for research include neuroendocrinology, behavioral neuroscience, sensory neurophysiology, neuroanatomy, neuropharmacology, neurotoxicology, neural cell biology, and neurochemistry. *Prerequisite:* admission to the graduate neuroscience program or graduate standing.

5887. Molecular Neuropharmacology. 3. Focus on the molecularly-induced functional changes within the nervous system in normal and disease states. In addition, will provide a thorough explanation of the cellular and molecular actions of drugs on synaptic transmission and discuss the neurochemical basis of behavior. *Prerequisites:* PharmD current standing and instructor's permission or NEUR 5280.

5920. Continuing Registration: On Campus. 1-2 (Max. 16). *Prerequisite:* advanced degree candidacy.

5940. Continuing Registration: Off Campus. 1-2 (Max. 16). Prerequisite: advanced degree candidacy.

5960. Thesis Research. 1-12 (Max. 24). *Prerequisite:* advanced degree candidacy.

5980. Dissertation Research. 1-12 (Max. 48). *Prerequisite:* advanced degree candidacy.